# THE LANCET Global Health Blog

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Ensuring quality care in Pakistan

Muhammad H Zaman

The new government in Pakistan, headed by athlete-turned-politician Imran Khan, has a daunting task ahead of itself. In the health sector, Pakistan continues to perform poorly in maternal and child health, nutrition, vaccination, and equitable access to health care. That said, in his first address to the nation, the Prime Minister singled out maternal and child health, as well as a national health insurance scheme, as his top priorities. This is welcome news. However, as has been noted before, there is little value in universal health coverage if it lacks quality. Pakistan continues to face serious challenges in ensuring quality care and quality medicines for its population.

The cost of poor quality medicines amounts to tens of billions of dollars annually and burdens the system due to death, morbidity, and long-term drug resistance. In 2011, Pakistan faced one of its worst public health crises in the recent past due to poor quality medicines, with the death of over 200 people in Lahore as a result of contamination of a cardiovascular drug with extremely high levels of the antiparasitic drug, pyrimethamine. Furthermore, as Pakistan attempts to tackle the mounting challenge of antimicrobial resistance, the prevalence of substandard drugs, which can lead to treatment failure and facilitate development of resistance, threatens to substantially undermine its national action plan. Beyond public health, the quality of medicines issue is also relevant for trade and exports in a country that is desperate to increase its revenue base. Pakistan does not have any public sector WHO prequalification laboratory (there is only one in the private sector), making it difficult to guarantee the quality of finished products. This affects trade and the ability of Pakistani pharmaceutical companies to increase their exports, as they cannot meet the standards required in the international market.

For the national Drug Regulatory Authority of Pakistan (DRAP), which is mired in corruption, cronyism, confusion, and an unclear mandate, the problem of quality medicines appears to be a low priority. A national effort to provide better health to all needs to have improving quality of medicines as a pre-requisite. Given the current state of affairs, there are five fundamental steps that the new government of Pakistan needs to take to ensure that the medical products available to its people are of appropriate quality:

**Surveillance**

The current system of pre- and post-market testing in the country is broken. Pre-market testing is largely

Pakistan must focus on improving drug quality and regulation
non-existent. Regular and systematic testing of drugs post market is also poorly executed and is ad hoc at best. The problem is particularly acute in rural areas. Poor quality control of unfinished products and raw materials entering the country (especially ones coming from China) due to lack of testing facilities, poor training of inspectors, and limited resources compounds the problem further. Improved surveillance is not just an essential piece of regulation but also an opportunity for the innovators and entrepreneurs in the country to develop and optimize new technologies for rapid, affordable, and point-of-use testing. Field testing, development of new technologies, and creation of pre-qualified testing laboratories will not only improve the quality of drugs within the system but will also enable local manufacturers to compete in international markets.

Transparency in registration
The process by which new drugs are registered needs to be made transparent and connected with better surveillance. The essential medicines list in Pakistan is one of the largest in the region due to redundancy, corruption, and lack of oversight. With a clearer registration and renewal process, connected to regular surveillance, patients will have access to better medicines and new companies will have an incentive to compete in a fairer market.

Training and capacity of inspectors and regulators
The system of recruiting drug inspectors and regulators, on the one hand, needs to ensure merit and transparency, and on the other, needs to provide regular training and career development. Currently, there is no institute for training inspectors to make them aware of the latest surveillance methodologies and testing technologies. Similarly, research in regulatory science in the country is non-existent. With a population of over 200 million and high burden of disease, the regulators and inspectors need to be trained, equipped with the most effective approaches and technologies, and given incentives to innovate and implement.

Regulating the veterinary sector
Pakistan has a large agricultural base and one of the largest dairy markets in the world. Yet, the quality of medical care and the quality of medicines provided to this sector is poorly regulated. The revamped drug regulatory authority needs to ensure quality of medicines for the veterinary sector as a high priority. This is not only important for animal wellbeing but also for ensuring that issues such as antibiotic resistance and zoonotic diseases, which represent a link between the health of humans and animals, are effectively managed.

National essential diagnostics list
Effective and universal health care is unimaginable without access to diagnostics. Earlier this year, the WHO created an essential diagnostics list. Other countries, such as India, have followed suit in customizing that list to their own needs. Pakistan needs to do the same and create a national commission on essential diagnostics.

Universal health care in Pakistan is a lofty and a worthy dream, and one that will pay dividends for generations to come. The impact on the country’s health and economy will not be felt simply by providing a health card to every citizen, but by ensuring that the care that he or she gets rests on the pillars of dignity, quality, and equality.
Beginning the process: shaping global health in a multipolar world for the next 25 years

Richard Seifman

We are now almost two decades into the 21st century and it is increasingly apparent that the existing system of global health needs a make-over to handle the ever-growing repertoire of old and new challenges. Advancements in technology, booming populations, increased mobility, the expansion of trade in health goods and services, and rapid growth and development of formerly low-income countries and emerging markets all speak to a need for fresh thinking. Not only are new problems being posed all the time, but new solutions are constantly on the horizon, though often arising from less conventional sources than might have been traditionally looked to.

In a previous post on this site in April 2018, I discussed the need for greater streamlining and inclusivity in the global health landscape. Leaders of Germany, Ghana, and Norway, have recently called upon the WHO Director General to prepare a Global Plan for Healthy Lives and Well Being for All for presentation at the World Health Summit in Berlin this October. It is hoped that this report will act as an impetus to unify “global actors such as...UNAIDS, UNICEF, UNODC, UNDP, the World Bank and Global Fund to Fight AIDS, TB, and Malaria, the Global Alliance for Vaccination and Immunizations, the Global Financing Facility, and other relevant organisations”, under the guidance of WHO, in order to “streamline their efforts”.

While this proposal is certainly a step in the right direction, it still fundamentally looks to the same limited pool of predominantly western-centric government and international institutions that have been the major players all along; it meets the streamlining criterion but does little to move towards greater inclusivity. While organisations like WHO still have an important role to play, financial, logistical, and diplomatic limitations mean that they cannot do it alone. An example of these limitations is in the implementation of the WHO International Health Regulations (IHR), the potential of which was demonstrated in the relatively successful management of the recent Ebola outbreak in the Democratic Republic of Congo. But while the IHR include mention of a process for pursuing claims of failure to comply, WHO has been powerless as yet to enforce any penalties. Without some pressure or incentive, neither of which WHO is currently able to provide, the potential impact of these guidelines will be severely limited through a lack of compliance.
We now live in a much more complex, multipolar world, where the key actors on the global health stage are no longer entirely from what might be called the West. Shaping any new global health action plan will require bringing a wider range of stakeholders, be they countries or the “other relevant institutions”, mentioned almost as an afterthought in the proposal, centrally into the discussion to allow for greater consideration of new issues, and new solutions, that might not be on the inevitably limited radar of the organisations referred to by name.

Brazil, Russia, India, China, and South Africa (BRICS) are clearly among the new powerhouses that must be brought into consideration. China alone has 20% of its population, roughly 260 million people, earning close to $40 000 per year. The “population and market weight” of all of Asia when combined in terms of numbers of people and purchasing power, has the traditional West pale by comparison. And, as further noted by Jim O’Neill, there are “Next Eleven” countries with rising economies which need to be in the mix (South Korea, Mexico, Indonesia, Turkey, Iran, Egypt, Nigeria, The Philippines, Pakistan, Bangladesh and Vietnam), to which Saudi Arabia should be added.

Then there is the growth of non-State entities. The amounts spent by the private sector, combining profit and not-for-profit entities, are vastly larger than what is coming from the public sector. Technical expertise, as well as research and development of new drugs, devices, and medical procedures, lie far beyond public sector capability. Technical fields outside the health sector per se, such as information technology, artificial intelligence, and biological and electronic combinations, are merely the top of the iceberg in terms of what needs to be taken into account in a forward-looking global health action plan. And those with experience in these emerging fields, outside the government and international institutions, need to be explicitly seated at the table as equals.

Commerce between countries is more significant now than ever before. Conspicuous in its absence in the institutions listed above is the World Trade Organization. The full gamut of trade interests and global health is central to any future proposed treatment of global health. One need only look at the current trade confrontation between the USA and China to realise the breadth of this issue; China has the second largest pharmaceutical market in the world, forecasted to grow from $108 billion in 2015 to $167 billion by 2020, so any hits to China’s economy could have serious ramifications for drug availability and R&D efforts.

After the Berlin Summit, what should happen next is an agreement on broadening the agenda, leadership, and discussion of any new global health compact to one that looks to a longer term, say to 2050. A global health Bretton-Woods-type preparatory process could be developed with a goal of having preparatory milestones, culminating in a decision conference within a defined time period. A limited number of topical Commissions such as on infectious diseases, non-communicable disease, trade and health development coordination could be created which look to the old—and new—elements of global health to produce an agreed framework for the decision conference. This is a moment in world health history when we go forward collectively, one in which “a rising tide will lift all boats”—or none.
After Argentina, other Latin American and Caribbean countries should not be afraid to debate abortion legalisation

Madeleine Elder

Access to safe abortion services is largely restricted in Latin America and the Caribbean and estimated numbers of abortions have increased in recent years. Laws and regulations governing the procedure differ from country to country. The nature of social activism, and the connection of religion to politics and society also vary. Despite differences, advocates, policy makers, and lawmakers across the region should study the Macri administration’s response to local and international calls to action.

On August 8, Argentina’s Senate rejected a bill to make abortion free, safe, and legal within the first 14 weeks of pregnancy. The result came despite sustained social pressure, months of debate and narrow approval in the lower house. That it was discussed at all in the Pope’s homeland was historic. For the first time since the return to democracy in 1983, a government judged the country was ready to discuss abortion. President Mauricio Macri, a pro-life, centre-right reformist, said debate was a “sign of a maturing democracy”. Campaigning is far from over and the government has now recognised that stalling progress could be a mistake. Shifting its approach, it is now channelling political capital into the issue—decriminalisation in some cases could be included in its proposed penal code reform. Abortion will likely play a role in elections next year, something unthinkable in the 2015 presidential race.

In an annual address to legislators on March 1, Macri announced he would allow debate on abortion in national Congress. While disclosing that he is pro-life, he said he would not veto any law. Legislators were free to vote with their conscience and government officials could express personal opinions. The announcement was a surprise. Six bills had been thrown out of Congress over the previous 13 years, despite civil society action and efforts led by a former health minister.

Macri’s calculated decision to allow debate, and the bill’s narrow approval in the Lower House, must be credited to the broad women’s movement in Argentina, and the National Campaign for the Right to Legal, Safe, and Free Abortion, whose activism has gathered momentum in recent years, and strengthened in recent months. Ni Una Menos (Not One Less), a local movement against gender violence and a macho culture (as well as #MeToo and progress in Chile), energised pro-choice campaigners. Their message was simple: “Sexual education to decide, contraception to avoid abortion, and legal abortion to prevent
death.” Campaigners deployed green neck scarves as a symbol of solidarity, which transcended party politics on the streets and in the legislature. The Irish people’s decision to legalise abortion buoyed the movement. And after an unexpected win in the Lower House, campaigns on social media began appearing in Mexico, Chile, Ecuador, Peru, Colombia, and Costa Rica. Then the campaign started to move across the country, reaching the country’s most conservative provinces, where activists hoped their fight would have impact, owing to disproportionate representation in the Senate. As the final vote neared, international voices got louder. Margaret Atwood called on the Vice-President to act, and Amnesty International took out a full-page advertisement in the International New York Times.

Discussion in Congress was also necessary. In the run-up to the lower house vote, more than 700 speakers—ranging in expertise and differing in opinions—presented to lawmakers during 2 months of public hearings. In July, more were held in Argentina’s conservative Senate. Discussion and debate gave room for some decision-makers to alter their approach, including former President Cristina Fernández de Kirchner and Juan Manuel Urtubey, Salta Governor and a presidential hopeful.

It was this, coupled with national health minister Dr Adolfo Rubinstein’s leadership and unwavering focus on public health realities, both in and out of Congress, that enabled Argentines to understand the scale of the problem. As minister, Rubinstein did not offer his personal opinion; instead he defended the national and international evidence bases. The health argument for change was strong. Vital statistics for 2016 placed the country’s maternal mortality rate above regional targets. That year, 43 girls and women died as a result of a termination—31 of which were induced, and seven whose causes for death remain unexplained.

But Macri’s announcement about holding a debate was reactive and politically risky. With his popularity dropping due to a perceived failure to deliver on economic promises, the President risked losing his socially conservative supporters. Debate had the potential to exacerbate tensions within his Cambiemos (Let’s Change) coalition. It could also antagonise the country’s conservative provinces, on whom his government relies for many reasons, including the implementation of reform that seeks to make universal health coverage effective.

Some could argue that it would not have been politically viable for President Macri to support change, and that the government’s approach was sensitive to social and political conditions. Others might state the lack of party pressure on coalition legislators in the Senate resulted in a missed opportunity; the administration could have cemented its legacy as a regional leader and true reformer. Either way, although the government did not anticipate the evolution of social pressure, it had bet that the benefits of its approach outweighed the risks.

Containing the situation by clearing the way for debate limited political credit from the opposition. It could also weaken two powerful opposition forces with historic links to the Catholic Church: the Peronist Party, and the CGT, Argentina’s peak union body. Looser restrictions could save the health system millions. In the context of persistent inflation and fiscal tightening, Argentina increasingly needed to show it was working to reduce costs. Already vulnerable to external economic shocks, in May, after US interest rates increased, news came through that the government sought a controversial International Monetary Fund deal. The US$50 billion credit line was the first to include social protections, but as the government was preparing to make unpopular economic decisions, debate created space for Argentines to discuss issues other than the economy. Meanwhile, debate could help advance its existing efforts around sexual and reproductive health and rights.

Pro-choice advocates lost the vote for a number of reasons, including malapportionment in the Senate, and strong campaigning from Catholic and Evangelical movements. Modifications in the Lower House might have made Senate debate more palpable. But activists had started something and the region, notably Brazil and Chile, was listening.

What lessons can others learn from Argentina? Countries are different and the conditions in Argentina are unique. Since the end of the military dictatorship, few Argentines take the role of civil society and social activism for granted. Argentines may generally be more socially progressive than their northern neighbours. But the Church, whose influence has now also come under public scrutiny, continues to shape social norms and lawmakers.

The Argentine case has helped define the role of health ministers and government heads when navigating the divisive issue in changing settings. Rubinstein’s approach—guided by his understanding of epidemiology, evidence-based policy making, and health systems—brought credibility to a complex, difficult and emotionally-charged debate.

Government heads, irrespective of their personal beliefs, have a duty to understand the health implications of abortion restrictions on the people within their borders. They should—at a minimum—make their electorates aware of public health realities and encourage comprehensive debate for shared social understanding. Macri did miss an opportunity, but by facilitating debate he has become an accidental example for others in the region. If Argentina can make this much progress with a pro-lifer at its helm, other countries can too.
Fixed-dose combination therapy for cardiovascular disease: what can we learn from HIV?

Helen Bygrave

In the HIV world, we are all familiar with the UNAIDS 90-90-90 targets: know your status, get on treatment, stay suppressed. These targets have resonated not only with national programme managers but with health-care workers on the ground and affected communities and have resulted in successes such as that recently achieved by Swaziland where, despite one in four of the population being HIV-positive, the country has reached 84-87-92. Lessons learned from this campaign could, therefore, provide valuable insights into testing and treatment efforts for other conditions, such as cardiovascular disease (CVD) and hypertension.

Swaziland’s results were announced by the director of the country’s antiretroviral therapy (ART) programme at a recent symposium, Fixed dose combination (FDC) pills for cardiovascular disease and hypertension: perspectives and lessons learned from HIV/AIDS and TB, which sought to draw on the experience underlying such successes to tackle the growing public health challenges of CVD and hypertension. In stark contrast to the results seen for HIV, the analogous 90-90-90 figures for hypertension, a disease affecting over 1 billion people globally, portray a far gloomier picture. Global awareness of hypertension is 47%, self-reported use of treatment 37%, and control for those on treatment a mere 14%. Access to treatment for secondary prevention for CVD does not fare any better.

So how could we use the lessons learned from the scale-up of ART to improve programmes for secondary prevention of CVD and treatment of hypertension? One important word that springs to mind is simplification. Many still see treatment of CVD as complex, requiring hospital-level doctors performing individualised fine-tuning of dosage and combination of therapeutic classes. This was the same challenge facing treatment of HIV a decade ago but, through taking a public health approach and working towards treatment optimisation, including the use of fixed dose combinations (FDCs), ART is no longer only for the privileged few who have access to specialist medical care but is available to many of those who need it throughout the developing world.

This was made possible through clinicians and patients alike developing clear requests for researchers and drug developers on how they wanted their treatments to be formulated: one pill, once a day, with minimal toxicity, and in a formulation that could be used across populations at an affordable price. The possibility of a therapy ever meeting
their criteria might have seemed far-fetched two decades ago, but today these characteristics are almost taken for granted in HIV programming in resource-rich and resource-poor settings alike. With WHO providing guidance on this optimised first-choice combination, governments have demonstrated the programmatic benefits of simplified procurement, supply chain, storage, and prescriber practice as well as the cost benefits. For the patient, adherence is easier and has, therefore, improved. In conflict and unstable settings where Médecins Sans Frontières (MSF) works, FDCs also provide a simpler option for provision of care when contingency planning is needed. While one size does not have to fit all, this approach allows simplification for the vast majority, with alternatives made available for the minority who have medical contraindications or side-effects.

The other cornerstone enabling scale-up of ART delivery has been the development and dissemination of WHO guidelines on HIV, shaped by public health principles. The HIV community over the last decade has taken an evidence-based but pragmatic approach to introducing ART into health systems that on the surface may have appeared ill-equipped to successfully manage this disease. This has been made possible through simplification of treatment protocols to allow for decentralisation and task-sharing between different cadres of health-care workers.

Given these successes, why not take a similar approach for hypertension and secondary prevention of CVD? The results of the TRIUMPH study, a clinical trial for a low-dose triple combination of telmisartan, amlodipine, and chlorthalidone to treat hypertension, caught my attention earlier this year. In this study, 68% of the cohort achieved control of their hypertension within 6 weeks, with a single, once-a-day combination tablet that was well tolerated. This would leave just 32% of patients in the cohort requiring treatment modifications, potentially placing a simplified, decentralised and task-shared model of care within reach. Could these modifications also be simplified by taking two pills out from the same pot? This would streamline the supply chain, prescribing, and dispensing alike. Likewise, a fixed-dose combination for secondary prevention that is “good enough” to achieve a public health benefit may also alleviate the burden on the health-care worker who currently struggles to prescribe and dispense multiple tablets.

So, are these formulations currently included in the current WHO Essential Medicines List (EML)? To date, the answer is no. The WHO’s Expert Committee on the Selection and Use of Essential Medicines has turned down three successive applications, citing the complexities of clinical management and the challenges of either too many or too few combinations submitted. Without WHO’s guidance on the programmatic use of such combinations, their role in programmes and market potential—even if included on the EML—are not clear.

But what about the patients? I recently spoke with Pambeyi Mbeure, a patient on ART with MSF in Zimbabwe. Pambeyi lives in Chipinge, a rural village where he travels 15 km to his nearest clinic. He is typical of many people living with HIV in that he also suffers from other chronic conditions. In Pambeyi’s case, they are diabetes and hypertension. He told me that he was first diagnosed with HIV in 2006 and that taking just one pill a day has been manageable to control his disease. With the diagnosis of his other conditions in 2016, he now takes a total of 11 pills a day. “I feel like I’m overdosing when I take all these pills—I just want to sleep. I am used to one pill a day for my HIV, why can’t it be the same for these other diseases?”

MSF, the London School for Hygiene and Tropical Medicine, and the George Institute, Sydney, co-hosted this symposium and are now working with stakeholders from the meeting to define how FDCs may support access to treatment for both hypertension and secondary prevention of CVD.
Ensuring prioritisation of gender and sexual minority health as part of our demands for UHC and LGBT+ rights

Anita Raj and Davey Smith

Every June and July, cities across the USA and increasingly around the world celebrate Pride as a public statement of commitment towards the human rights and safety of sexual and gender minorities. Unfortunately, even as many of us participate in these efforts, we in global health and medicine neglect to use this opportunity to recognise that health is a human right being denied to these groups and requiring greater focus in our efforts towards universal health coverage (UHC).

Much of our understanding and addressing of inequalities in health, particularly in low- and middle-income countries, is limited to people who are cis-gender and heterosexual. Health data that do exist on gender and sexual minorities—eg, lesbian, gay, bisexual, transgender, and gender non-binary people (LGBT+)—largely focus on risks for HIV and sexually transmitted diseases. Such focus can negate or hide broader health issues and inequalities these populations face.

Population-based studies from the USA and Sweden document lower health-care coverage and higher unmet social health and medical needs for sexual minorities relative to heterosexuals. While population-based research on gender-minority individuals is unavailable due to smaller numbers, available data document poor physical and mental health, substantial vulnerability to victimisation from interpersonal violence, and a high level of social stigma and discrimination that impedes health-care seeking. In particular, rates of violence against transgender women are very high, with a majority of them having experienced physical or sexual assault from a romantic or sexual partner. Such violence places them at increased risk of mental health concerns and HIV.

These health inequalities start early, with gender and sexual minority adolescents having increased risk of a variety of behavioural health issues, especially violence and suicidality, compared with their cis-gender and heterosexual peers. Tackling these health issues is complicated by the fact that, for both sexual and gender minorities, health providers themselves can often stigmatise their patients and discriminate against them in the provision of health care. Stigma and discrimination from providers builds and reinforces barriers to health care for these groups. Such issues are of even greater concern in the many countries in which same-sex behaviour or being transgender is criminalised—a form of structural violence rooted in social norms regarding male and female behaviour and compromising safety across genders and sexual orientations.
As we in global health and medicine move forwards from our celebration of Pride and continue our efforts towards achievement of UHC, let us remember to prioritise the elimination of health inequalities among sexual and gender minorities globally through both advocacy for policies that prevent ongoing discrimination AND through improvement of efforts to better reach and provide healthcare services as part of our demand for LGBT+ rights.
Neglected tropical diseases and disability—what is the link?

Hannah Kuper

On July 24, 2018, governments, technology companies, researchers and charities convened in London for the first ever Global Disability Summit. The summit is part of the UK Government’s commitment to support approaches to tackle the discrimination and neglect faced by many of the 1 billion people living with a disability. It also follows the UK’s support to the control and elimination of neglected tropical diseases.

There are many different ways of defining disability. Essentially, people who are disabled have an underlying impairment (such as difficulties in hearing, understanding or seeing), which together with different barriers (eg, negative attitudes, physical inaccessibility) stops them from participating fully in society. As a consequence, people with disabilities are often being left behind in terms of levels of schooling, employment, level of income, and so on. This is important on a global level, as there are an estimated 1 billion people with disabilities, equating to 15% of people worldwide.

There are many parallels between neglected tropical diseases (NTDs) and disability. Both affect approximately one billion people. Both are more common in the poorest parts of the world, and among the poorest people. There is also a direct link as NTDs are frequently disabling. Almost all of the 17 main NTDs can cause disabilities. As examples, trachoma and onchocerciasis can cause blindness; leprosy, chikungunya, yaws, lymphatic filariasis, and Buruli ulcer can lead to physical impairments; Chagas disease and African trypanosomiasis cause a range of disabling outcomes.

NTDs can also lead to disabilities indirectly. For instance, soil-transmitted helminths and schistosomiasis can cause delayed physical and mental development of affected children, predisposing them to disabilities.

People with NTDs also often face stigmatising attitudes and social exclusion, which leads to high levels of mental ill health. Even in the absence of vision loss, trachomatous trichiasis can reduce quality of life and participation in activities of daily living because of the pain and discomfort that it causes. The reason for the global attention on NTDs is actually because of their disabling effects, as few are directly linked to mortality.

Since NTDs can cause disabilities, there is a good argument for integrating rehabilitation within NTD programmes in order to improve the quality of life of people affected. Rehabilitation can be defined in a narrow medical sense, such as provision of physiotherapy or assistive devices. It can also be conceptualised more broadly, including programmes to overcome stigma and discrimination, improve employment opportunities, and provide social assistance. Incorporating this focus in NTDs programmes is
also important since disability, poor mental health, shame and stigma can reduce help-seeking and treatment adherence, and so make it more difficult for NTD goals to be achieved.

Currently, integration of rehabilitation within NTDs programmes is lacking. The focus on NTD programmes is mostly to prevent and treat, in the belief that if these are effective then rehabilitation won’t be needed. However, in today’s world not all cases of NTDs can be avoided, and many people are already disabled as a result of NTDs. This means that incorporating rehabilitation into NTD programmes is still needed. Two steps are required to achieve this goal. Firstly, the rehabilitation needs of people with disabling NTDs must be assessed, both in terms of medical and broader needs. Secondly, NTD programmes need to be expanded to incorporate provision of rehabilitation, or to link to existing rehabilitation services. As an example, Lepra, a leprosy focused charity, offer programmes which focus both on the diagnosis and treatment of leprosy but also on tackling stigma and discrimination and providing means to improve livelihoods.

It is also important to consider people with disabilities when designing NTD programmes. On average, people with disabilities will make up 15% of the population, and so 15% of participants of mass drug administration and other NTD control programmes. This proportion may be even higher, as both NTDs and disabilities disproportionately affect poor people. If people with disabilities are not included in programmes then the global targets for elimination and management of NTDs will not be met.

People with disabilities may find it more difficult to engage in NTD control programmes for a variety of reasons. For instance, trachoma or schistosomiasis programmes may operate mass drug administration through schools. However, children with disabilities are often excluded from schools, and so will not receive the treatment. Or messaging about prevention of NTDs may be transmitted by radio, which will not reach people who can’t hear. Steps are therefore needed to ensure that NTD programmes are inclusive. This may require tackling physical barriers (eg, ensuring treatment distribution points are accessible), providing communications in a range of formats (eg, visual, radio), and including images of people with disabilities in campaign pictures to highlight that the programme is for everyone. It is vital to include people with disabilities in the planning, and potentially delivery, of NTD programmes, to ensure that they are set up to be accessible for all. Monitoring inclusion is also important, to check whether these efforts are working. As an example, Sightsavers has monitored whether people with disabilities are included in their trachoma trichiasis camps and mass drug administration work within its NTD programme in Tanzania.

Disability and NTDs are intertwined. Expanding the focus of NTD programmes to integrate rehabilitation will help improve the quality of life of people living with NTDs. Ensuring that NTD programmes are inclusive of people with disabilities will mean that a greater proportion of the population is reached, and NTD targets are more likely to be met. Harnessing the current momentum behind both disability and NTDs will make both sectors stronger, and help make sure that ‘no-one is left behind’ as we move towards NTD control.
Biocitizenship and forced removals

Chris Simms

There are researchers, including in the global health sphere, who have an interest in how lack or loss of power gets into the body and causes physical illness and mental anguish.

Farmer (and others) have looked at questions of citizenship, power, and rights in the context of colonialism, a telling and far-reaching example of such disempowerment. They embrace the notion of biocitizenship—a concept that considers the ways access to limited social goods mediates the relationship between citizens and state, and helps define who “belongs” (as citizen) and who does not. This notion of biocitizenship provides a useful lens to interrogate how forced removals of established families and communities affect well-being.

A report from May 2018 by the think-tank Oakland Institute describes the burning of homes and uprooting of tens of thousands of Masai in Tanzania to make way for foreign-owned tourism development. Studies by the International Consortium of Investigative Journalists (ICIJ) show that the World Bank, sometimes failing to adhere to its own guidelines, funds projects that uproot communities—more than 3 million people over a 10 year period. Some forced removals harken back to colonial and post-colonial periods—for example, the resettlement of millions of Tanzanians in the 1960s and 1970s into 2500 villages, the uprooting of 1.2 million Kenyans, 2.5 million Algerians (1952–1963) or millions of people from District 6 in apartheid South Africa (1960–1983). These tragedies typically present as humanitarian crises and victims consistently speak of extreme anxiety, sadness, and anger.

A striking example of a forced removal policy which has drawn international attention is the still evolving British political crisis known as the Windrush scandal. In 2010, in response to rising levels of nativism, the British Home Office launched its draconian immigration campaign which became known in 2012 as its “hostile environment” policy. Designed to reduce the number of illegal immigrants, it forced landlords, employers, banks and NHS services to run immigration status checks on those, in effect, “who looked like or sounded like immigrants”. The 2016 Immigration Act gave landlords the right to evict tenants who could not prove their citizenship. Caught up in this initiative were citizens known as the Windrush generation, immigrants from the Caribbean (and elsewhere) who had arrived between 1948 and 1971 and given leave to remain in 1971. Because they often lacked official documentation and the Home Office had destroyed their stored landing cards in 2010, they had difficulty proving their legal status. Thousands were deported or threatened with deportation, many lost access to social goods and employment and most suffered anxiety. Unconscionably, the government knew of these injustices as early as 2013 and ignored them.

The destruction of Windrush landing cards (despite clear warnings they were vital to establishing legal status) seems to symbolize loss of biocitizenship. Indeed, a multitude of
recorded interviews of Windrush victims show the impact of lost access to healthcare and other social goods as well as a sense of alienation, “unbelonging”, betrayal and anguish associated with separation from family. For some, these losses would evoke a life as a colonial subject, living without status or agency, without biocitizenship, in a region where race-based access to health and social services was a key incentive for independence.

With its “hostile environment”, the British Home Office has linked current policy with its colonial past, parts of which officialdom had made every effort to suppress. Like most European colonial history, it is top-down, incomplete and therefore inaccurate. Archived material consists almost exclusively of military and administrative documentation, absent the voices of ordinary persons. It is selective: the destruction, disappearance, or ferreting away of embarrassing or unwanted colonial records is not unusual. What the Home Office has managed to resurrect and bring to the fore is a Caribbean history, one based on slavery (the importation of 1.6 million slaves)—egregious, profound exploitation across centuries. Only an extraordinary lack of mindfulness of the past and preoccupation with satisfying nativist sentiments could allow this to happen.

The Windrush scandal is now part of colonial history that historians report they want to write from the inside out, as a “history of emotion”. They have begun to focus on the “hostile environment” policy as one explicitly aimed at creating anxiety among immigrant populations. They will focus on those of the Windrush generation that were presented with NHS bills, refused social assistance, evicted from their homes, refused re-entry into the country; on families surprised by their loss of power, right, and citizenship. Inevitably, historians will link the promotion of nativist sentiments beginning in 2010 to the anti-immigration rhetoric and rise of nationalism and will conclude both were ill-judged and shameful.
The new look of MDR and XDR-TB treatment: the times they are a-changing

Helena Huerga, Uzma Khan, and K J Seung

When a 50-year drought without a single new tuberculosis drug ended in 2012 with the approval of two new medicines, delamanid and bedaquiline, the tuberculosis community was poised for fast improvements to multidrug resistant (MDR) tuberculosis care and cure rates. Yet, 5 years later, the new medications are still not used widely enough in the areas most affected by MDR tuberculosis. Will recent evidence of their safety and effectiveness finally tip the scale and substantially improve MDR tuberculosis care?

In 2016 alone, there were 600,000 new cases of the multidrug resistant (MDR) forms of tuberculosis. Only 54% of them were cured using older, challenging-to-take conventional treatments that have devastating side-effects (including psychosis, renal and liver damage, nausea, or permanent deafness) and can require over 14,000 pills and injections for up to 2 years. The potential for quicker, less toxic, and more effective treatments have made many in the tuberculosis community impatient to see new drugs like delamanid and bedaquiline used on a wide scale as fast as possible.

Yet the road to new and effective medical treatments is long. In low-income and middle-income countries (LMICs), where 95% of tuberculosis-related deaths occur, uptake of the new drugs has been slow. This is partly due to clinicians’ hesitancy to use the new medications, usually rooted in outdated or very conservative WHO and national tuberculosis guidelines, as well as administrative hurdles related to drug registration and importation. Unresolved questions also demand clinical research that few low-resource health systems have the money or capacity to answer: how safe and effective are delamanid and bedaquiline compared to older regimens, especially in specific subgroups like those with HIV or children?

Recent research is answering these and other questions. Even before South Africa’s bold expansion of bedaquiline, which a retrospective study published this week showed has had a substantial mortality benefit, in France and in LMIC settings in Georgia, Armenia, and elsewhere, the drug had already been shown to be fast and effective. Delamanid has been used less widely, despite evidence of its success (one previous trial showed promise and the other was inconclusive). Yet interim findings from the endTB observational study, one of the largest studies of the new drugs to date, suggest that drug regimens containing delamanid achieved excellent results even among patients with extensively drug-resistant (XDR) tuberculosis. Reporting 6 months after more than 1200 study patients had started
treatment, the endTB study also confirms the substantial side-effects of older injectable medications (36% experienced hearing loss, acute renal failure, or electrolyte imbalances) and other key drugs (11% of linezolid patients experienced peripheral neuropathy, optic neuritis, or myelosuppression). Side-effects (such as QT prolongation) that were initially a concern for patients receiving new tuberculosis drugs occurred at clinically relevant levels in only 3% of those receiving delamanid- or bedaquiline-containing drug regimens. The final results will be published later this year.

As this and other studies emerge, policy and guidelines must evolve. The upcoming WHO Guideline Development Group meeting in Geneva on July 16–20 and the UN General Assembly High-Level Meeting on Ending TB in New York in September provide opportunities to put the newest evidence into policy and practice in 2018. The evidence is increasingly clear: delamanid and bedaquiline are safe, successful alternatives to more toxic tuberculosis treatments, and both drugs merit being elevated in the WHO hierarchy of drugs for resistant tuberculosis. Additionally, the era of prioritising injectable drugs should end. Although appropriate in some cases, injectables are almost always more toxic (and painful). Their use should be guided by the availability of alternatives, the capacity to monitor for side-effects, and the ability to quickly discontinue their use at the first sign of trouble. A patient-centred approach is paramount.

Studies like endTB and others show that, with focused effort, the hurdles that imperil tuberculosis treatment innovations can be overcome. Improving guidance will accelerate the integration of these new drugs, ultimately achieving better patient outcomes. In this case, new research is providing a roadmap for policymakers who want to cure more drug-resistant tuberculosis, more quickly, easily, and safely. Let’s hope that, for tuberculosis patients, the times really are a-changing.

The authors are members of the endTB Consortium (Expand New Drug Markets for TB)—a research partnership, funded by UNITAID, treating MDR tuberculosis and conducting operational research into the safety and efficacy of bedaquiline and delamanid in 15 low-resource countries (Armenia, Bangladesh, Belarus, North Korea, Ethiopia, Georgia, Indonesia, Kazakhstan, Kyrgyzstan, Kenya, Lesotho, Myanmar, Pakistan, Peru, and South Africa).

This blog was corrected on July 14, 2018. An earlier version stated that the endTB study is a clinical trial. It is in fact an observational study.
India’s Pfizer litigation: balancing patentability and access to medicines?

Shardha Rajam and Mihika Poddar

Despite India’s attempts to fight pneumonia, 20 children die of the disease each hour. Although the Indian Government has initiated several programmes such as the Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea, the issue of access to medicines lies at the heart of the problem. In order to understand the issues involved in these challenges, we take a closer look at the Indian patent litigation against the backdrop of the global accessibility debate.

At present, only two companies—Pfizer and GlaxoSmithKline (GSK)—make highly effective pneumonia vaccines, keeping competition in the pneumonia vaccine market at a bare minimum. In August 2017, the Indian Patent Office delivered a death blow to disease mitigation by granting Pfizer a patent on Prevenar 13—the company’s 13-valent pneumococcal vaccine (PCV13). Médecins Sans Frontières (MSF) has challenged the patentability of Prevenar 13 on the grounds of anticipation, novelty and inventive step and has now approached the Delhi High Court to revoke the patent. MSF has also challenged the patent granted to the vaccine in South Korea, the USA, and Japan, and the patent has already been revoked by the European Patent Office as well as China’s State Intellectual Property Office.

The skyrocketing cost of medicines is a consequence of the patent system, which is justified as incentivising medical innovation. A patent holder is granted exclusive rights of manufacture, sale, import, and use, thereby creating an artificial monopoly. The contradiction between the right to access affordable health care and the rights of a patent holder is a recurring theme in global health policy. The patent litigation over PCV13 in India revisits this debate and could have serious repercussions on access to the drug globally, as well as on similar battles in other jurisdictions.

According to the Indian Supreme Court, a patent is granted only if the invention involves a non-obvious inventive step that is more than a workshop improvement. In order to accommodate India’s socioeconomic realities, Section 3(d) of Indian Patents Act, 1970 (‘the Act’), provides for a higher threshold of ‘non-obviousness’. Therefore, when patents are sought for new versions of pharmaceutical products, there must be some enhancement in their efficacy.

In its landmark Novartis judgment, the Indian Supreme Court used this cautionary approach to decide the patentability of the drug Gleevec (imatinib). The Court held that although the new version of Gleevec had increased bioavailability, beneficial flow properties, improved thermodynamic stability, and lower hygroscopicity, these characteristics merely allowed ‘better preservation of the product’, rather than ‘increase its therapeutic efficacy’. Therefore, it did not meet the threshold put forth in
Section 3(d). Additionally it was held that the product was already anticipated in a prior patent application and therefore did not meet the threshold of ‘invention’ according to the Act.

It is in this context that pharmaceutical patents are adjudged in India. In the case of PCV13, Pfizer produced a vaccine against 13 serotypes of Streptococcus pneumoniae conjugated to the protein CRM197. The aluminium-based adjuvant allowed these 13 serotypes to act together. Pfizer applied for a patent based on the vaccine’s novelty, capability of industrial application, and considering the research involved in increasing its therapeutic efficacy.

However, use of protein conjugates to increase the efficiency of vaccines has been known about since the 1980s and GSK vaccines use a similar aluminium-based adjuvant. Furthermore, several companies such as Sanofi, Aventis, and GSK have adopted strategies to increase the serotypes to be attacked per vaccine. Lastly, MSF argues that the patent also falls foul of Section 3(e) of the Act, according to which individual ingredients must yield synergistic results to be patentable. In the present situation, the 13-valent vaccine simply targets 13 different serotypes without yielding a new result based on synergy. Thus, the grant of patent can be questioned based on Indian law itself.

Further, India’s international obligations also allow for it to refuse the patent to PCV13. According to Article 27 of the TRIPS agreement, India can deny patents to any product or process when such denial is done to protect human life. Therefore, even if it is held that PCV13 is patentable, the patent can be denied solely on the basis of the impact its commercial exploitation has on human life. Alternatively, Article 31 of TRIPS provides for compulsory licensing, whereby the Government can allow others to manufacture the drug even without the patent holder’s consent.

Aside from international law, domestic provisions can also be resorted to. As mentioned, MSF’s contentions provide substantial grounds to revoke the patent. The Act also provides for Government use of patents under Section 100, according to which the Government or its agencies can use the patented invention for its purposes. On a similar note, Section 47(4) of the Act allows the Government to use any patented invention for its own use. It need not even pay royalties to the patent holder when resorting to this provision, thus enabling production of affordable medicines, despite patent protection.

At present, India is able to provide PCV13 to only three out of its 29 states under its Universal Immunization Programme, since one dose of the vaccine costs approximately INR 10 000 per child. Other countries too have been crippled by the prohibitive costs—more than 30% of the budget of South Africa’s national immunisation programme is spent on procuring PCV13 alone. The sheer proportion of the budget allotted to PCV13 makes it unviable for most governments to include in their domestic immunisation programmes. Considering India’s reputation as the pharmacy of the world, domestic decisions can have a substantive impact on not just affordable medicines within the country, but in other countries too. It is imperative that PCV13 is not granted a patent, especially given that India’s patent regime has a high threshold of patentability in cases of incremental inventions. At the least, the Government ought to make use of the regime’s flexibilities, both under TRIPS and its domestic laws, in order to make the drug accessible. The access debate needs to be sensitive to humanitarian needs and the patent regime adjusted accordingly. The outcome of the Indian dispute could create ripples that affect the patent-accessibility balance worldwide.
Mind the gap—closing the gaps in malaria research and development

John Reeder and James Whiting

Why are cases of malaria on the rise in some countries and not others? Millions of dollars have been invested in prevention and treatment, yet we have seen first hand that implementing these interventions requires customised approaches and resources. Drugs, diagnostics, vaccines, and vector control products need to be designed for the conditions in which they are used and to reach the right place, at the right time, in the right quantities.

Without testing the delivery of treatments, tools, and services, these products can fail: whether it’s because they’re not culturally sensitive or because they’re not affordable or efficient. Such research for implementation is an important part of the research and development (R&D) process and is the focus of a new report on funding of malaria R&D. The report, Bridging the gaps in malaria R&D: an analysis of funding—from basic research and product development to research for implementation, sheds light on funding streams for malaria R&D and is the first survey to include funding for implementation research as well as basic malaria research and product development.

The pilot survey of leading funders of malaria R&D covers the 3-year period, 2014–2016, and found that just 16% of total average annual investments of US$673 million were spent on research for implementation. The greatest share of funding went to drug development (32%), followed by vaccines and basic research (21% and 20%, respectively). Investments in vector control tools and diagnostics, while growing, comprise a smaller proportion of funding.

Many of us were alarmed when the 2017 World Malaria Report showed that the total number of estimated malaria cases rose in 2016 by 5 million over the previous year. The increases in malaria cases were not uniform and have prompted malaria experts to recommend a more customised approach—one that ensures that available tools are used to maximum effect. In the absence of data on investments in research for implementation, however, it has not been possible to assess whether funding levels are consistent with the priority assigned to it by leading funders, or whether the funding allocated is sufficient. Although we don’t know the answer to this question yet, the new report concludes that funding for basic research and product development does fall short of the need.

Providing a fuller picture of which R&D areas are receiving funding should help both funders and policymakers match their commitments to the need. Now there is an urgent need for them to come together to discuss the implications of what we have learned.

Bridging the gaps in malaria R&D was developed by PATH, the Special Programme for Research and Training in Tropical Diseases (TDR), and Malaria No More UK, with input from the World Health Organization’s Global Malaria Programme (WHO/GMP), the Foundation for Innovative New Diagnostics (FIND), Medicines for Malaria Venture (MMV), and the International Vector Control Consortium (IVCC). Policy Cures Research provided data on financial resource flows and also conducted the pilot survey to derive an initial estimate of investments in research for implementation.
Russia’s poor health does not need medicine, it needs证据

Daria Sarkisyan

Ahead of the recent presidential election, Russian media reported that some regions have seen a decrease in mortality from cardiovascular diseases such as stroke and heart disease. But what the media did not report, was that deaths from other diseases have sharply increased.

Experts explain that if a person dies due to a stroke and has uncontrolled diabetes, doctors simply write the cause of death as diabetes, not cardiovascular disease or stroke. Inevitably, this has led to significantly improved but misleading reported ‘survival’ rates from cardiovascular disease.

As the global health community puts its efforts to achieving universal health coverage (UHC), a critical part of the UN’s Sustainable Development Goals, this story is particularly revealing. As evidence is consistently misrepresented, it is a misnomer to talk about ‘health for all’ without talking about health systems and quality.

My own family’s experience illustrates the challenges plaguing the Russian health system. Despite the typical symptoms of diabetes, my grandmother was not diagnosed in time for it to be managed appropriately. My family were informed that she had a critically high blood glucose only after a delay of days after it was tested. The problem was not only the poor education of doctors and the ambulance team, but the process of diagnosis and treatment. In all stroke cases, a quick response is critical. Yet, my grandmother had to wait for hours to be transported to a hospital that had a CT scanner and these delays were exacerbated by a shortage of staff. My grandmother died after a few months at home and it was my mother that took on the role of physiotherapist, occupational therapist, and social worker, without sufficient medical or social support.

Ultimately, what is written down is that my grandmother died of a stroke as a result of uncontrolled diabetes. In fact, she died as a result of a series of medical errors, which were completely preventable. My family’s story is one of many. We are not just talking about the failures of the Russian health system in remote parts of the country, but in its capital, Moscow.

It is not known how many doctors in Russia speak English, the international language of medicine. However, based on the overall level of English proficiency (Russia is 38th in the ranking), this is potentially a small group of doctors. In 2014, according to the press office of Uptodate.com, a large and popular evidence-based resource, the subscription to this website included less than 10 Russian hospitals and less than 100 individual Russian doctors.

This is concerning. Russia’s approach to medicine has been very isolated from the West for a long time. As a
result, the Russian health system still uses certain drugs without proof of their efficacy, including nootropics for improving brain function and hepatoprotectants for liver protection. This is symptomatic of a post-Soviet country.

According to Dmitry Troschansky, the deputy chief physician of the Sergey Yudin Hospital in Moscow, doctors at this hospital want to practice evidence-based medicine and to spend money wisely. That is why they have, for example, abandoned the use of these drugs and the inefficient antiseptic Brilliant Green, which now saves the hospital annually 2 million rubles (€28 000), not taking into account the number of infections prevented by using more effective products. While this is positive, it is clear that the issue is not about money alone.

Russia spends 7.1% of its GDP on health care, less than many Western European countries, but more than the 5% being called for by the global health community. The problem is the poor education of doctors, health system issues, and how effectively these funds are spent.

There are many doctors who would like to practice evidence-based medicine, yet the legislative environment is preventing them from doing so. It is easy to abandon the use of Brilliant Green, but much harder to make serious changes within the hospital and beyond. There are several laws that provide favourable conditions for local manufacturers of drugs and medical equipment. Since they do not have to compete with Western companies, the quality of their products can be very low and state facilities are obliged to purchase these cheaper Russian versions.

Unfortunately, the demand for medical care underpinned by standards of evidence-based medicine is simply not there. Russia does not have the equivalent to nhs.uk or medlineplus.gov that patients can revert to if they are in doubt. They are not in a position to hold the medical professionals or the state to account. On the official website of the Russian Ministry of Health, there are recommendations including detoxing by drinking juices or spending time in a sauna.

Russia is a long way from achieving UHC. It must first establish a practice and culture of care based on evidence. This needs to be facilitated by the necessary education of health-care professionals and of the Russian population. All of which has to happen alongside a conducive legislative environment to ensure that medical care, drugs, and equipment are effective and do not continue to compromise the efforts of doctors and the health of Russians.
Demanding a roadmap for non-communicable disease action: beyond “best buys”

Samuel G Ruchman, Phillip Groden, Daniel Newman, and Neha Sikka

The WHO Independent High-Level Commission on NCDs recently completed its first phase of work by releasing a report, titled Time to Deliver, containing recommendations meant to “accelerate action against NCDs”. We applaud WHO for this call for governments to refocus on achieving global targets, including 2030 Sustainable Development Goal 3.4. As rising health professionals inheriting the challenges presented by NCDs, we support the development of a specific, feasible plan that combats the root causes of NCDs and prioritises partnerships and investments that will ensure successful execution and sustained gains. We see key opportunities in (a) promoting South-South collaboration and unconventional North-South partnerships; (b) including patient and community voices; and (c) developing the capacity to implement an NCD agenda among the next generation of global leaders.

The Commission’s report, published by the WHO and in The Lancet, outlines recommendations that would bolster a practical approach to combating NCDs. Key suggestions expand approaches already proven effective in reducing NCD risk—including those that increase access to key preventative treatments (recommendation 3a) and notably those successful in the fight against tobacco (eg, recommendations 4e and 5a). Comparable suggestions aimed at other health-harming products (eg, alcohol and deleterious foods; recommendations 4c and 4d) promise similar health and economic gains and may prompt private sector collaborators to create affordable, healthy choices that harness the marketplace.

Although “best buys” and sound regulation are necessary components to any plan to combat NCDs, simply suggesting that governments expand upon these principles will not be enough. The Commission recognises that “lack of policies and plans for NCDs” is a chief obstacle in achieving NCD targets, but the report provides no guidelines for transforming its high-level recommendations into active policy. The world requires a specific roadmap to implementation. In 2015, when Kenya attempted to institute a tobacco tax, the country found itself embroiled in a costly legal battle with British American Tobacco (BAT)—not unlike the fight its neighbour Uganda had recently lost. Time to Deliver urges governments to accelerate the fight against tobacco but fails to help the report’s potential users overcome these known challenges. For example, to achieve the implementation of “fiscal measures” against tobacco, alcohol, and “other unhealthy products”
(recommendation 5a), an effective roadmap would explicitly outline: the health-harming products recommended for taxation and targeted-policy; strategies to ensure appropriate implementation and enforcement within transnational contexts; and legal and economic risks countries may need to mitigate to ensure longevity, acknowledging challenges many countries have already faced in similar arenas.

We hope the Commission will build on its first report by setting aggressive deadlines for convening stakeholders, holding them accountable, and developing a robust plan for the ideal implementation of each key recommendation; few countries can afford to wait much longer. To ensure short-term and long-term success, the implementation process must not miss opportunities to engage countries, civil society, and rising professionals in new ways.

First, as part of creating a broad coalition for meaningful change, South-South collaborations and unconventional North-South partnerships in aid and innovation must be harnessed. For example, Uruguay has demonstrated leadership in previously winning a lawsuit against Philip Morris. Yet the expert panel involved in the Commission’s initial technical consultation noticeably under-represented Latin America, the Caribbean, and key regions of Asia and Africa. Additionally, we do not believe that any solution that relies on indefinite official development assistance from the global “North” can be considered politically sustainable.

Second, despite the brief period of online public comment, the Commission’s recommendations were largely created without the direct inclusion of patients and community members. Recent reportage has outlined challenges and violence that on-the-ground anti-smoker activists face in Nigeria. Lack of inclusion of these voices is detrimental to ensuring the accountability measures proposed within the report (recommendation 6) and limits the Commission’s capacity to address the structural inequities and systemic barriers that underlie many chronic conditions. Grassroots participation will be key to understanding these challenges within transnational contexts, building the much-needed momentum that has hindered NCD action thus far, and achieving the report’s principles of both assisting the most vulnerable populations and encouraging bottom-up civil society movements.

Third, the Commission must build human capital for a sustainable future. The Commission recognises human capital as the “largest component of the overall wealth of countries”, and we desire concrete investment in the next generation. Seeking empowerment for our international community of peers, we proposed during the Commission’s technical consultation that the Commission seek to create a global fellowship to ensure adequate leadership and workforce for country-specific innovation regarding the global NCD burden. A fellowship could leverage the talents of rising professionals from diverse disciplines including policy and law, health systems, and urban planning. This global cohort of innovators—deeply knowledgeable about their own communities—could build regulatory frameworks (recommendation 4a) and mount litigation necessary to ensure they remain robust. Furthermore, fellows could receive training to develop evidence-based models for deploying community health workers in NCD prevention and management (recommendation 3b) and align urbanisation and built environment with health promotion.

We hope that the WHO Independent High-level Commission on NCDs will build on Time to Deliver by generating a specific plan for NCD action in partnership with global patients and health-care societies. Strong ties between WHO, governments, the private sector, and affected communities in home countries are necessary to ensure that this succinct plan—with its recommendations appropriately targeted at the root causes of NCDs—does not ultimately fail due to a short-sighted execution.

NCDs require immediate global action, and the next generation of health-care providers demands sustainable solutions. As rising health professionals, we and our patients will inherit the consequences of an agenda that fails to ensure its success. We hope the WHO will continue to seek their input and invest in their empowerment to combat NCDs. We will use our voices to ensure it.

Co-authors: Charles Sanky, Stephen Russell, Raia Blum. This response was developed with support from the Arnhold Institute for Global Health at Icahn School of Medicine at Mount Sinai.
1968: a revolutionary year, also for reproduction

Nordic Ministers for Development

1968 became synonymous with a generation known for its ambition to change the world for the better. A historic decision was made that year, which carried the potential to fundamentally change the lives of all individuals—and of women in particular.

On April 22, 1968, delegations from 84 countries convened in Iran for the International Conference on Human Rights. With only 39 women among more than 350 delegates, the conference was a man’s world deciding on a crucial right for women’s lives. It considered “that couples have a basic human right to decide freely and responsibly on the number and spacing of their children”.

This recognition of “reproductive rights” in a meeting room in Tehran was as revolutionary as any demonstration that took place in the streets that year. In 1968, world population had just passed 3.5 billion, with a 1 billion—or 40%—increase in just 17 years. Women had five children on average globally. Serious concerns were voiced that population growth would hamper the struggle against hunger and poverty.

Against this background, it was remarkable that world leaders recognized reproductive rights as human rights—even if feminists early in the century had already argued that access to birth control is a fundamental right for women and even if the availability of the pill from 1960 had broadened contraceptive choices.

To spearhead implementation of the landmark declaration, the UN fund for population activities, UNFPA—now the UN Population Fund—became a stand-alone UN entity in 1969. Denmark, Finland, Norway, and Sweden supported UNFPA from the very beginning and have since been among the top donors to the Fund.

Concerns about population growth did not, however, disappear with the stroke of a pen, and all women were not provided with means to control their fertility in 1968; it would take another couple of decades before common ground was found between the demographic and women’s rights points of view.

In 1994, 179 countries met in Cairo at the International Conference on Population and Development (ICPD). Here, researchers put a focus on the millions of women who would like to avoid pregnancy but who were not protected by modern contraception. The evidence-based argument was made that if only this unmet need was met, demographic concerns would be put to rest. Thus, a new consensus focused on fulfilling the unmet need for contraception and thereby reproductive rights.

As we mark the 50-year anniversary of reproductive rights, fertility has been halved compared to 1968, being down to 2.5 children per woman on average globally. Still, 214 million women in developing countries have an unmet need for contraception. This is about one in four women in developing countries with a need for contraception. Moreover, each year 25 million unsafe abortions are estimated to take place globally, the majority in low-income countries.
and middle-income countries. Unsafe abortion is one of the four main causes of maternal mortality and morbidity. In addition, millions of women suffer disability because of complications due to unsafe abortion.

Fulfilling the unmet need for contraception and ensuring access to safe and legal abortion holds the potential to improve the lives of women and families, lifting them out of poverty. We are pleased that, since 2012, the need of 38·8 million women has been met in some of the world’s poorest countries. Young women, who are able to stay in school and postpone their childbearing, generally choose to have fewer children; they have better income-earning opportunities and will be able to invest better in the nutrition, health and education of their children.

Early and multiple pregnancies to a young woman are likely to confine her and her family to poverty, as she will have limited opportunities to finish school and education and to have a job.

Denmark, Finland, Norway, and Sweden strongly believe in a woman’s right to decide over her own body as an end in itself and as an important vehicle for further development. Therefore, we are not only strong financial supporters of UNFPA and other frontline organisations working with sexual and reproductive health and rights, but also strong political supporters of girls’ and women’s rights. When other countries step down and reduce funding and support, we together with other like-minded groups step up, for instance as part of the SheDecides movement, which finds that the world is better, stronger, and safer when a women decides whether, when, and with whom to have sex, to fall in love with, to marry, and to have children.

When the Human Rights Conference concluded in May 1968, reproductive rights were human rights. At the 50-year anniversary, the time has come to fulfil this right for all women, enabling them to have children by choice, not chance.
Minamata Convention in Mozambique: are we searching under the wrong lamp post?

Fritz Brugger

The Minamata Convention, a global treaty that aims at protecting human health and the environment from the adverse effects of mercury, has put artisanal and small scale gold mining (ASGM) on the agenda of the international community. Globally, ASGM is the biggest source of mercury emissions. However, in Mozambique coal combustion might soon emit more mercury to the environment than the country’s informal miners.

Mozambique has declared ‘more than insignificant’ ASGM under the Minamata Convention. This self-declaration requires the government to work towards a National Action Plan to promote mercury-free methods, formalise and regulate the sector, inform and train ASGM communities, and develop an ASGM-related public health strategy.

The country’s 65 to 75,000 ASGM miners release between 1.5 and 4.5 tons of mercury per year according to the Global Mercury Assessment. Elemental mercury is used in the ASGM process to form gold amalgam. The most important direct route of exposure is by inhalation when the amalgam is heated to separate the gold. Yet, individuals are also exposed if liquid mercury is not properly stored or if surrounding surfaces have been contaminated. Mercury can further volatilise from contaminated waste materials at mining sites. Because mercury is a persistent substance, it can accumulate in the food chain, inflicting increasing levels of harm on higher order species such as predatory fish and fish-eating birds and mammals.

Mercury is considered by WHO as one of the top ten chemicals of major public health concern. Acute as well as chronic, lower level exposure to elemental mercury have toxic effects on the nervous, digestive, and immune systems and on lungs, kidneys, skin, and eyes.

However, the public health sector in Mozambique is not ready to address mercury related challenges. In a recently completed institutional assessment, we found that the four public health priority areas (community health, occupational health, environmental hazards with health implications, chemicals management) require major efforts to effectively support the mining communities and to protect the wider public.

While the international community gears up support for the ASGM sector in Mozambique, an emerging source of mercury seems to be completely overlooked: Mozambique holds the fourth-largest recoverable coal reserves in the world. According to the Ministry of Energy, Mozambique is set to transform its electricity generation from virtually
exclusively hydropower to include about 25% coal by 2025 to cope with the fast-growing demand for electricity; the projects under discussion add anything between 750 and 3870 MW power generation capacity.

Globally, coal combustion is the second biggest source of mercury release with about 475 tons per year. Coal does not contain high concentrations of mercury, but the combination of the large volume of coal burned and the fact that a significant portion of the mercury present in coal is emitted to the atmosphere yield large overall emissions.

Whilst for many major reasons coal is the wrong source of energy for a climate smart future, it is unlikely that the government of Mozambique will deny itself of the use of this relatively cheap and readily available source of energy despite serious health and climate concerns. Projected coal-fired power plants in the vicinity of the towns Tete and Moatize with a joint population of over 300 000 people are a particular public health concern.

Focussing on mercury emissions, we did a back-of-the-envelope calculation using the parameters applied in the Global Mercury Assessment. Our preliminary data show that coal power plants will emit between 0·32 tons (750 MW installed capacity, low level of coal mercury content) and 3·4 tons (3870 MW and high level of coal mercury content) per year. Taking 2000 MW capacity and an average coal mercury content as reference scenario, 1·27 tons of mercury will be released to the environment.

From a public policy perspective, addressing this new source of mercury emissions is therefore as important as focusing on dispersed small-scale miners.

Technically, it is feasible to eliminate 95% of the mercury emissions from coal combustion using most recent technology. Increasing power generation efficiency, advanced plant design, and filter technologies can further reduce air pollution and CO₂ emissions although it will never make coal combustion a clean technology.

From a regulatory perspective, the challenge is manageable. The number of addressees is small and the policy measures are quite clear. Building technical capacity and procuring the equipment for effective monitoring and enforcement are possible.

Politically, it is a harder sell. The Mozambican government is likely to feel the pressure from investors against stricter environmental regulation, particularly with volatile coal prices. The fear that cleaner coal combustion might translate into more expensive electricity for its electorate and for the local industry might further weaken the appetite for enforcing advanced environmental standards.

Western governments are equally reluctant to touch the coal sector given the current climate debate; they can better sell the support of rural electrification with renewables and small-scale mining projects to their domestic constituencies.

While these are notable and important initiatives, donors cannot turn a blind eye to the elephant in the room. It is time to seriously engage with the government in Maputo about the coal industry regulation and reasonable abatement cost per kWh—but also to engage with the investors and technology providers at the domestic front.
To vaccinate more girls, involve the teachers

Brian Atuhaire

Maria Ayikoru thinks of the girls in her care as her children. The primary school teacher in northern Uganda knows every student’s story: where she came from, what she needs. She is ideally situated to ensure these girls receive vaccines, yet she has no formal role in that process. If we want to ensure that all children receive recommended life-saving vaccines, teachers like Ayikoru should be involved. Indeed, vaccination programmes need to meaningfully consult and engage school stakeholders—especially teachers—to lead mobilisation and supervision of school-based vaccination.

Traditionally, health workers have led vaccination efforts including planning, mobilisation, education, and treatment. In Uganda, we have achieved considerable success for vaccination programmes targeting children under one year of age. Some 82% of children received measles-containing vaccines in 2016, while 78% received the pentavalent vaccine, which protects against five major diseases. But we are still missing opportunities to further ensure the health of girls through vaccination.

The Human Papilloma Virus (HPV) vaccine, which provides protection against cervical cancer, has been recognised as a cost-effective strategy, alongside screening and treatment, to reduce cancer in both low-income and high-income countries. The World Health Organization ranks cervical cancer as the fourth most common cancer among women worldwide, with approximately 528 000 new cases and more than 266 000 deaths annually. 85% of these cases and deaths occur in the developing countries. In Uganda, cervical cancer is the leading cause of cancer-related deaths among women, killing an estimated 2275 women annually.

Several African countries including Uganda, Rwanda, Lesotho, and South Africa have introduced the HPV vaccine into their routine immunisation programmes. Other countries including Tanzania, Zimbabwe, Malawi, Ethiopia, and Kenya are in the process or planning to introduce the vaccine in the next two years. Lessons from those that have introduced the vaccine, including Uganda, highlight critical issues that deserve attention from Ministries of Health and supporting partners. Uganda introduced the HPV vaccine in 2015, with mixed results. Full coverage requires two doses, administered six months apart. Delivering that second dose has proved challenging. In 2016, Uganda reached 83% of the targeted girls with the first dose, but only 22% with the second dose. The situation improved in 2017 following deliberate and active engagement of school authorities, reaching 85% of girls with the first dose and 41% with the second dose. This is still too low, and it is wasteful. Girls
who receive only one dose are not fully protected against HPV.

I run immunisation programmes in Uganda and I have been at school sessions where health workers register girls, provide health education talks, and administer the vaccine, as teachers and school health authorities look on. What happens when the health worker leaves the school? Who continues the conversation to encourage girls to return for the second dose? Who answers questions the girls might have? It is too much to ask of health workers to provide continuing care, yet it could be routine work for a teacher. Immunisation, just like many public health interventions, should not be solely a Ministry of Health issue. “They are my daughters, I know them personally,” Ayikoru, the primary school teacher, told me. “I know what homes they come from, I know what support they need, and I try to be there for them—it is my job and my passion.”

Because she has no formal training on the HPV vaccine, Ayikoru thought she had no part to play in this process. But in fact, a teacher is ideally placed to identify eligible girls, keep records, educate them about HPV, cervical cancer and the vaccine, invite health workers to administer the vaccine, and follow up to ensure girls get the full dosage. Senior teachers, called matrons in some schools, particularly should be actively engaged. Further, in countries like Uganda, Tanzania and Rwanda, it is parents who bring children to health centers for most vaccinations, but HPV vaccines are usually administered in schools.

To be sure, teachers have plenty to do, and we wouldn’t want to overload them. But teachers are already overseeing school health programmes. They just need the right information to effectively integrate immunisation into their plans.

The cost and burden of cervical cancer, especially in low-income countries, justifies the cost of implementing new vaccine introduction in effective ways. A study by Johns Hopkins University on 94 low-income countries found that every dollar invested in immunisation leads to a saving of US$16 in direct healthcare costs and up to US$44 if you factor in broader benefits like the value attached to healthier, longer, and productive lives. Moreover, major immunisation donors are beginning to acknowledge multi-sectoral approaches to immunisation and should be willing to invest the extra dollars to get it right, if they have the right information.

Beyond the school, education authorities including district, regional and ministry-level officials should take the lead in planning and oversight of school vaccination programmes. When this kind of engagement has been tried in Uganda, it has led to significant improvements in vaccination coverage. The dropout rate for the second HPV vaccine dose reduced from 61% in 2016 to 44% in 2017 after intensified engagement of schools and the Ministry of Education.

The schools, district and regional education offices, and ministries of education are ready, willing and extending a hand of help to the health sector. Let’s recruit them as collaborators to ensure effective vaccination for vaccines targeted at school-age children, including HPV and tetanus vaccines.
Urgent need for South Asian collaboration against undifferentiated febrile illness

Abhilasha Karkey

In early 2018, highly drug resistant cases of typhoid were reported in Sindh, Pakistan, where an outbreak began in November 2016. These organisms were resistant to all three first-line drugs used for typhoid fever (chloramphenicol, ampicillin, and trimethoprim-sulfamethoxazole), as well as fluoroquinolones and third-generation cephalosporins. These organisms have been termed extensively drug resistant (XDR).

According to the most recent estimates by WHO, approximately 21 million cases and 222 000 typhoid-related deaths occur annually worldwide. Antibiotic resistance is a major problem in Salmonella enterica serotype Typhi, the causative agent of typhoid. Multidrug-resistant (MDR) isolates that are resistant to the three first-line drugs are prevalent in many parts of Asia and Africa and reduced susceptibility to the fluoroquinolones is also widespread.

Fortunately, the XDR organisms in Pakistan are being effectively treated with azithromycin, the last remaining commonly used effective drug in the treatment of typhoid fever. But how long this drug will continue to be effective is anyone’s guess. Emergence of this new XDR organism is alarming to those of us practising in South Asia—primarily India, Pakistan, Sri Lanka, Afghanistan, the Maldives, Bhutan, Nepal, and Bangladesh—which is a hub for febrile illnesses. The causative agents for enteric fever, S enterica serotypes Typhi and Paratyphi, are the most common confirmed bacterial causes.

The challenge of treating enteric fever and the emergence of XDR organisms in Pakistan emphasises the urgent need for the South Asian region to come together and collaborate towards containing the rise and spread of antimicrobial resistance (AMR) in typhoid fever. In response to this challenge, a meeting was held in early March 2018 in Kathmandu, Nepal, with teams from India, Pakistan, Bangladesh, Nepal, Vietnam, and the UK to come to a consensus on a design for a South Asia Regional Collaborative Randomised Controlled Trial (RCT) in the treatment of typhoid- and paratyphoid-like illnesses.

First, the meeting emphasised the fact that many febrile illnesses in South Asia mimic typhoid fever, but have completely different causes that require different treatment regimens. Once malaria and dengue fever have been ruled out with reliable rapid diagnostic tests, rickettsial illnesses seem to be an important cause of undifferentiated febrile illness (ie, fever without a defined cause) in the region. There is a dire need for rapid and reliable tests to accurately...
identify the cause of fever. A key limitation to improving the control of typhoid fever has been the lack of reliable diagnostics tests. Today, we rely heavily on blood cultures that have a sensitivity rate of only 45–70%. In addition to confirming infection in individuals, accurate laboratory diagnostics are needed to ascertain true disease burden and to evaluate vaccine efficacy. It is therefore imperative that, in the absence of such reliable testing, rampant empirical treatment of undiagnosed fever is avoided. When a regional RCT is designed, treatment regimens should cover “typhoid-like illnesses”.

Second, the large-scale emergence of XDR isolates that spread throughout the region, with one case being traced as far as the UK, highlights the urgent need for the region to collaborate, and collaborate now, to implement an effective control programme.

Treating enteric fever in the region is a huge challenge due to diversity in numerous aspects of the disease within the region. While Pakistan reported both MDR and XDR strains, Bangladesh had significant numbers of MDR organisms alone while Nepal and India reported very few MDR cases. While the antibiotic ceftriaxone can be used in places like Nepal and India as rescue drugs, the XDR outbreak limits its use in Pakistan. It is therefore difficult to come to a consensus on what drugs can be used throughout the region.

The occurrence of complications from typhoid, such as gastrointestinal perforation, was reported more often in South India and Pakistan than Nepal. The treatment for complicated cases of typhoid fever requires more aggressive treatment with parenteral antibiotics and possibly corticosteroids. The prognoses for such patients is also dependent on their co-morbidities. Therefore, complicated cases of typhoid fever should constitute a different RCT to that of uncomplicated typhoid.

Fixed dose combination (FDC) therapies include two or more active pharmaceutical ingredients combined in a single dose. The wide availability and rampant use of FDC therapy (for example ofloxacin and azithromycin in subtherapeutic doses for typhoid fever) in India and Bangladesh poses an important problem. Although FDC therapy has proved beneficial for diseases such as tuberculosis and HIV, in other bacterial infections combination therapy generally does not improve patient outcomes (on the population level). That is, it neither increases efficacy nor decreases resistance development. While the rise of antibiotic resistance has sparked lots of research on combination therapy to either overcome resistance, decrease resistance development, or improve patient outcomes, results are ambiguous at best. The current knowledge implies that these kinds of effects are highly strain specific, which means that each patient needs to be evaluated separately. This is, however, not possible to do reliably with current methods.

These facts therefore make the consideration for a common RCT within the region a huge challenge.

Even though WHO strongly recommends the new conjugate typhoid vaccine against typhoid fever be administered in South Asia and plans are afoot for GAVI, the Vaccine Alliance, to help fund vaccine administration in some countries in South Asia, the proper treatment of typhoid fever should be simultaneously seen as an important public health measure. If not, the disease will continue to spread. Typhoid fever is transmitted faecal-orally and without good treatment the people who are chronic carriers—ie, who asymptomatically harbour the organism in their gall bladder—will help perpetuate transmission of this disease despite immunisation and improvement in sanitation.

As attendees left the meeting in Kathmandu, there was a clear call to work together through an RCT to come up with useful therapy to effectively deal with this and other causes of undifferentiated febrile illness in the region. A combination of proper vaccine use and appropriate therapy is our best approach to help curb the incidence of both typhoid and other typhoid-like illnesses in South Asia—and to fight the rise in AMR.
Remote international medical teaching in North Korea

Taehoon Kim, Taeyoung Kim, and James Zuckerman

Since the Korean War ended in 1953, North Korea’s medical education systems have suffered due to its censorship policies, which have banned access to almost all foreign educational resources, including most of the world’s medical literature. Despite academic exchange programmes with Russia, China, and Germany, the information vacuum created by North Korea’s protectionist policies, economic challenges, and international embargoes have led to a decline in the quality of its health-care education and services. In this post, we discuss a telehealth model of providing educational resources to postgraduate medical trainees in North Korea, which may sustainably improve the standard of medical education and care in the reclusive nation.

The Online Medical Education Program (OMEP) is the product of a deliberate partnership between the North Korean Ministry of Education, DoDaum (a non-governmental organisation), Pyongyang Medical University (PMU), and Kim Il Sung Hospital to address the urgent need to improve the nation’s medical education systems. In Pyongyang in September 2016, the programme launched for physicians, public health specialists and nurse practitioners from three out of nine provinces in the nation. During this period, prerecorded video lectures served as training modules for topics including infectious diseases, health economics, epidemiology, and community health. In total, seven courses and 92 video lectures were prepared and delivered via an online web portal to 35 students. Students logged onto the portal to view their lectures, assignments, and even took some of their exams for the courses online. Participating students voiced positive sentiments upon deployment and nearly 55% of students responded that they wished to engage in live, interactive video teleconference lectures with educators from overseas.

In November 2017, 15 North Korean physicians and ten public health professionals connected with foreign educators from around the globe in virtual classrooms—the first time in history that any of the 25 million private citizens of the country has been provided authorisation to communicate with foreigners via the internet. By May of 2018, this programme is anticipated to cover over 30 courses taught by 35 faculty members from the USA, Canada, Denmark, and the UK for 80 students from diverse provinces across North Korea. Upon successful implementation and monitoring of these programmes, the Ministry of Education is set to begin a broader academic exchange programme, significantly expanding the regions of the world where North Korean health professionals can perform research and receive training.

OMEP has significant implications for North Korea’s health-care services. As health professionals return to their provinces of origin, they will seek to apply their lessons and curb the threat of public health issues, ranging from multidrug-resistant tuberculosis and malnutrition.
to hepatitis that are ravaging rural regions of the country. In this vein, public health trainees have voiced desires to create new systems of care delivery and revamp outdated programmes. For instance, a student in the programme remarked, “my goal is to create an extensive telecommunication platform, much like Skype, to connect health professionals and patients across the country” to facilitate treatment support and improve clinical outcomes for patients from low-access regions. While the programme is still in its exploratory stage, this student’s vision captures the initiative’s significant potential to not just revolutionise the nation’s clinical services but also encourage a shift in social and cultural mores regarding the role of technology in medicine, from one of mere novelty to one of vital function.

This programme faces some limitations. First, given the small cohort, it remains to be seen how scalable the initiative will be as the programme begins to cover more students across the country. Second, current educational resources will need to be revamped to better reflect the real conditions of health and health-care services in North Korea. This will be approached through case-based discussions and role-play so that the education can better equip students to apply their new knowledge.

Two events that have occurred in the past 6 months illustrate the inevitable influence of geopolitics on humanitarian aid to North Korea. In September, the travel ban to North Korea disrupted existing humanitarian programmes and channels, many of which have taken years to develop and implement. Since March, there has been thawing of geopolitical tension with the possibility of even a Trump-Kim meeting in May, spurring talks of reconciliation and rapprochement. Such tenuous dynamics have hampered sustainable, long-term efforts at humanitarian assistance to North Korea. This telehealth model of education may perhaps serve as one of the few sustainable paradigms for circumventing the ebbs and flows of such geopolitical morass.
Diagnosis and treatment aren’t always enough: malaria must die

Élodie Gemme

For my first mission with Médecins sans Frontières (MSF), I was matched with the South Kivu mission in Baraka in South-Kivu, Democratic Republic of Congo (DRC). Malaria is endemic in the region and I knew the bulk of my work would involve treating it. On this World Malaria Day, I would like to share the story of Georgette Kandolo and her 7-month old son Zumbe, whom I met in March 2018.

Eastern DRC has endured chronic conflict for many years and since 2003, MSF has worked in partnership with the Ministry of Health at Baraka hospital, as well as supporting several health centres in the surrounding district. Over a quarter of a million malaria patients are treated each year at the Baraka project. I went into the mission confident that the disease was diagnosable and treatable.

As the insecurity worsened in the region during January 2018, thousands of Congolese had to flee for their lives into the surrounding forests, carrying only essentials on their backs. When the fighting got close to her village, Georgette escaped into the forest, with her husband and six children. After a month of sleeping in the bush, the family was able to return home only to find it had been plundered, completely. The thieves had even taken their mosquito nets.

A few weeks later, her infant son Zumbe started having fevers. Despite the ongoing fighting, Georgette carried him through the bush for an hour to reach the closest health post. Although basic, the nurses were able to test him for malaria. When Zumbe tested positive, they gave him a 3-day course of the first-line antimalarial artemisinin combination therapy (ACT). But despite taking a full course of treatment, his fever persisted and Zumbe quickly became too weak to breastfeed or eat.

So, Georgette made a second perilous trip to the health post, where, on arriving, Zumbe had a convulsion and became unresponsive. This time, there was nothing the nurse could do except recommend Georgette travel with her son to Baraka hospital. Worse still, the health post did not have stocks of artesunate suppositories, recommended as a pre-referral treatment for children with severe malaria. Georgette still had five other children waiting for her at home. She walked back to her village and immediately started looking for help. Her husband was away finding work, and since neither she nor he had a phone, she could not warn him of the situation. Frantically, with a comatose baby, Georgette arranged for her other children to stay with neighbours.

In the African Great Lakes region, boats are often the preferred mode of transport. After much searching, Georgette persuaded an acquaintance to transport her and Zumbe by pirogue (a long narrow canoe) for the 3-hour journey to Sebele, the nearest large village. After arriving in Sebele, she paid 4000 Congolese francs (about £1.80) but many...
times her daily income), for a 2-hour motorcycle ride on the bumpy pot-holed mud tracks that lead to Baraka hospital. Throughout this terrifying journey, Zumbe remained in a critical state.

When they finally reached Baraka hospital, Zumbe received intravenous treatment to reduce the levels of malaria parasite in his blood as rapidly as possible. He also received an emergency blood transfusion to treat his severe anaemia—a common consequence of malaria and often fatal in infants.

I had read blog posts and stories about dying children reviving miraculously after finally receiving the right treatment. However, in the first 24 hours, Zumbe had additional convulsions, severe hypoglycaemia and was diagnosed with severe pneumonia. Once again, merely having the correct treatment was not enough to improve his condition; Zumbe’s coma lasted 3 days and his fever for 10. On intravenous antibiotics for his pneumonia and surrounded by sick children in an overcrowded ward, Zumbe subsequently developed diarrhoea. Precise diagnosis and fluid management were made more difficult given the limited range of blood tests available and lack of simple radiography.

Amazingly, Zumbe fought his multiple infections and improved over the following 2 weeks. On discharge, as is MSF policy for all inpatients in Baraka, he received a free insecticide-treated mosquito net to take home. Georgette, relieved but exhausted, could finally start her journey back. She had used all her money for the trip to the hospital and could not afford a return motorcycle ride, so she walked to Sebele and then planned to find another pirogue there, hoping to find a way to pay for it when home.

In 2017 alone, the project in Baraka has treated over 225,000 cases of uncomplicated malaria and almost 11,000 cases of severe malaria. Conflict, displacement, perilous access and lack of infrastructure are some of the challenges families must confront to obtain simple care. Some never even make it to a health structure. However, for those who scale this first hurdle of access, treatment alone may not suffice. Often patients arrive at the hospital after much delay, already suffering from complications and vulnerable to co-infections. Despite intravenous treatment for severe malaria, recovery can be arduous and fraught.

Each child I have seen suffering from severe malaria in this difficult context has made me hold my breath. I soon learned that, for the children like Zumbe, at risk of multiple diseases, a focus solely on providing a rapid blood test and first-line medicine in their communities is not always enough. Good coverage of diagnosis and treatment is a victory, but the real triumph will be children surviving and living healthily until adulthood. For that, malaria must die.
Men’s health: the case for global action

Peter Baker

Men’s health has for too long been a problem hiding in plain sight at both the global and national levels. Men’s poor outcomes, not least in terms of premature mortality, are obvious but have not been addressed effectively by either policymakers or practitioners. There are now, at last, some signs of change—but are they enough to make a difference?

The scale of the challenge is clear. Globally, in 2015, average male life expectancy at birth was 69 years, according to WHO data. Sierra Leone had the lowest life expectancy for males at 49 years and another 29 countries, almost all in Africa, had a life expectancy below 60 years. By comparison, average global life expectancy for females was 74 years. The difference in life expectancy between men and women globally has widened by about 30% since 1970.

Men are more likely than women to die from cancer, cardiovascular disease, suicide, road traffic accidents, and other major causes of death. They are more likely to smoke, drink alcohol excessively, and eat a poor diet. In many countries and for many diseases, men use primary care services less effectively than women.

The irrefutable human-rights-based case for addressing men’s health aside, there is a very powerful economic case for doing so. Men’s premature mortality and morbidity has been estimated to cost the US economy alone approximately US$479 billion annually.

Improving men’s health would also affect women’s health, most obviously in the case of sexual health. High male mortality rates adversely affect women, especially in lower-income households and countries, through the loss or incapacity of the primary breadwinner, usually a man. Addressing men’s alcohol and drug misuse would contribute to a reduction in male violence against women as well as against children and other men.

The recently-published 2018 Global Health 50/50 Report, which looked in detail at 140 global health organisations, found that fewer than one-third define gender in a manner that is consistent with global norms (ie, relevant to men as well as women). None of the 40 NGOs in the sample focused exclusively on the health of men and boys; this, the report’s authors comment, “speaks to the need for organisations to truly adopt a gendered approach to programmes and strategies in realising the right to health for everyone”.

Blind Spot, a UNAIDS report published on World Aids Day 2017, showed that, globally, men are less likely to take...
an HIV test, less likely to access antiretroviral therapy and more likely to die of AIDS-related illnesses than women.

The report urges HIV programmes to make services more easily available to men by extending operating hours, using pharmacies to deliver health services to men, reaching men in their places of work and leisure, including sports clubs, and developing new communications technologies, such as mobile phone apps.

The potential role of gender-sensitivity in the design and delivery of health services to men has been demonstrated by the Football Fans in Training (FFIT) weight-loss initiative in Scotland, the first large-scale men’s health programme evaluated by a randomised controlled trial. The success of FFIT has led directly to the roll-out of a similar programme, EuroFIT, across 15 top-flight soccer clubs in Portugal, Norway, the Netherlands and the UK.

Prompted by the Sustainable Development Goals and their focus on non-communicable diseases and gender equality, WHO-Europe is currently developing its first men’s health strategy. This is due in September 2018 and, although it is not binding on the 53 member states in the region, it could act as a catalyst for action both within and beyond Europe.

The strategy will hopefully call for the development of national men’s health policies; currently, these exist in just four countries (Australia, Brazil, Iran, and Ireland). A review of the Irish policy showed that its impact had been considerable.

In the UK, Leeds City Council has shown what is achievable at the local level following a needs assessment and a range of actions to improve men’s use of services.

Whether or not more governments introduce men’s health policies, a more systematic approach to gender and men’s health is now needed. All health policies must be gender-proofed, data sex-disaggregated, men’s needs more fully researched, professional training enhanced, and services reconfigured to ensure maximum accessibility. Attention must be paid to intersectionality to help identify groups of men at particular disadvantage, such as homeless men, migrants and some ethnic communities.

Non-governmental organisations and men’s health advocates can be engaged through multi-disciplinary local and national networks; lay people must also be involved, for example as local men’s health champions. The Lancet and other major journals must pay more attention to men’s health and also to women’s health.

Anything less will leave too many men around the world at continued risk of an unnecessarily unhealthy life and an untimely death.
“Know your epidemic”: driving down HIV in London and beyond

Keerti Gedela

The global health community aims to eradicate HIV from the world in the next 15 years. But with 1.8 million new HIV infections in 2016 it seems like an impossible task. Over the last 3 years we’ve observed a phenomenal reduction in HIV diagnoses in London, predominantly in men who have sex with men (MSM), our highest risk population. This is the first time the UK has seen a reversal of the HIV epidemic in MSM. How was this achieved in London? Are any of London’s successful HIV reduction interventions relevant to settings with differing HIV epidemics? If we are to be successful in ending AIDS, the “know your epidemic” agenda needs heightened focus.

Public Health England reported a 35% decline in new HIV infections in MSM in London between 2015 and 2016. This is largely due to a decline observed in five London sexual health clinics, but predominantly at the 56 Dean Street clinic, which has had a dramatic 80% reduction in new HIV diagnoses from 2015 to the present day (figure 1).

Since the turn of the millennium, new cases of HIV in MSM in London have been increasing, with 1804 new diagnoses in 2015. That year, Dean Street was diagnosing around 50–70 new infections a month, almost exclusively in MSM. We endeavoured to understand and engage London’s highest at-risk population and tailor risk reduction interventions to their needs. The impact was undeniable.

Knowing your epidemic and tailoring services
What does “knowing your epidemic” mean? In 2007, UNAIDS highlighted the need for better data to improve country HIV estimates and improve the response to evolving epidemics and changing needs. It highlighted that globally a multitude of diverse HIV epidemics exist that need targeted responses.

In a changing world we need to continue to understand the attitudes and concerns of affected communities and understand the impact of complex drivers of both generalised and concentrated epidemics, such as sexual behaviour and networks (including technology/social media use for linking up for sexual purposes, chemsex), concurrent sexual partnerships, gender inequality, gender-based violence, and stigma. We need to understand what puts our population at high risk of HIV and where incident HIV infections are occurring.

At Dean Street, we realised that 50% of all our new diagnoses were in those seroconverting—ie, in the very early stage of HIV infection when they are highly infectious. So in 2015, we proactively offered antiretroviral treatment (ART) to all individuals newly diagnosed with HIV (particularly those seroconverting), within 48 h of their diagnosis. It has been a highly acceptable strategy and is likely to have been highly effective in preventing further new infections in this population.

In 2015, PROUD and IPERGAY demonstrated that oral pre-exposure prophylaxis (PrEP) protects against HIV in MSM when taken properly. MSM accessing our services...
were buying generic PrEP online before it was available in the UK and without the support or monitoring they needed. Engaging this population by discussing and supporting their PrEP use in dedicated services is likely to have been another major factor in the reduction in new HIV cases.

We also established risk factors associated with a “very high” risk of HIV. Separate pieces of work recognised that a diagnosis of rectal chlamydia/gonorrhoea, early syphilis, unprotected receptive anal sex with multiple partners, and recent post-exposure prophylaxis for HIV (PEP) conferred a greater than 10% risk of acquiring HIV by the end of the year. We can identify people with these risk factors, educate them on this risk, and invite them to join a digital risk reduction intervention that offers priority access for HIV and sexually transmitted infection (STI) screening. These packages have been developed with our high-risk users and are optimised and delivered via mobile phones, which we know our local population show high engagement with, including for sexual purposes. The risk reduction information is tailored to their sexual health needs and lifestyle.

Health technology innovations such as video-guided self-testing, rapid diagnostics, mobile results, digital health, and social media interventions have enabled the service to be more accessible and user-focused. The downturn in new HIV infections occurred against a background of a surge in HIV and STI testing. Granted, London is a technology-savvy, high-income city, but in many low- and middle-income countries’ information technology and social media are growing and some of this technology is potentially transferable and relevant if tailored well.

Engaging key populations in differing epidemics
Wide-scale HIV testing. ART scale-up to all individuals diagnosed and living with HIV and PrEP (plus voluntary medical male circumcision in generalised epidemics) are key proven medical interventions that need disseminating in key population-focused ways (alongside interventions that can have non-HIV-related public health benefits such as sexual health education, prevention of violence against women, and de-stigma campaigns). But once diagnosed, retention in HIV care and adherence to ART are ongoing challenges globally, preventing people remaining virally supressed, well and non-infectious.

Engaging communities effectively, listening to patient’s narratives, and empowering peer navigators to guide and adapt service delivery in innovative ways can help to improve the effectiveness of these interventions. This could involve community-based treatment delivery, protocols standardising treatment provision at HIV diagnosis, point-of-care testing (HIV and viral load), flexible clinic hours, or digital health solutions.

There are some inspiring global examples of community-based care and differentiated HIV service delivery models, including Uganda’s community client-led ART delivery groups for female sex workers (TASO AIDS); differentiated HIV service delivery for MSM and transgender women led by transgender peers and community based organisations in Thailand (SISTERS Foundation, Thailand); and differentiated ART delivery for people who inject drugs in the north-east region of India (FHI360 Project Sunrise).

PrEP has become an acceptable method of HIV prevention in MSM in London and other high-income cities, but African women and men living in regions with generalised HIV epidemics may not find PrEP as acceptable; we need to understand issues around acceptability of interventions and engage at-risk communities to find the best ways of prioritising need, normalising HIV prevention, and optimising implementation. Kenya has made inspiring and encouraging progress in PrEP scale-up, incorporating PrEP champions with tailored social media campaigns and community engagement. Recent data highlighted that African women in late pregnancy and postpartum are at significantly greater risk of acquiring HIV compared to other times in their life. This data lends power to prioritise HIV prevention, particularly PrEP, in antenatal and postpartum services in Africa; but understanding why these women are at greater risk, the social and sexual dynamics involved, and community engagement may help to optimise interventions. PrEP scale-up is a work in progress and we must learn from dedicated programmes working in diverse epidemics that face many social, behavioural and financial challenges.

We have the tools to end AIDS, with zero new HIV infections worldwide an achievable goal. But to be successful we need to push the “know your epidemic” agenda, be more innovative than before, and tailor services with greater focus and attention.
The need for a geopolitical shift in global health

Richard Seifman and Ok Pannenborg

Over the last half-century, the field of global health has come into its own. The rise of decolonised independent states in the 1960s and 1970s, the end of the Cold War in the early 1990s, growing numbers of market economies, and the subsequent globalisation of trade, communications, and travel—all these factors put global health on an unprecedented growth trajectory. Reductions in global poverty patterns, major health and medical innovations, and a focus on the true “burden of disease” in poorer countries has led to some spectacular successes: eliminating, controlling, or reducing dramatically the plague, malaria, polio, child diseases, HIV/AIDS, influenza, and some pandemic nasties such as Ebola and Zika.

However, as Pablos Mendez and colleagues have highlighted, this field is overdue for a major renovation. Over time the House of Global Health, which was designed and built primarily by the industrialised democracies, has added too many wings, cellars, attics, and garden sheds. It is increasingly looking like it will collapse under its own weight. To call the roll of international health structures, even in acronymic form—WHO, UNICEF, UNFPA, UNAIDS, IAVI, GAVI, the Global Fund, Vaccine Alliance, Stop-TB, Rollback-Malaria, Malaria-No-More, BMGF, Chan-Zuckerberg Foundation, the Children’s Investment Fund, the World Bank, IFC, GFF, TDR, CEPI, ECDTP, USAID, DFID, CDC, NIH, GHIF, Wellcome Trust, NORAD, CUGH—is to invite exhaustion. Each disease, each intervention, each funding arrangement, each innovation approach has its own room, often without connecting doors or even windows. Returns are diminishing and confidence is faltering in many of the people or institutions living in this house.

The mere number of players is not necessarily a problem, but the changing nature of global power structures certainly is. Almost all the inhabitants of this house are from the traditional 20th century OECD homestead. The recently appointed head of the Global Fund was yet another colleague from the UK. The World Bank and IMF remain stuck in a USA-Europe gentlemen’s agreement regarding their chiefs and controlling voting power and, as such, in a 20th century mindset.

Meanwhile, China has established the new Asian Infrastructure Investment Bank (AIIB)—a direct result of the traditional powers’ unwillingness to allow China to take a proportional role. China’s Belt and Road Initiative conveys a strategy that the world’s most populous nation will go it alone: it does not need nor wants the traditional global players to fund and implement its objectives (including the UN’s SDGs). And it is making its overseas investments largely without the “Western values” conditions,
such as safeguard policies with respect to environmental concerns, involuntary resettlement, indigenous people, pest management, human rights, ‘democracy’ or free trade approaches. Such ‘conditional’ policies are less attractive to many developing countries. The AIIB recently announced a strategic link-up with the Islamic Development Bank (ISDB); together with China’s Silk Road Fund they are capitalised at approximately US$300 billion; the World Bank is capitalised at around US$270 billion, with less than US$16 billion paid—in capital. Together with the Belt and Road Initiative, it seems only a matter of time before China’s international health programs will encroach on, and possibly topple, the house that Global Health built.

For now, the United States is still by far the largest global health funder in absolute amounts but the Trump Administration’s turn inward, and its proposals to slash spending on global health, is another crack in the foundation of the Global Health House. Look at what’s happening in several other OECD countries: the Netherlands no longer has a Ministry for Development Assistance; that field is now subservient to the country’s trade agenda; Canada, Denmark, Austria, France, Italy, and others have abolished or downgraded their aid agencies and reallocated their funding.

Capital movements from the private sector have been exploding, to the point at which they now dwarf external public-sector financing. In addition, countries are spending more of their own money on public health than they are receiving in foreign aid, and those investments will grow (see the 2015 Addis Summit). Financing from donors is becoming proportionately smaller and smaller. With economies in the traditional OECD countries shrinking in relative terms and global population approaching 8 billion people, it makes for a very different picture than that at the turn of the century (beyond 2050, the traditional global health core countries may account for less than 10% of world population, with 90% in the former South). The wealth of Bill Gates, Mark Zuckerberg and other billionaires may mitigate the trend for a while, they will prove no match for the geopolitical shifts under way.

What to do? We suggest a few approaches that may help sustain, and possibly expand, the global public good nature of many of the current global health commitments.

First, open the windows already. The OECD countries need to change from looking inward to actively pursuing a policy of strategic inclusion, one that drops their top-down, sometimes still neo-colonial subcultures and lets the emerging forces have real political influence and financial and technical contributions. The powers of the last century must realise that the world is no longer the same.

Second, give the current structure an efficiency makeover. Start by merging all the non-infectious disease agencies into one, whether they deal with control, research, innovation, surveillance, technical assistance, or implementation support. Put them all—GAVI, UNAIDS, RBM, TDR, CEPI, EDTCP, the Global Fund, UNICEF, FIND, IAVI and others—in one room and make them play together. Fundamentally redesign WHO and give it a room on the regulatory floor: let it provide the standards, norms and treaties, while others do the implementing. Then put all the financing girls and boys together in a new global health financing agency (e.g. merge the World Bank and the Regional Development Banks, with a new HQ in Asia or Africa) and build a door so their private-sector cousins can visit and coordinate on broader goals. And finally, establish a central living room where everyone in the global health family will have to convene and commit to delivering more than the sum of their individual activities as measured by standards of global public goods.

Third, do something big. After World War II, broad-based support coalesced around the need for a collective response to organize the global economy, eg, through the Bretton Woods agreements and the Marshall Plan, where economic thinking evolved to incorporate a market-oriented reform approach for developing countries. Global health needs to be similarly bold and creative now. The West and the East collectively need to find a new path to address global health challenges, incorporating a wider palette of underlying values, cultural constructs and economic models. Indeed, not to do so would be to relegate all of us to a lose-lose outcome. Failure to act by the traditional Western global health powers and at least start repositioning themselves geopolitically will likely render them increasingly obsolete and irrelevant by the end of the century.

We need something like a Bretton Woods Conference on Global Health in the 21st Century. This time, the convening architects would consist of old and new leaders, namely China, the European Union, Russia, Japan, India, the USA, as well as regional leadership from the Middle East, Africa and Latin America. Such a conference would explicitly recognise the new geopolitical power structures and hammer out fairer roles in leadership and decision-making.

The above may well be an illusion, of course. How do we know the new structures would do better than what we have now? Do we really think the banks and UN agencies will allow reducing their current power? Nevertheless, the business in our global health house is deeply changing, our global health funder in absolute amounts but the Trump Administration’s turn inward, and its proposals to slash spending on global health, is another crack in the foundation of the Global Health House. Look at what’s happening in several other OECD countries: the Netherlands no longer has a Ministry for Development Assistance; that field is now subservient to the country’s trade agenda; Canada, Denmark, Austria, France, Italy, and others have abolished or downgraded their aid agencies and reallocated their funding.

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Pandemic response: fear is inevitable, panic is optional

Chris Simms

Research shows that when bad things happen, rational thought and communication typically give way to the irrational; we seem hardwired to blame others and sometimes assign intentionality. When the 1918 influenza pandemic spread to a world at war, belligerent nations quickly blamed one another, citing squalid trenches, overcrowded medical camps, unhygienic troop transport and staging posts—factors that often applied as much to the accusers as the accused. At the local level, the enemy within was often blamed—spies, immigrants, migrant workers, or simply those identified by their otherness. 100 years later, has anything changed?

In reality, the overlay of many factors fuelled the 1918 pandemic, including its timing (with the war), the particular susceptibility of young adults (of soldiering age) to the virus, prolonged comingling at close quarters, damp germ-infested environments, and indeed, the arcing transport networks between continents and countries. Data maps and visualisations of the pandemic help show its multiple and interconnected pathways and how it circumnavigated the globe five times in 18 months, killing an estimated 50 million people.

In 1918, many countries responded to the pandemic by censoring news, the aim of which was to avoid demoralising the population in a time of war. Instead of adequate, transparent, and targeted communication with the public and the institution of health measures, government officials in many (but not all) cases denied or understated the pandemic and provided the public with false reassurances—repeated refrains being “there is no cause for alarm” or “fear kills more than the disease”. The disconnect between these messages and the sight, for example, of horse-drawn carts collecting corpses off city streets (the death in Philadelphia of 786 in one day and 12,000 in 6 weeks) was to transform an epidemic of fear into one of terror and panic. According to the Red Cross, it evoked images of the Black Death in the Middle Ages.

Three decades ago, Jonathan Mann described the HIV/AIDS crisis as consisting of two epidemics, the epidemic itself and reaction to it (the second of these being

Caring for influenza victims, 1919
characterised by the displacement of evidence and science-based communication by fear and blame). The 1918 influenza pandemic has lessons to offer on both “epidemics”, including (or especially) those where the epidemic is overstated or in some cases non-existent—ie, where the contagion is principally fear or panic. For instance, after an outbreak of “swine flu” in 1976 at Fort Dix, USA, the National Immunization Program was launched, aiming to vaccinate “every man woman and child” (according to the US President then running for re-election). The National Immunization Program was seen as being motivated by politics rather than science and not directed by “effective communication from scientifically qualified persons”—the result of which was to engulf the nation in fear. After 40 million Americans had been immunised, no cases discovered outside of Fort Dix, and only one death and 13 hospitalisations, the National Immunization Program was abandoned and declared a debacle.

In similar fashion, the Ebola pandemic (2014) caused panic across the globe. In the USA, public health officials found themselves confronting not a disease epidemic (it had only seen four cases and one death compared to more than 11,000 deaths in west Africa), but rather a fear contagion that led to hysteria. Parts of the US media’s reach outwards to cast blame (on African governments, health agencies, care providers, and even victims) simultaneously reached inwards to stoke fear. Again, risk and communication analysis shows that what was needed yet lacking was robust and “comprehensive, transparent and easy-to-understand information on risks and the current degree of scientific uncertainty”.

In between swine flu and Ebola was of course severe acute respiratory syndrome (SARS) in 2003, which caused a wave of irrational responses, fear spreading faster than the disease itself, devastating trade, travel, and tourism in a host of countries. It led to the development of the International Health Regulations (IHR), first tested by the H1N1 pandemic in 2009 that also led to panic and mass hysteria in many countries. Although WHO explicitly sought to avoid fear panic by taking measured responses, in some ways it fuelled anxiety. Evaluation of its response shows that it did not “acknowledge legitimate criticisms, such as inconsistent descriptions of the meaning of a pandemic”; after it declared a pandemic, a time when public awareness was particularly important, WHO “chose to diminish proactive communication with the media by discontinuing routine press conferences on the pandemic”. Other communication failures included confusion over what could happen with what was most likely to happen.

Over the last 100 years, the global community has been relatively fortunate: SARS for example was an “easy problem” to solve. Once clinical symptoms appear then there is ample time to isolate someone before they become infectious”. Similarly, H1N1 was relatively a mild virus. Today, however, a highly urbanised, globalised community is facing more frequent and more deadly viruses. For the Coalition for Epidemic Preparation Innovation (CEPI), backed by the US Centers for Disease Control and Prevention and the Bill and Melinda Gates Foundation, the worry is that viruses such as H7N9 will mutate to become transmissible from human to human. CEPI’s repeated warning is that we react and don’t plan. The most worrisome finding of the committee, in assessing the H1N1 response, was that the “world is ill prepared to respond to a severe influenza pandemic or to any similarly global, sustained and threatening public-health emergency”. Indeed, data visualisations of the “next” epidemic are truly concerning. Larry Brilliant’s observation that “outbreaks are inevitable, epidemics are optional” seems to apply both to pandemics and the social panic they spawned. There are rules and guidelines as to how to prepare for a pandemic and how to react and avoid panic: we ought to follow both as if our lives depended upon it.
Management of tuberculosis in pregnancy: 100 years later and we are still getting it wrong

Bern-Thomas Nyang’wa

“While some with a history of tuberculosis may risk maternity, these are the carefully chosen few, and for the many the old rule holds that the tuberculous woman should not marry, or if married should not become a mother.” So ran guidelines in 1922. Have pregnant women with tuberculosis seen a century of progress?

A study by Sugarman and colleagues estimated that the number of cases of active tuberculosis in pregnant women in 2011 was 216,500. Pregnant women with tuberculosis and their neonates have poor outcomes, including increased mortality. Yet despite the serious consequences of tuberculosis during pregnancy, WHO’s Global Tuberculosis Report 2017 only mentions the word ‘pregnant’ three times: two of these instances are in relation to the recommendations for shorter treatment regimens for multidrug-resistant (MDR) tuberculosis that exclude pregnant women; the third references the UN Sustainable Development Goals. The Sugarman study is remarkable, not only for its findings, but because there is a paucity of documentation available on the global burden of tuberculosis in pregnant women.

The social stigma associated with tuberculosis in women of childbearing age in most high-burden countries affects health-seeking behaviour and thus rates of early diagnosis and treatment. Testing of tuberculosis in pregnant women is not a part of routine antenatal services in many of these countries. The gains we have witnessed in HIV with the integration of voluntary counselling and testing during antenatal care and subsequent prevention of mother-to-child transmission programmes are conspicuously absent for tuberculosis.

MDR tuberculosis is a modern-day global epidemic that newly affected almost half a million people in 2016. Its management in pregnancy is complicated by immunological changes that predispose women to disease progression and because some of the second-line drugs used have teratogenic potential in the first trimester. MDR tuberculosis in pregnant women therefore causes higher maternal and infant mortality as a result of limited treatment options.

The last couple of years have seen the introduction of new drugs for the treatment of MDR tuberculosis—namely bedaquiline and delamanid. Yet WHO’s interim guidance for their use have limited information on the safety of these drugs in pregnant women. All anti-tuberculosis drugs except bedaquiline and rifapentine are in the US Food and Drug Administration’s pregnancy category C or D, meaning that animal studies have shown no risk to pregnant animals, but that no human studies have been done. The risk to pregnant women and their fetuses is therefore unknown. Unfortunately, as highlighted by McKenna and colleagues, TB-PRACTECAL and all other phase 3 and 4 treatment-shortening clinical trials for drug-resistant
tuberculosis exclude pregnant women and hence perpetuate the current state of affairs. Regulatory and clinical trial frameworks, designed to minimise the risks of drug development, do not address the necessary, albeit more difficult, questions: do the potential risks seen in animals also constitute a risk in human mothers and fetuses, are there alternative doses that can be used or other ways to mitigate the risk, and does the risk of treatment outweigh the risk of disease progression?

Leaving one of the most vulnerable groups out of the realm of possible use of life-saving drugs is not only unethical but also poses serious concerns for control efforts. As the world is searching for ‘leaders for a TB-free world’ this World TB Day, it is crucial that women and in particular pregnant women are not forgotten. We call upon WHO, and national and global health actors, to ensure that the burden of tuberculosis and MDR tuberculosis in pregnant women is quantified, outcomes documented, and interventions intensified.

This is a joint post with Animesh Sinha, a medical doctor and student of infectious diseases at the London School of Hygiene & Tropical Medicine who works to implement the TB-PRACTECAL clinical trial in Minsk, Belarus.
Bridging the gap between global policy and local practice of respectful maternity care

Irene de Vries and Joyce Browne

After a long time of insufficient attention, respectful maternity care (RMC) is finally a growing field of interest in global maternal health practices, discussions, and publications. Whilst practitioners, researchers, and policy makers aim to adapt and implement these guidelines to local contexts, in daily reality many women around the world still lack respectful care. In this blog we share how interdisciplinary discussions at a national level can lead to tangible recommendations for policy and practice.

Disrespectful maternity care is a barrier to accessing maternal health services, leading to an increased risk of complications and associated maternal and perinatal morbidity and mortality. Attempts to define what respectful maternity care (RMC) entails resulted in increased understanding of the concept—but a universal definition is lacking. Recently the perspective on RMC shifted from not being solely the absence of disrespect and abuse (also referred to as ‘obstetric violence’) to additionally include the provision of fundamental human rights, including the rights to information, privacy, dignity, equity, support, autonomy, and quality of care. Global public health leaders translated and integrated this into guidelines and recommendations for practice, but in daily reality many women around the world still lack this respectful care.

To raise awareness about the importance of RMC among a wide range of stakeholders and to bridge the gap between global policy and local practice, over 70 practitioners, policy makers, and researchers came together in Amsterdam in November 2017 to discuss RMC and construct practical recommendations. The meeting was an initiative of several Dutch stakeholders with an interest in global and maternal health and facilitated by Share-Net International. Contributions came from WHO’s Department of Reproductive Health and Research, the International Confederation of Midwives (ICM), and clinicians, researchers, and human rights activists from the Netherlands and the global south.

First, discussion about cultural diversity implicated the need for a clear definition of RMC. The recently published qualitative evidence synthesis that formulated...
12 domains and a new typology of RMC is a great asset to guide future discussions and research, as is the new WHO recommendations on intrapartum care for a positive childbirth experience.

Second, the disconnect between global recommendations and local practice needs to be tackled through local interventions that include policy makers, researchers, and practitioners. RMC needs to be incorporated into training of health-care providers; research by local providers should be encouraged to create more support for RMC and contextual evidence to promote and provide this effectively; grassroots organisations should be facilitated to develop and implement RMC tools in local settings; and interdisciplinary meetings should be organised to reflect on care provided and identify effective strategies to ensure RMC.

Third, attention for the position of health-care providers should not be overlooked. The social, cultural, and real-life context of health-care professionals should be recognised. If they feel respected themselves, they are more likely to behave respectfully to others. Special attention is needed to address (chronic) workload and stress, as this is a key factor in ‘compassion fatigue’ and disrespectful care. An every health-care professional should realise that individual and seemingly small contributions through friendliness, listening, respecting rights, and being a role model to others have an impact.

Finally, there was attention for crosscutting themes within RMC, including gender and weak health systems. Gender inequalities are a barrier to the implementation of respectful care. In many settings, the value of women’s lives is structurally diminished, resulting in disempowerment of women as recipients of care, low allocation of resources for maternal health, and undermining of midwives as advocates for RMC. This should be addressed as part of any solution.

Interdisciplinary discussions as in this meeting can lead to tangible outcomes and be a source of engagement at different levels. Policy makers get inspired by practitioners and researchers and vice versa. We believe this is a pivotal part to bridge the gap between global policy and local practice and get closer to ensuring women everywhere receive respectful care.

This is a joint post with Bianca Tolboom (Share Net International), Liselotte Kweekel (Royal Dutch Organisation of Midwives), and Jelle Stekelenburg (Gynaecologist-obstetrician and Professor International Aspects of Reproductive Health, in particular Safe Motherhood).

The authors wish to gratefully acknowledge the contributions of the Share-Net Respectful Maternity Care thematic meeting keynote speakers: Metin Gülmezoglu, Tarek Meguid, Franka Cadée, and Sally Pairman.
Highlights from the second MSF Paediatric Days, Dakar, December 2017

Sahar Nejat, with Laurent Hiffler, Daniel Martinez Garcia, and Ayesha Kadir

Overshadowed by the Rohingya exodus and the gruesome war in Yemen, where children are the primary victims of malnutrition, diphtheria, and deprived of a dignified life, the second edition of MSF (Médecins sans Frontières) Paediatric Days was held in Dakar, Senegal, on December 15–16, 2017. The MSF Paediatric Days is a 2-day conference dedicated to improving quality of medical care for children in humanitarian crises.

That children make up the primary victims of humanitarian crises is hardly unfamiliar to MSF, a medical NGO specialised in humanitarian emergencies. It is a fate that for some children will be fatal, often as a direct consequence of the adult world’s failure to deliver political solutions. Today, children under 18 years account for more than 60% of all inpatient admissions to MSF programmes.

Yet paediatrics in humanitarian contexts has historically been considered as part of general practice, and specific skills in paediatrics have not been required for paediatric fieldwork. Traditionally—and rightly so—the generalist approach has dominated humanitarian interventions to deliver timely access to general medical care to large populations in dire need. With the global advances in child survival and increased proportion of newborn deaths, a growing body of evidence on basic lifesaving measures for newborns and an increased awareness of a child rights perspective, it is time for humanitarian organisations to step up improvements in the quality of care for all children in humanitarian settings. Children should no longer be treated as small adults—not even in conflicts, natural disasters, or large population displacements.

Unsurprisingly, such a stance does not come without hassle for the humanitarian community, which is struggling with a gap in paediatric staff and tools. Many paediatric guidelines need to be translated and adapted from high-income settings to makeshift humanitarian conditions. All in all, there is an urgent need for low-cost innovative solutions aimed at improving the quality of paediatrics in the humanitarian setting.

The December edition of the Paediatric Days brought together over 200 participants from 53 countries, ranging from MSF field and operational staff, academic experts, and paediatric staff from other local NGOs. Furthermore, nearly 1800 participants followed the meeting through livestreaming and social media. The main topics were identified among a list of priorities set by MSF paediatric experts based on their urgency and degree of neglect in humanitarian contexts. Topics of 2017 included neonatal asphyxia, neurocritical care, pain management, and supportive care.
One recurrent theme was the importance of integrating maternal and newborn care. It builds on the idea that the newborn child and the mother are inseparable throughout a continuum of care, starting from before the delivery, during labour, and after delivery. This is by no means a new concept and has previously been advocated in the MSF Against the Odds report. Despite the advantageous outcomes that it would have for both mother and child, its scale-up has been limited. Operational actors expressed concerns about where to draw the line if newborn care automatically also meant maternal care, which in turn would imply demands for caesarean section capacity. Another challenge is that MSF operates in very diverse environments when it comes to geography, culture, levels of health system, and degree of security restrictions. One solution would be to develop minimum standards of integrated maternal and newborn care that can be adapted and expanded to fit the context according to level of care and resources available.

A number of approaches were suggested to improve quality of care and fill the gaps in paediatric skills in the field. For example, involving families and communities in paediatric care has been proven advantageous in field settings. This includes kangaroo mother care for low birthweight, and community care of newborns. Meghan Doherty presented lessons learned from implementing community-based palliative care in the Korail slum in Bangladesh. The participation of the community from the start of the project and at every step of implementation was instrumental in adapting it to the local context, overcoming challenges, and creating community ownership of the project, which facilitated making it sustainable.

Task-shifting was another recurrent discussion as a possible approach to expand the reach and quality of both neonatal and paediatric care. David Southall suggested using the model of task sharing, which doesn’t remove responsibility from one group and give it to another but rather entails sharing responsibilities in order to increase access to care. Last year, in Paediatric Days 2016, Zulfiqar Bhutta presented advantages of involving parents in hygiene control in a “mother-baby unit” in Karachi, Pakistan, which reduced the prevalence of nosocomial infections. However, an effective and safe task-shifting strategy demands that health workers and communities are provided with relevant and appropriate paediatric health information, tools, training, and support.

One of the innovations to address the shortage of paediatric as well as other specialised expertise in the field is the MSF telemedicine platform. It was introduced by MSF in 2010 and connects the isolated field medical staff to more than 500 medical specialists throughout the world for clinical management support. Daniel Martinez Garcia described cases of how the telemedicine platform had helped diagnose tricky skin lesions, and in one case saved a child with a fracture from a costly and hazardous referral when conservative management was sufficient. During the past 7 years, the platform has been used to refer over 3000 paediatric cases (median age 3 years) accounting for 56% of total referrals. Despite its ingenuity for humanitarian settings, the use of the telemedicine platform within MSF is still limited and there is plenty of room for harmonisation of different electronic support platforms and scale up.

Likewise, MSF eCARE was presented by Clotilde Rambaud as a promising app that offers a step-by-step electronic clinical guidance for the outpatient management of paediatric illness in children under the age of 5 years. The app helps health workers in remote health centres to make a more thorough and systematic paediatric consultation without prolonging the visit. It improves management in terms of accuracy of diagnosis, appropriateness of treatment, and prompt referral. The app has also shown to reduce unnecessary antibiotic prescription in field settings.

Another inspiring innovation was the discovery by paediatric registrar Neal Russell of the usefulness of a red bicycle LED light for transillumination of veins in infants for venipuncture. Neal came up with the idea as he prepared his bike before a night shift. He subsequently studied the effect of the lights and published the results. The idea of using bicycle lamps to illuminate veins not only demonstrates how simple low-cost ideas could make a great impact in the quality of paediatric field care but also exposes how the current cost of medical grade equipment is disproportionately inflated and hampers their use in humanitarian settings.

Discussions around pain relief for children exposed a neglected but pervasive problem that tends to be overshadowed by life-saving interventions during humanitarian crises. Nevertheless, there are a number of simple and effective measures for pain relief such as oral sucrose in infants, family integrated developmental care for premature newborns, and play therapy. These are all low-cost, feasible methods to effectively reduce and manage pain in children and procedure-related suffering.

Last but not least, participants seemed to agree that there remains a great need for advocacy to make paediatric medications and biomedical equipment more affordable and widely available to children in humanitarian crises. The high cost of intravenous levetiracetam and the widespread legal restrictions on the importation of level 3 pain medicines are just two examples of barriers to medications for humanitarian contexts that need to be addressed.

While much work remains to be done for humanitarian paediatrics, the annual gathering of paediatric humanitarian actors at the MSF Paediatric Days is the first step to harmonise agendas and consolidate efforts to change a long-standing paradigm of the generalist approach to humanitarian medical interventions. Innovations such as
the telemedicine platform are an example of an effective means of harnessing paediatric expertise that can improve the quality of humanitarian paediatric care—even when paediatricians are not physically present.

By the end of day 2, as the sun set over Dakar and the Atlantic ocean and minds of participants were sorting and grappling the main contents of the days there was a prevailing feeling that: humanitarian paediatrics is here to stay.

More information about Paediatric Days 2017 see https://paediatrics.msf.org/
Public-private partnership integrated health-care delivery: experience and lessons from Nepal

Ryan Schwarz and Prajwol Nepal

The UN Sustainable Development Goals (SDGs) include the achievement of universal health coverage (UHC) globally by 2030—an historic endorsement, yet one for which there is no clear path forward. As former Director General of WHO Margaret Chan said, “The challenge now before us is implementation”. Given limited capacity in many countries globally, further resources and innovation will be required to achieve UHC. There is significant debate regarding the utilisation of public versus private sectors for UHC delivery, with each having strengths and weaknesses, though increasingly it appears both will be required.

In parallel, over the last three decades, there has been increasing utilisation of public-private partnerships (PPP) in the health sector. Early PPPs in health care focused on product development partnerships, vertical disease programming, and global coordination mechanisms. However, there has been increasing experience of leveraging the PPP model for integrated health-care service delivery—implementation including both community-based and hospital-based services—in low-income and middle-income countries, including in Latin America and sub-Saharan Africa. While implementation has varied across contexts, these experiences demonstrate that the PPP model can be successful at providing integrated health-care delivery and expanding access to health care in low-income and middle-income countries, with quality, efficiency, and performance-based payment structures. In south Asia, there is growing interest in the PPP model of health-care delivery by governments, bilateral and multilateral agencies, and development banks; however, there remains an insufficient evidence base for the operationalisation of this model.

In Nepal, following the 2015 earthquakes, the Ministry of Health developed a new integrated health-care delivery PPP—the first of its type in Nepal’s health system. We describe here the implementation of this PPP with a focus on the lessons learned in operationalising the PPP model for integrated health-care delivery.

Context

Nepal’s 2015 Constitution guarantees the right to health care for all citizens, and the country has made significant improvements in health-care outcomes over the last 20 years, including significant improvements in maternal and child mortality. However, with Nepal’s public-sector health-care expenditures at $16 per capita, health-care delivery capacity remains limited in the government system. Dolakha district—a rural district in the north of
Nepal—was severely impacted by the 2015 earthquakes, with damage to 87% of houses, 96% of health-care facilities, and 83% of classrooms. In this context, in 2016 the Nepali Ministry of Health (MOH) and Nyaya Health Nepal (NHN)—a non-profit Nepali health-care company—developed a PPP to improve health-care services and access in Dolakha. Prior to development of this PPP, no similar contract had been implemented in Nepal’s health-care system.

**PPP implementation and results**

Charikot Hospital is a government district-level hospital in Dolakha. The Charikot Hospital PPP is structured with the MOH as a regulator of health-care provision, and NHN as the provider of health-care services (figure 1). Costs for infrastructure and service delivery are co-financed with a mix of government, bilateral and multilateral, and philanthropic investment; all services are free to patients at the point of care. The MOH retains ownership of all facilities which are leased to NHN, and risk is shared by both public and private entities; year-on-year government investment is increasing towards an aim of enhanced public sector financing (figure 2). Key performance indicators (KPIs) are reported by NHN routinely to the MOH and local stakeholders.

Prior to the 2015 earthquake, service delivery at Charikot Hospital was limited, including outpatient treatment, basic obstetrics, and limited laboratory and pharmacy services; no inpatient services were available. During the first 24 months of PPP management by NHN, health-care service delivery expanded to include full inpatient and surgical capacity, emergency obstetrics, expanded laboratory, radiology and pharmacy services, mental health care, and regional community health worker services (figure 3). Through the PPP, Charikot Hospital became only the second public-sector hospital in Nepal to be digitized with an electronic health record and digital inventory management system. Additionally, under PPP management, Charikot Hospital has implemented more robust staff management and accountability systems, improved supply chain and procurement processes, and a formal continuing medical education (CME) programme. Broadly, public-sector and private-sector actors, as well as local stakeholders, are enthusiastic about the achievements of the first 24 months, though all acknowledge that challenges remain.

Quantitative research is forthcoming examining the impact of PPP management on health-care quality, population-level impact, financial risk protection, and costs of the model relative to other local health-care service delivery.

**Lessons learned and challenges**

The Charikot Hospital PPP is unique in Nepal’s health sector as the first public-sector health-care facility managed by a private sector entity, and our experience may be instructive for future PPP development and implementation. We have here grouped lessons learned into three broad domains, including governance, financing, and implementation.

**Governance**

Planning. Prospective planning between public and private actors to structure and execute the PPP is critical. Processes for contracting, financing, and PPP implementation should be clearly stipulated and agreed upon, which requires allocation of staffing and time in advance of implementation. Within the public sector, actors at local, regional, and federal levels should be engaged in all planning processes from the outset and throughout implementation. This should include both planning for initial implementation of the

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**Table 1: Charikot Hospital PPP**

<table>
<thead>
<tr>
<th>Ministry of Health</th>
<th>Nyaya Health Nepal</th>
</tr>
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<tbody>
<tr>
<td>• Regulation</td>
<td>• Healthcare service delivery</td>
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<tr>
<td>• Ownership of facilities</td>
<td>• Staff management</td>
</tr>
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<td>• Co-financing</td>
<td>• KPI reporting</td>
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<tr>
<td>• personnel (in-kind)</td>
<td>• Co-financing</td>
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<td>• medications (in-kind)</td>
<td>• operating expenses</td>
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<td>• operating expenses</td>
<td>• capital expenses</td>
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**Figure 1: Charikot PPP structure**

**Figure 2: Financing of Charikot PPP as percentage of annual budget**

**Figure 3: Service delivery and expansion before and after PPP implementation**
PPPs, as well as expected strategic goals and progress each party is responsible for in the medium term. In our context, more prospective planning, across all stakeholders and their attendant responsibilities, may have foreseen and improved subsequent implementation challenges.

Capacity development in public sector. For such planning to be effective, capacity must be developed and sustained within the public sector. For settings like Nepal with limited prior PPP health-care experience, such capacity may not exist a priori and should be invested in. In Nepal’s context, these systems are presently being developed, including:

- capacity to manage PPPs, including contract structuring and execution;
- capacity to monitor performance and quality of service delivery (or arrangements to contract evaluation to an independent third-party entity); and
- financing from public budgets allocated to sustain these systems.

Consistency in actors. Sustained political will and relationship management is critical to development and sustaining of the PPP, and frequent changes in either public or private actors can put PPP execution at risk. In our context, given limited prior experience with PPP health care, and a concurrent transition in the government to a federalist system, this dynamic was even more pronounced.

PPP policy or legislative framework. To manage risk and accountability for public and private sectors, a formalised legal framework ensures clarity of responsibilities, maintains consistency in changing political environments, and guarantees performance and financing requirements. Additionally, by decreasing risk, formalisation can incentivise private sector actors to engage in PPPs. In Nepal’s context, further refinement of government policy and law regarding health-care PPPs may bolster future implementations.

Financing

Development of financing vehicles and payment mechanisms. Agreement of both the public financing vehicles and logistics of payment mechanisms should happen at time of contract negotiation. Establishing this prospectively guarantees budgetary allocations and avoids unexpected cash flow inconsistencies which can negatively impact service delivery. In the Nepali context, as this PPP is unique, payment vehicles and logistics are an ongoing challenge, although they are improving. Positively, the first federal health insurance programme is now being piloted, the National Health Insurance Act passed in 2017, and implementation of this PPP has offered additional insights to improve payment mechanisms.

Performance-based payments. To improve quality of service delivery, where possible PPP financing should be based, at least in part, upon performance including contractually-stipulated KPIs. While this PPP has mandated KPI reporting, financing is not yet performance-based. To improve future contracts, MOH can mandate achievement of such KPIs to receive ongoing public financing.

Implementation

Staff integration between public and private sectors. In the Charikot PPP, a portion of hospital staff are MOH employees, managed by NHN, and other staff are directly hired by NHN per their discretion. This model enables MOH and NHN to leverage the robust government employee base and provides an important component of government in-kind financing for the PPP. However, accountability structures for public-sector staff are limited, with hiring and termination authority, as well as incentives and payment structures, managed by the MOH. This structure has, in some instances, led to challenges with service delivery and PPP execution. Local and federal public-sector support and endorsement of the PPP has helped mitigate this dynamic, yet challenges remain. Broadly, there is limited evidence on optimal staffing strategies for PPP service delivery, and this is an area for future research both within Nepal and globally.

Organisational cultural change management. The integration of public-sector employees into a private-sector management strategy can be challenging. Prospective organizational culture orientation and change management strategies should be incorporated to optimize staff cohesion, performance, and satisfaction. In our own context, NHN did not adequately capacitate this which has led to ongoing challenges and perceived divisions between public-sector and private-sector staff. These divisions have been exacerbated by differences in staffing policies (eg, working hours, holidays, compensation), and further efforts are required to account for these dynamics moving forward. In future PPPs, these questions should be incorporated and addressed in contract negotiations.

Transparency between partners and with stakeholders. As a general principle of operations, and in particular given public financing for PPPs, transparency of contractual agreements, performance, and financing is critical. In our context, additional attention to this dynamic was required as the PPP was implemented. Further efforts to enhance transparency and stakeholder engagement have led to broader support for the PPP. In future PPPs, expectations and mechanisms should be stipulated in contractual agreements.
Education regarding PPP model for stakeholders. In markets with limited or no prior experience with PPPs in health care, public reaction to PPP “privatization” may vary, including potentially negative perceptions presenting challenges for service delivery and PPP success. In our context, as the Charikot PPP remains unique, there was confusion around the goals, motives, and responsibilities of both public-sector and private-sector actors. Additionally, local “competitors” whose businesses were impacted by development of the PPP offered resistance to implementation. Future PPPs should include early market analysis, identification of stakeholders, including media, and proactive engagement and education regarding the goals of the PPP to set all parties up for success.

Conclusion
Nepal’s 2015 Constitution has committed to UHC; however, current public-sector implementation capacity is insufficient to fulfil this guarantee. The Charikot Hospital PPP is unique within Nepal’s health-care system and offers early promising results suggesting that the PPP model can expand health-care service delivery and access, and offer a path forward in the pursuit of UHC. While further research is required to fully evaluate the model’s impact, quality of service delivery, and cost, the lessons learned from the Charikot experience offer actionable steps that may optimize future PPP implementations. Finally, with a global commitment to the SDGs and UHC, and a growing interest in leveraging the PPP model for integrated health-care delivery, these lessons may offer insight for other similar settings globally.
Process matters when it comes to implementing the SDGs

Maisam Najafizada

As countries work towards implementing the 2030 Agenda for Sustainable Development, they must monitor and evaluate not only the outcomes (ie, the targets and indicators), but also the processes through which these outcomes will be achieved. Of notable importance is the degree of inclusiveness of these processes.

Over the past 7 months, I have been following the implementation of the Sustainable Development Goals (SDGs) in Afghanistan as part of a regional study to understand country adoption of health-related SDGs in south Asia. Unfortunately, what I have found is that, despite strong government commitment towards achievement of the 2030 agenda, a narrow interpretation of the SDGs means that non-state stakeholders are being unintentionally excluded from the process, and that different sectors are being looked at in isolation.

Challenges with the SDGs in Afghanistan

In Afghanistan, the government has initiated a three-phase process that includes nationalisation, alignment, and implementation (also known as Afghanistan-SDG). The first phase, which is near completion, involves interpreting and redefining targets and indicators to suit the national context. In the alignment phase, which is in progress, the nationalised targets and indicators are being integrated into national development strategies and policies across all sectors. Finally, the implementation phase, which is planned to begin in 2018, focuses on monitoring and reporting on the indicators.

That the government has taken ownership of the SDG framework is explicitly mentioned in the voluntary national review, and is implicitly conspicuous in the process. The Minister’s Council is the steering committee of Afghanistan-SDG, ministries are interpreting and defining national indicators, and government budgetary bodies are being assigned to monitor and evaluate specific goals, targets, and indicators.

Unfortunately, the involvement of non-state institutions and actors, including civil society, policy and research organisations, academia, and the public has to date been somewhat symbolic. Consultative workshops and seminars with non-governmental organisations (NGOs) aimed at meaningful engagement appear to serve more as awareness-raising campaigns than forums intended to seek inputs and participation. At the same time, coverage of the SDGs in the Afghan media generally takes the form of one-sided information sharing, with very little debate taking place. As a result, a whole range of non-state actors is being left behind.

I believe one of the reasons for this exclusion is a narrow interpretation of the 2030 agenda for development. Despite the intersectoral and aspirational nature of the 2030 agenda, the Afghanistan-SDG process appears to be placing an emphasis on merely reporting on indicators, by sector. Under the current approach, interventions remain siloed by sector, and that approach is being replicated at...
provincial, district, and community levels. At the same time, decision-making is centralised, with the President required to approve local governance decisions, even at the district level. Even if Afghanistan meets its own set of nationalised SDG indicators, the narrow understanding of the global agenda means we will fail to achieve significant and comprehensive changes in the country. By its nature, the global agenda takes a holistic approach to sustainable development, recognising that “the challenges and commitments... are interrelated and call for integrated solutions. To address them effectively, a new approach is needed.” Something which the Afghan government appears to have failed to understand.

The way forward
Despite these challenges, all is not bleak. We are still in the early stages of SDG implementation and the government, along with its international donors, has a continuous opportunity to alter the process to achieve the desired outcomes. Here, policy, research, academic, and civil society institutions have a role to play, namely by becoming the glue that holds the process together.

To correct this course, the Afghan government must first ensure that the Afghanistan-SDG becomes a framework which, throughout every phase, embraces all stakeholders, including non-governmental organisations, civil society, policy and research institutions, academia, the media, and the public. Among other means, this can be achieved through the setting-up of all-inclusive Afghanistan-SDG committees, as well as through explicitly defining the roles and responsibilities of policy, research, and academic institutions in providing knowledge on best practices, policy options, and independent evaluation of SDGs processes.

From there, the government should revise the framework to move beyond the idea of reporting on indicators, to focusing on the means by which these indicators are being reached. Here, they should favour an intersectoral, whole-of-government approach to improving health, and build an inclusive and sustainable system that will allow us to achieve those indicators.

To support these efforts by the Afghan government, international donors should in turn provide sufficient technical and financial resources for the Afghanistan-SDG programme, as well as support capacity building for policy, research, academic, and civil society institutions to enable their participation in SDG implementation process.

The global agenda is not just about achieving the outcome, as important as it is. More importantly, it is about an inclusive process and comprehensive outcomes.
Global surgery and anaesthesia—expanding human capability

Sabrina Juran

As early as 1979, Amartya Sen’s capability approach emerged as the principal alternative to standard economic frameworks for poverty and inequality. By understanding people’s wellbeing as a primary end in itself instead of a means thereto, Sen places the individual human being at the centre of his comprehensive developmental framework. This framework stipulates important features that can be used when conceptualising global health. Here we explore how it could apply to global surgery and anaesthesia.

Sen argued that the principal goal of human development is the realisation of its potential through an expansion of substantive freedoms that allow for action and decision making, as well as capabilities that reflect the actual opportunities a person has. For Sen, the assessment of development needs to take human freedoms into account. These refer to political freedoms, economic facilities, social opportunities, transparency guarantees, and protective security, as outlined in his 1999 book Development as Freedom.

When it comes to global surgery and anaesthesia, and when evaluating social and developmental arrangements and change, Sen’s view of development, and his focus on the lives people live and have reason to value, allows for a deeper understanding of the need to redress inequalities in access to care. It is this inclusion of the process of expanding substantial freedoms that allows for the conceptualisation of surgical care as a factor of Sen’s development function.

The capability of living a healthy human life of normal length, not dying prematurely or before one’s life is so reduced as to be not worth living, reflects the actual social freedoms one has. With poverty being a constraint on substantial freedoms, such as poor health, limited economic opportunities, social deprivation, neglect of public facilities, limited access to health care, and in particular surgical care, represents a barrier to the individual enjoyment of freedom.

To achieve higher levels of development and reduce poverty, various restrictions (unfreedoms) and barriers to freedom that people suffer have to be removed. In Development as Freedom, Sen postulates that “unfreedom, in the form of extreme poverty, can make a person helpless prey in the violation of other kinds of freedom… and… can breed social unfreedom, just as social or political unfreedom can also foster economic unfreedom.”

Access to safe surgical care provides a necessary strategy to free oneself from these unfreedoms of economic,
political, social, and health development and to augment and diversify the actual freedoms a person can possess. The possibility to choose care as a freedom-enhancing strategy depends, however, on people's access to various forms of resources, including economic, human, social, cultural, and political capital, as well as the institutional context and geographic conditions within which it takes place.

The application of the capability approach within the field of global surgery also allows for a better assessment and stronger appraisal of surgery's inherent developmental features and the consequences for people's freedoms.

Global surgery is cross-cutting, transcending national boundaries, broaching sectors such as health care, education, and infrastructure, as well as development, poverty, and socioeconomic and cultural sensitisation of the population. Scholars suggest a full understanding of contemporary challenges regarding global surgery will not be achieved by relying on the tools of one discipline alone, or by focusing on a single level of analysis. The capability approach allows for the integration of different academic disciplines that address the issue of global surgery from medical, demographic, sociological, geographic, and economic perspectives.

Surgical care expands the economic, political, and social freedoms of patient, family, and community. By improving the wellbeing and living conditions of an individual, it provides ways to access and accumulate financial, human, and social resources over time. Access to safe, affordable surgical and anaesthesia care when needed saves lives, prevents disability, and promotes economic growth. Timely access to surgical care is essential to reduce death and disability from surgical conditions.

This is a joint post with John G Meara.
Recommitting to children in the 2018 global AIDS agenda

Charles Lyons

Each new year affords an excellent opportunity to reflect on the previous one. What did we get right, what did we get wrong, and how can we improve? For those of us working in paediatric HIV, these questions have clear answers. Yet translating those answers into actions is a task requiring immense political will and concrete commitments.

Throughout last year, the world was confronted with irrefutable evidence that children are a woefully neglected and underserved population in the fight against HIV/AIDS. A UNAIDS report released in July revealed that only 43% of the 2·1 million children living with HIV have access to the lifesaving antiretroviral drugs (ARVs) they need. We also learned that up to two-thirds of HIV-positive children younger than 2 years are diagnosed too late, making them exceptionally vulnerable to infections that prey on weakened immune systems. Missing diagnoses during these early years can be fatal: without treatment, up to 30% of HIV-infected children die by their first birthday and half will not live to see their second. 2017 also saw the release of worrisome regional data: in December, UNAIDS and UNICEF released a report on the state of the epidemic in west and central Africa. In this region, the paediatric treatment rate is only 21%; fewer than half of pregnant and breastfeeding women are on medication to prevent transmission of the virus to their babies and improve their own health; and the number of new HIV infections among adolescents aged 15–19 years has not budged since 2010.

These figures, unacceptable as they are on their own, are mirrored by unconscionable paediatric death rates globally. Children under 15 represented 12% of AIDS-related deaths in 2016, despite making up only 5·7% of the global HIV-positive population. For children and adolescents aged 10–19, progress is intolerably slow: since 2010, AIDS-related deaths in this cohort have been reduced by a mere 5%, compared to a one-third reduction among the total population of people living with HIV over the same period.

Given these circumstances, it is no surprise that UNICEF closed out the year by sounding the alarm. Without “accelerated action”, the organization warned, the global health community will not meet its own 2020 targets for reducing new infections among youth, or its goal of providing HIV treatment to 2·4 million children and adolescents. Similarly, UNAIDS stressed that infection and mortality will remain high in west and central Africa “unless the HIV response... improves dramatically.”

International leaders agree that the global response to paediatric HIV/AIDS is insufficient, and that there is a strategic and moral imperative to better serve infants, children, and adolescents. The coming year holds promise that this consensus will be more than just rhetorical and will result in tangible improvements in the state of the epidemic.

For example, last November, the Vatican convened a meeting on scaling up early diagnosis and paediatric treatment. Representatives from, among others, the US...
President’s Emergency Plan for AIDS Relief, UNAIDS, WHO, Caritas Internationalis, and my organization, the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF), adopted a comprehensive action plan including solid, actionable commitments for 2018. Among these were detailed pledges by pharmaceutical companies and the US Food and Drug Administration (FDA) to accelerate development of child-friendly ARV formulations. Several drug manufacturers also promised to make paediatric formulations available in low-income countries for the cost of production until generics become available. These commitments will make it far easier—and more affordable—to improve ARV coverage for children this year and beyond.

As 2018 continues to unfold, we have reason to be cautiously optimistic about not just treatment options, but also expanded early infant diagnosis, which both UNICEF and UNAIDS identify as a crucial prerequisite for starting and keeping children on treatment. At the International Conference on AIDS and STIs in Africa (ICASA), held in Abidjan in early December, EGPAF and Unitaid presented promising results from a project that has brought point-of-care early infant diagnosis (POC EID) technology to nine countries. Unlike conventional testing, POC EID testing allows samples to be tested quickly, often at the same facility where they are collected—meaning caregivers can receive results when and where they bring children in for care. Under conventional testing, the median turnaround time for test results is 55 days, whereas POC EID results are delivered within hours. When caregivers receive results quickly, they are more likely to start HIV-positive children on treatment: 91.8% of children diagnosed through POC EID started treatment, compared to 70.0% of children diagnosed through conventional testing.

While commitments by international agencies and non-governmental organizations are important, it is leaders in the countries most burdened by HIV/AIDS whose actions could turn the tide as the year continues. Last December, over a dozen African countries sent Ministry of Health delegates and civil society representatives to attend a meeting at ICASA to build consensus around approaches for optimizing paediatric HIV treatment. This dialogue emphasized the “AIDS Free” component of Start Free. Stay Free. AIDS Free—a super-fast-track framework for ending paediatric AIDS that sets ambitious prevention and treatment targets for children, adolescents, and young women. At ICASA, participants endorsed detailed strategies for incentivizing and accelerating development and uptake of age-appropriate ARV formulations, as well as guidance to support introduction of POC EID. And earlier this week, the African Union and the Organisation of African First Ladies Against HIV/AIDS launched the Free to Shine campaign, which prioritizes action in ending paediatric AIDS and keeping mothers alive and healthy. As cultural leaders and role models, first ladies are uniquely capable of influencing the public’s knowledge of, attitudes about, and behaviours regarding HIV/AIDS. Using this considerable authority for the benefit of children demonstrates a sincere commitment to getting the paediatric HIV/AIDS response back on track, and we look forward to continued action on their part.

Recent steps towards improving paediatric ARV access and treatment, scaling up early infant diagnosis, and amplifying Africa-based advocacy are encouraging. If global leaders follow through on these key initiatives, we soon could—and should—usher in the first AIDS-free generation. Yet if we fail to deliver the necessary resources and political will, we may be facing another year of bad news for children. Let us learn from 2017 and, as we look ahead, approach the paediatric HIV agenda before us with the urgency it deserves and the tenacity it requires.
Embracing global standards for community health care on Nepal’s path towards universal health coverage

Aradhana Thapa, Pushpa Chaudhary, and Ryan Schwarz

Nepal has made important strides in health-care access and quality over the past two decades, with dramatic improvements in maternal and child health. Now with an increased focus on quality and hard-to-reach populations, will the country be able to maintain its momentum towards UHC?

Key among the strategies employed by the Nepal Ministry of Health to achieve maternal and child health successes was the development of the Female Community Health Volunteer programme (FCHV) in 1988. The FCHV programme now includes over 50,000 volunteer community health workers throughout the country and has been lauded as an exemplary community health worker (CHW) programme globally. FCHV responsibilities include immunisation, vitamin A distribution, birth planning, and maternal and child health care.

While Nepal looks forward to the achievement of UHC, recent studies have highlighted challenges with the FCHV programme and recommended strategies to continue similar successes in health care in the future. Understanding best practices from CHW programmes in similar settings globally may offer additional insights into the future needs of the country’s community-based health-care system.

Globally, there are many examples of CHW models, though presently no standardised guidelines exist for accepted best practices. To address this gap, organisations implementing CHW programmes from around the world, including the non-profit health-care company Possible working in Nepal, collaborated to identify best practices from their own experience in optimising CHW programmes. The recently released report by these organisations, Practitioner Expertise to Optimize Community Health Systems, offers detailed operational insights on key aspects of CHW programmatic management and implementation, highlighting practices that have been successful across multiple settings globally.

These recommendations offer important insights for Nepal’s community health-care system. The report recommends that CHWs are most effective and impactful if they are:

In 2015 the signing of the new Nepali constitution enshrined the right to health care for all citizens, and with the passage of the recent National Health Insurance Act in 2017, there is important energy and opportunity to achieve universal health coverage (UHC), as committed to by the Sustainable Development Goals.
• **Accredited.** CHWs should be assessed and meet minimum standards prior to service delivery;
• **Accessible.** CHWs should have no point-of-care user fees to ensure optimal accessibility and timeliness, as well as equity of care;
• **Proactive.** To improve disease surveillance and access to care, CHWs should pursue proactive case detection, regularly going door-to-door to identify patients in need of health-care services;
• **Continuously trained.** CHWs should receive training prior to deployment, as well as be provided and required to undergo ongoing continued training during their professional service;
• **Supported by a dedicated supervisor.** CHWs should be assessed and coached one-on-one by a dedicated supervisor on a frequent, and routine basis;
• **Paid.** CHWs should be compensated financially for their work at a rate competitive with the local market;
• **Part of a strong health-care system.** CHW deployment should be in parallel to investment in increased capacity, accessibility, and quality primary care facilities and health-care providers who CHWs are linked to;
• **Part of data feedback loops.** CHWs should report all data to public-sector monitoring and evaluation systems, which should also be used for quality assurance, and quality improvement for CHW skills and performance.

The FCHV programme has had great successes, but as this report highlights by examining programs globally, CHW services can be further improved by incorporating multiple attributes that the FCHV programme presently does not include.

Currently, a CHW pilot study led by author Pushpa Chaudhary, funded by USAID, and implemented by non-profit health-care company Possible, is incorporating many of these practices. This pilot was designed with attention to the present challenges of the FCHV programme. The CHW model employs local women who are fully-salaried, managed via a robust supervisory system, includes both pre- and in-service training, monitoring via smartphone-based data collection systems which inform patient outcomes and quality improvement, and is integrated into the local health-care system by working closely with public-sector health-care facilities. Outcome data from this pilot are forthcoming, although as this report highlights, similar techniques in multiple settings globally have been successful, and there is reason to be optimistic such a programme could offer significant improvements in health for millions of individuals across Nepal.

Nepal has a strong commitment to UHC, and an excellent track record of important gains in health care for which the FCHV programme has been critical. The experience and recommendations highlighted in this report, from multiple experiences globally, provide great insights to improve the country’s community-based health-care system and continue to drive its momentum to achieve the country’s commitment.
Lessons from interactions between public health and the food and drinks industry

Modi Mwatsama and Erica Di Ruggiero

Next week, the WHO Executive Board will discuss a draft tool to support countries engaging with the corporate sector on nutrition programmes. This latest effort follows several calls for public health actors to interact with the food and drinks industry to address non-communicable diseases (NCDs). An estimated 70% of all deaths worldwide are attributable to NCDs and the burden is rising rapidly. Three-quarters of these deaths—31 million—occur in low-income and middle-income countries (LMICs) each year. Corporate actors, including companies that manufacture unhealthy and ultra-processed food and drink products, are increasingly heeded as part of the solution. They engage in many and various ways with public health actors in shaping policies and programmes to address diet-related NCDs. Yet the terms of this engagement have received surprisingly limited attention, with a dearth of studies examining experiences of such interactions to identify transferable lessons.

The UK Health Forum’s new Casebook, Public health and the food and drinks industry: the governance and ethics of interaction, looks at 12 experiences of these types of public-private interactions from diverse countries such as Fiji, Brazil, and Spain. The cases focus on the ethical and governance challenges of interactions with corporate actors that manufacture unhealthy and ultra-processed food and drink products, and identify lessons for research, policy, and practice. A commonly raised concern is the extent to which conflicts of interest arise in the development of NCD-related policy when these actors are involved, and the inadequacy of governance and management mechanisms to mitigate them. For example, one of the cases reflects on how the alcohol industry in Spain promoted self-regulation and high profile partnerships with the government as a strategy to curb efforts to increase alcohol regulations.

The need for this Casebook emerged during a 2015 workshop—Improving governance for better health: strengthening the governance of diet and nutrition partnerships for the prevention of chronic diseases—held at the Rockefeller Foundation Bellagio Conference Centre, Italy. It complements an Oxford Bibliography review of the evidence of public-private partnerships on NCDs.

The engagement of corporate actors to address diet-related NCDs is often seen as overwhelmingly positive, absent of a critical consideration of risks. There is little monitoring, documentation, or mitigation of potential risks. The cases underscore that few public health actors—policy makers, researchers, and non-governmental organisations—have the tools, skills, and resources to identify and mitigate the potential pitfalls of engaging with corporate actors. This was evident at the national and

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The UK Health Forum’s new Casebook, Public health and the food and drinks industry: the governance and ethics of interaction, looks at 12 experiences of these types of public-private interactions from diverse countries such as Fiji, Brazil, and Spain. The cases focus on the ethical and governance challenges of interactions with corporate actors that manufacture unhealthy and ultra-processed food and drink products, and identify lessons for research, policy, and practice. A commonly raised concern is the extent to which conflicts of interest arise in the development of NCD-related policy when these actors are involved, and the inadequacy of governance and management mechanisms to mitigate them. For example, one of the cases reflects on how the alcohol industry in Spain promoted self-regulation and high profile partnerships with the government as a strategy to curb efforts to increase alcohol regulations.

The need for this Casebook emerged during a 2015 workshop—Improving governance for better health: strengthening the governance of diet and nutrition partnerships for the prevention of chronic diseases—held at the Rockefeller Foundation Bellagio Conference Centre, Italy. It complements an Oxford Bibliography review of the evidence of public-private partnerships on NCDs.

The engagement of corporate actors to address diet-related NCDs is often seen as overwhelmingly positive, absent of a critical consideration of risks. There is little monitoring, documentation, or mitigation of potential risks. The cases underscore that few public health actors—policy makers, researchers, and non-governmental organisations—have the tools, skills, and resources to identify and mitigate the potential pitfalls of engaging with corporate actors. This was evident at the national and
global level. In addition, four commentaries discuss how the findings compare with the experiences of actors working at the global and regional levels.

While contextually diverse, the Casebook offers some key lessons for public health actors. These include:

**Raise awareness**
- Raise awareness of the commercially-driven actions taken by corporate actors in influencing NCD prevention research, policy, and practice.

**Redress actor imbalances**
- Establish mechanisms to ensure the participation of civil society groups and other public interest actors in policy-making, to provide appropriate balance to the abundance of commercial interests. This is particularly important in LMICs but remains relevant in high-income countries.
- Differentiate between different private sector interests—eg, how small producers of healthy, minimally processed food differ from the multinational manufacturers of unhealthy and ultra-processed products.
- Clarify who is compatible with representing the private sector in nutrition policy-making.

**Strengthen governance**
- Develop risk assessment and management tools to support governments, civil society organisations, and research institutions in developing effective nutrition policies.
- Adopt robust institutional ethical procedures and governance structures to ensure that interactions between corporate and public health actors are open, transparent, accountable, and free of conflicts in order to protect the public interest. Examples of what this might look like are available.
- Review and revise the global health and development partnership paradigm and mechanisms to address the commercial determinants of health in line with emerging evidence.

**Implement monitoring and research**
- Enhance our global monitoring and understanding of the commercial determinants of health within the context of diet-related NCDs.
- Review and monitor public health governance mechanisms for public-private interactions to ensure that all actors are held to account and meet the planned objectives. This should include research to assess any unintended consequences arising from these interactions.

In summary, the Casebook provides a unique contribution to the global health discourse on the types of interactions that take place between public health actors and the commercial sector in the prevention of NCDs. We hope it will raise further awareness and support action on strengthening governance to avoid or mitigate conflicts of interests in different country contexts. In the longer-term, this could include strengthening WHO’s framework on engagement with non-state actors so as to be more explicit about the drawbacks of interacting with the unhealthy food and alcohol industries, as it is for the tobacco and arms industries.

Additional contributions to the authorship of this blog were made by: Zee Leung, International Development Research Centre; Greg Hallen, International Development Research Centre; Jeff Collin, University of Edinburgh; and Rima Afifi, American University of Beirut and University of Iowa.
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As part of an effort to conceptualize a new, needs-driven global biomedical R&D system, Universities Allied for Essential Medicines (UAEM) conducted an extensive study in 2015 which developed into the Alt:ReRoute Mapping Report, a review of 81 somewhat alternative and needs-driven biomedical R&D initiatives led by different groups around the world. The goal of the report was to identify genuinely alternative R&D models that promote innovation for the public good. UAEM has now gone a step further, using the data from the written report to create an interactive data visualization tool on the mapping website, showing how universities are interacting with these alternative initiatives. The online tool breaks down a range of successful alternative R&D initiatives by various criteria including type of initiative, type of partnership, and overall university commitment to access to medicines.

It is estimated that half of all US biomedical R&D has a university component funded by taxpayers, giving universities a special responsibility to research and discover new treatments for the public good. Universities can and already are playing a transformative role in driving alternative mechanisms which incorporate different criteria, like openness and collaboration. One such mechanism is the Collaborative Drug Discovery (CCD) initiative, a cloud-based tool allowing neglected disease researchers to collaborate and share their drug discovery data online. UAEM has created the data visualization tool so that students, faculty, and policymakers can more easily engage with the data and potentially inspire further collaboration or implementation in their own spheres of influence.

As part of his departing legacy, then UN Secretary General, Ban Ki-Moon, convened a High-Level Panel on Access to Medicines (UNHLP) to address urgent questions on innovation and access to health technologies. The official panel report was released in September 2016 and included a set of global recommendations to improve access to medicines worldwide. The measures included increasing TRIPS flexibilities, making publicly-funded research available to the public, and creating new models for incentivizing biomedical R&D that focus on access to health for all. The report referenced UAEM’s aforementioned Alt:ReRoute Mapping Report to show that alternative
mechanisms currently exist and work to bring together the private, public, and philanthropic sectors to fill market gaps in biomedical innovation.

Like the UNHLP Report, the UAEM data visualization tool highlights the success of certain initiatives and explores them in more detail. One such initiative is the Drugs for Neglected Diseases initiative (DNDi), which uses a collaborative and virtual R&D model to bring together partners to strengthen research and build new research capacities in disease-endemic countries. Since 2006, the initiative has delivered more than six treatments for neglected diseases and is now launching R&D projects to develop affordable treatments for hepatitis C and mycetoma. Given that a course of the current hepatitis C treatment is priced at over $84000 in the USA, despite being available at a discounted price in other countries, this initiative will play a vital role in making treatment more affordable to all people living with hepatitis C.

UAEM’s interactive tool explores universities’ participation in such initiatives as well as their own initiatives. For example, McGill University’s Montreal Neurological Institute recently received a $20 million donation to create an Open Science Institute. The Institute aims to make the findings of its neuroscience research public, with the goal of accelerating innovation and the discovery of novel treatments for neurological diseases. The data visualization also shows university efforts to license to organizations that ensure affordable access to the fruits of their R&D. For example, Johns Hopkins University recently signed a licensing agreement with the Medicines Patent Pool (MPP) to develop sutezolid, a promising candidate treatment for tuberculosis (see The Lancet Global Health Blog’s coverage here). The MPP creates partnerships and uses patent pooling to accelerate the development of treatments for use in low- to middle-income countries.

As a starting point for visualizing a new needs-driven biomedical R&D system, universities can and must be a part of the solution to the current market failures that deny people access to life-saving medicines. UAEM’s tool is intended to help bring university students, faculty, and stakeholders around the table to discuss how they can collectively be a part of the solution.

UAEM also produces university report cards on global equity in biomedical research, ranking universities across countries and regions based on their performance in innovation, access, empowerment, and transparency. The most recent iteration, the Canadian University Report Card, was released in September 2017 and ranks the top 15 Canadian research universities in the four aforementioned areas.
The challenges faced by scientific journals in developing countries

Shiva Raj Mishra and Dinesh Neupane

How to build scientific research capacity in developing countries is a question floated frequently in the scientific domain. There is substantial discussion held, proposals presented and ideas tabled, yet despite all that, one crucial pillar of scientific growth—the academic journals of these developing countries—is losing its foothold. And, it’s not a good sign.

The boom in scientific publications has been beneficial for large publishers in the West to expand their reach, leveraging the emerging markets of Asia and Africa for growth and expansion. However, some local journals with a long history of being affiliated to local academic and medical institutions are suffering a catastrophe, as their country’s researchers seek publication elsewhere.

The volume of papers published in local journals in developing countries such as Nepal has dwindled over the past decades. Only few scientific journals in Nepal have been indexed in PubMed since 2009. In addition, only a few of those indexed journals are publishing regularly. Due to numerous challenges, once flourishing journals like the Journal of Nepal Health Research Council and the Kathmandu University Medical Journal have published less than four issues per year over the past few years. On the other hand, the number of publications focusing on Nepal are on an increasing trend (figure 1), with the majority published in international journals.

Our personal experience has been that the impact factor race which lures scholars to get better impact for their papers has outcompeted home country journals that are either not rated or have a low impact factor. Similarly, international journals published from developed countries publish more frequently, are listed in databases, and have fast peer review processes. Adding to that, local research institutions and universities prefer international journals and give more credit to them for publishing over local and national journals.

In the majority of cases, researchers’ preference of journal is dependent on the quality of a journal which they often infer from its indexing status in key databases. Warlick and Vaughan write that researchers give preference to publication quality, while free access and visibility are specifically noted incentives for selection of open access journals.

Local research has local importance and is valued locally. Local journals can influence policy and practice because of their higher local readership than many international journals with their restricted scope and coverage. Despite the lack of precedent for this from developing countries, one well-documented observation of Canadian journals states that local journals in Canada disseminated more research findings of national interest and were more often referred to than their international counterparts. Articles from the
Erdit platform (a Canadian publication platform) were downloaded five times more often than their international equivalents. Another study from Brazil showed that, for general areas of interest, the overall H-indexes (i.e., a measure of authors’ productivity and citation impact) in local journals were comparable to those in international journals. This suggests that the current practice of choosing international journals as a vehicle for disclosure of scientific information of local interest is not necessarily advantageous. Further, many international journals may not be easily accessible due to poor internet connections and the need for paid subscriptions.

Encouraging the publication of research of local interest in international journals creates negative incentives on academic publishing in two ways. Firstly, international journals are more likely to publish issues of global/international interest, reducing the incentives for local researchers to do research that addresses local practice. Secondly, international journals are very restrictive on the scope they publish and have a high rejection rate. As a consequence of this, authors may fall prey to predatory publishers, in a rush to report their work.

There are certain requirements for indexing which maintain the quality of journals and constantly nudge the journal editors to try and improve this quality. For instance, Pubmed/MEDLINE requires journals to follow stringent criteria in peer review, editing, and publishing. However, due to a lack in technical know-how, many journal editors are not positioned to improve their digital outlook or move away from email to electronic submission, which would increase efficiency, save time, and improve journal layout, making it more attractive to the scientific audience. This is another challenge. The International Committee of Medical Journal Editors (ICMJE) and World Association of Medical Editors (WAME) should play a role in capacity enhancement of developing countries’ editors and reviewers. A collaboration between the International Network for the Availability of Scientific Publications (INASP) and developing country libraries and journals led to the creation of the JOL (journal online) platform that is helping local journals metamorphose in Asia, Africa, and Latin America. Such platforms can give greater visibility and reach to local as well as international audiences. Bringing indigenous knowledge and ideas to the scientific domain can thus be sped up. Furthermore, it is advantageous for developing country researchers to learn skills in editing and reviewing, helping old and newcomers to embrace scholarly practice.

Journals from developing countries are the source of indigenous knowledge. They need comprehensive support, including both technical and financial, to have a good editorial team, vigorous peer review, and indexing in popular databases for wider dissemination. It is also important to understand the dynamics of authors and peer reviewers in developing countries and the challenges and constraints under which they work.
Risks and opportunities as funding for polio disappears with the disease

Laura Kerr and Leila Stennett

As 2017 draws to an end, the world is on the cusp of both stopping the transmission of poliomyelitis and eradicating polioviruses. After smallpox, this would be the second disease to have been eradicated. The end of polio is an opportunity—one that cannot be missed—to build on the legacy of disease eradication, apply the knowledge and resources gained to other infectious diseases, and strengthen routine immunisation.

Progress towards polio eradication to date has relied on a three-decade campaign led by the Global Polio Eradication Initiative (GPEI), one of the world’s largest global health partnerships, which combines the efforts of national governments, multilateral agencies, and private philanthropic support. Once the GPEI achieves its mandate to eradicate polio, it will cease to exist. With eradication expected by 2020 or 2021, the GPEI has already begun its wind down process, and with current funding it will only be able to operate to 2020.

Widespread vaccination campaigns have achieved outstanding results in reducing polio cases. At the same time, global immunisation rates have stalled, barely changing in the last eight years. One in ten children still receives no vaccines at all. Full immunisation rates are also dismal—only 7% of children in the world’s 68 poorest countries receive all recommended vaccines, leaving far too many children unimmunised against preventable diseases.

The dissolution of a partnership the size of GPEI is unprecedented. GPEI investments have supported polio vaccinations, trained and supported human resources, as well as provided technical programmatic support. These investments have had an impact well beyond polio eradication in many countries, supporting routine immunisation systems and allowing for other health services to be delivered. The risk now is that when GPEI activities come to a close, these services will also be affected, leaving significant gaps, especially for existing essential immunisation services. A telling example is that 70% of global vaccine-preventable surveillance funding comes from GPEI.

The impact of GPEI’s activities tapering off will be felt most acutely in the 16 GPEI priority countries that receive 95% of current funding. One of these is South Sudan, where in the middle of a civil war the population has very little access to essential health services. GPEI funding is supporting polio campaigns that reach an impressive
80% of the population but 60% of staff are also trained in routine immunisation and funding and partner support is being used across the full immunisation programme. GPEI-funded personnel spend only about 27% of work time on polio eradication and the rest on delivering other essential health services, including maternal and child nutrition, and responding to humanitarian emergencies. With more than a 75% reduction in GPEI funding between 2017 and 2019, in addition to a 50% reduction between 2016–2017, the country has little scope to replace the resources from GPEI with domestic sources, putting the entire vaccination system at risk.

In all 16 priority countries, three main barriers increase the risks posed by GPEI winding down: existing immunisation and health systems are fragile; there will be pressures from simultaneous GPEI and Gavi transitions (which will occur for half these countries by the early 2020s); and shifting the focus from vertical disease eradication efforts to a routine immunisation system approach will bring great challenges.

The risks are therefore high. If the impact is not urgently analysed and understood by countries, development partners and donors, and the barriers underlying this process acknowledged and addressed, polio and immunisation systems will be disrupted. Crucially, a mismanaged transition could mean:

• Polio could return—continued vaccinations up to 2030 are required to ensure polio eradication is sustained.

• The benefits for polio and vaccination systems from the $US 15 billion invested in the GPEI could be lost.

• Resources for WHO and national health systems could decline, undermining national health goals and the Sustainable Development Goals.

An unsuccessful and mismanaged transition will not only put past investments at risk but also increase the likelihood that the barriers mentioned above will not be overcome, and that the opportunity to strengthen routine immunisation will be missed. For these risks to be averted, potential gaps in health programs must be comprehensively analysed, the challenges identified must be addressed promptly, and transition plans costed, funded, and implemented—all before current financial assistance from GPEI ends.

As such, planning for the post-GPEI era must be a political priority in 2018. RESULTS International Australia and RESULTS UK are calling for a high-level meeting next May on the sidelines of the World Health Assembly 2018 to put this issue at the forefront of global health policy. Bringing a wider array of immunisation and health stakeholders into the conversation about GPEI wind down is critical. This meeting should involve heads of all GPEI partner organisations, leadership from Gavi and the World Bank, Heads of State from the 16 priority countries, leading bilateral donors to polio and immunisation efforts, and civil society.

If current barriers and challenges are left unaddressed, the wind down of GPEI could have serious ramifications for immunisation programs and global health security well beyond GPEI’s 16 priority countries. We must ensure that at this final juncture, this process does not undermine all the good work that has been done towards polio eradication.
Facing NTDs requires both WASH and health perspectives

Liang Qu

Improving water, sanitation, and hygiene (WASH), is essential to combating multiple neglected tropical diseases (NTDs). This single area of intervention can have impacts beyond health-related outcomes, stretching as far as economic productivity and school attendance. In addition, access to WASH can reduce the substantial burden on already stretched health systems and break the vicious cycle of poverty and disease.

Globally, it is estimated that more than a billion people are affected by NTDs. In addition, one-third of the world’s population does not have access to adequate sanitation, and over a billion people still practice open defecation. Poor hygiene and sanitation practices can lead to the transmission and development of NTDs, from soil-transmitted helminthiases to water-borne schistosomiasis. Efforts to combat the long list of diseases with a combined tremendous burden must involve improving access to WASH—one of the five key strategies for reducing NTDs outlined in the WHO NTDs roadmap.

On November 23, the International Society for Neglected Tropical Diseases (ISNTD) Water 2017 meeting reiterated the importance of investing in WASH for facing NTDs. The meeting highlighted the huge potential benefits attainable through WASH innovations and interventions. Every dollar invested in water and sanitation has been estimated to result in a return of more than five dollars in health alone. However, WASH interventions must be done effectively, and the meeting served to remind us of the challenges faced. In particular, there is room for better integration of efforts between WASH and health sectors.

Every programme must refer back to the upstream causes of the disease’s impact. Public health engineers need to account for the transmission routes or the various phases of a parasite’s life cycle, where applicable. In the case of human schistosomiasis—a disease that can result in severe health issues affecting the urinary and the gastrointestinal systems—the Schistosoma species transition through various stages in their life cycles, including being free-swimming in water reservoirs, to being transmitted by various aquatic (Biomphalaria, Bulinus) and amphibious (Oncomelania) snail species. Interventions therefore need to bear in mind these specific life cycle phases. This exact trap was observed in the 1980s, when a dam was constructed at Diama, Senegal, in the Senegal River Basin. The sudden addition of a new water reservoir led to a surge in S mansoni prevalence, as well as the development of a new S haematobium focus. Freshwater snails also multiplied, leading to greater transmission of the parasite. Overall, this failure to collaborate with the parasitology community resulted in an outbreak of human schistosomiasis.

Interventions should also not neglect the importance of community education and initiating behavioural...
change. Reducing water contact for tackling schistosomiasis requires a deeper understanding of the reasons why the community affected engages in water contact. From performing domestic duties (washing), to hygiene requirements (bathing) to occupation (rice farming), or even recreation (swimming)—each of these areas must be addressed to ensure each person understands the risks of contaminated water exposure. To take another disease as an example of misunderstood requirements, leprosy—a disease that affects the skin and immune system—requires far greater thought for programme implementation beyond the construction of medical care and WASH facilities. Exploring the deeper cultural effects that result from leprosy infections is essential. In the northeastern Myanmar state of Shan, infected individuals are marginalised and even expelled from the village community, meaning that there would be no access to clean washing facilities, even if they were constructed with these individuals in mind. Educating the community is vital to ensuring disease prevalence is reduced, along with disability and medication use, while time for productivity and children’s education is increased. Achieving behavioural change goes beyond constructing fresh water sources or new hygiene facilities; the key is through clear communication and thorough mutual understanding.

Health professionals involved with NTDs can similarly be aided by the broadening of perspectives from WASH sector colleagues. So often there is a focus on the linear framework of diagnosing and treating disease, that attention is focused purely on aspects such as mass drug administration, as an effort to curb the growing prevalence of a NTD. However, far greater heights can be achieved through understanding the role that WASH innovations have in addressing underlying sanitation problems like as faecal contamination of water sources.

It is easy to dismiss WASH interventions as being outdated and lacking innovation, due to their stable and seemingly slow-growing presence since the 1980s. Quiet and steady innovations have embraced the advances of technology and led to novel ideas that can have effects that spread beyond just its impacts on health. Container-based systems have been developed that are portable and ideal for sanitation in high-density/low-income settings. These systems cover the entire service chain, from containment to emptying, collection of waste, transportation of waste, waste treatment, as well as waste disposal. The embrace of mobile technology has led to mobile phone apps that can efficiently track borehole servicing and maintenance, as part of an initiative for the provision of clean water. Microwave technology has also been utilised for safely processing and disposing of faecal sludge, in a self-contained system. These examples highlight how better health can be achieved through original solutions that have been developed for addressing the conditions that enable NTDs to persist.

Looking beyond the technological advancements, there can even be social benefits when WASH interventions are implemented in a sustainable manner. The move away from providing ‘handouts’ and empowering local communities through production packs and education, has resulted in longer lasting and more impactful solutions. The support for local manufacturing has been completed for sanitary and hygiene products such as composting toilets, sanitary towels, soaps, as well as shoes (made from waste tyres). Programmes that encourage products to be manufactured locally, enable the communities to engage in a sustainable enterprise that can benefit both their health, as well as their economy. In addition, these solutions benefit from maximising the ability to add value as close to the consumers as possible; build local capacity through training and resources; attain local ownership of the project; and are able to gain direct feedback from the users locally. Supporting local enterprises therefore ensure communities gain greater control over their own health, as well as improvements in productivity.

Challenges do however exist in the implementation of WASH interventions. A general awareness of the limitations of these programmes reminds us of the need to continue improving our methods for tackling NTDs. For example, newly constructed pit latrines have been found to be incorrectly utilised. In Uganda, pit latrines—which are meant to be covered, and new ones built after they are filled—are instead commonly emptied for reuse through manual labour, as there is often little space for new latrines to be dug. In addition, truck access for machine-operated emptying of these filled latrines is not possible due to poor road infrastructure and limited access to these sites. There is a need for better sustainability through alternatives to pit latrines, as well as stronger infrastructure development to enable improved transportation of waste. The difficulty for achieving these long-term goals is further compounded by the short-term tenure of governments who place these interventions low on their list of priorities. Neglect on a systemic level leads to slow-moving improvements in water, sanitation, and hygiene, affecting health, as well as social aspects of communities.

There is a requirement for mutual understanding between the WASH and health sectors. Greater integration will ensure that interventions are implemented with a disease in focus, as well as allow health professionals to better encourage the behavioural changes that can benefit not only health, but the productivity of the community as well. A holistic and collaborative approach is essential if we are to bring about significant improvement to the burden of NTDs.
The precarity of being indigenous: the case of Canada

Chris Simms

Canadian Prime Minister Justin Trudeau’s September 21 speech to the UN General Assembly focused on “Canada’s shame” in dealing with First Nations, Metis, and Inuit populations. Although his address drew global attention, it would have resonated in particular with the 370 million Indigenous people around the world.

Trudeau cited the intergenerational health impact on Indigenous people of residential schools, child removals, and failure to provide basic services, describing their experience as being “mostly one of humiliation, neglect and abuse”. Indeed, the record bears him out; for example, a recent scoping review of 61 studies shows increased rates of chronic and infectious disease among school “survivors” as well as depression, anxiety, addictive behaviour, stress, and suicidal behaviour.

Trudeau was contrite and adamant that he was addressing these injustices, yet the speech itself and ensuing federal decisions in the weeks following had the opposite effect, stoking the distrust felt by Indigenous people towards government.

For example, 15 days after the speech, the Canadian Government announced that it would compensate the approximately 16 000–20 000 survivors of the so-called “sixties scoop”—the programme by which children were forcibly taken from their families and placed in non-Indigenous care (in “white homes”) as far away Scotland, New Zealand, California, and Alabama (1965–1984). The finding of the Ontario Superior Court—which formed the rationale for the settlement—was that Canada had breached its “duty of care” and ignored the damaging psychological effects of the programme. Although the Government lauded the compensation package (Cdn$800 million), in reality it had fought survivors’ claims “tooth and nail” in a bitter 8-year court battle. Justice Murray Sinclair, who headed up the Truth and Reconciliation Commission on residential school abuse, said it was “unconscionable” for the Government to acknowledge the genocidal aspects of the removals but then claim in court that “it had no legal obligation to prevent it”.

Another decision announced in October was by the Supreme Court of Canada (SCC) which concerned the records of 38 000 survivors of the Indian Residential Schools—narratives which described their physical, sexual, and emotional abuse. The Government had sought to retain control of these records. In a unanimous decision, the SCC sided with the survivors, stating that Indigenous people should decide the fate of the records; it said that sharing the stories was meant to be a “private process” and
claimants had relied on the "confidentiality assurance». According to Judges Brown and Rowe, Ottawa retaining control "is plainly not what the parties bargained for". Reneging on this agreement with school survivors (who as children, the Government put in harm’s way in the first place) evoked long-standing resentment of school survivors against Ottawa which has over the decades repeatedly sought to hide, control, or destroy residential school records through the bureaucracies, courts, or law enforcement agencies.

Trudeau’s UN address itself raised questions of trust. His claim that the Government was a “full supporter” of the UN Declaration on the Rights of Indigenous Peoples was inconsistent with his Minister of Justice’s stated view that it is an unworkable document and his own failure to adopt and implement the Declaration. He also claimed to have prioritized social inequalities of First Nations children when in fact he has ignored the findings of the Canadian Human Rights Tribunal that Ottawa was discriminating against indigenous children by underfunding their health care. Recent documents reveal that Ottawa had the data that showed indigenous “children faced a massive gap in health services compared with what was available provincially”. Rather than following the Tribunal’s recommendations, the Government chose instead to respond through the courts, once again initiating an acrimonious legal battle.

In reality, Trudeau’s UN speech is widely seen as part of a larger agenda to secure a seat on the UN Security Council. Using one agenda to advance another may suggest lack of sincerity and lack of commitment. However, in describing the needs of Canada’s First Nations, Metis, and Inuit populations he evoked the UN’s Sustainable Development Goals (6, 4, 5, and 11—safe water and sanitation, education, gender equality, and sustainable communities). Trudeau will need to deliver on his promises. Early in his mandate he claimed that he inherited the distrust Indigenous people feel towards Ottawa from previous governments, yet the past months suggest that his Government earned some of this distrust itself. Taking effective steps to deliver on his promises may help address the precarity of being Indigenous in Canada and the view that federal authorities typically say one thing and mean another.
Time to consider police brutality as a global health problem?

Adrienne Milner and Giuliano Russo

Police brutality continues to receive public attention in the media as well as in academic forums. Recent news headlines include images of Spanish riot police dragging along peaceful Catalan referendum demonstrators, American football players kneeling during the US national anthem to protest police killings of African American citizens, and thousands of Rohingya Muslims fleeing to Bangladesh to avoid police violence and ethnic cleansing in Myanmar. Incidences of excessive police force are occurring with increased frequency in low- and middle-income settings, and scholars have drawn awareness to police brutality in countries like Egypt and the Philippines. Because of its significant public health implications and geographical spread, it is becoming evident that an argument should be made for police brutality to be framed as a global health issue, so that supranational policy responses can be drafted, and international players become involved in the search for solutions.

Police brutality has been framed in the past as a civil and human rights issue, and explained in terms of its sociological roots and legal implications. However, similarly to other human rights (eg, reproductive rights), substantial health repercussions arise from its perpetration for individuals as well as for the general public, and recent research in the USA has firmly established police brutality as a public health concern. In addition to the obvious link between police violence with fatality and injury (see panel), empirical evidence has shown harmful mental health consequences that are not limited to victims, but also shared by witnesses to negative police encounters. Apart from premature death and bodily harm, documented health consequences in the USA of negative police interactions include high blood pressure, diabetes, asthma, HIV and sexually transmitted infections, as well as anxiety and post-traumatic stress disorder.

Despite the broad-reaching health implications, the global public health community has yet to recognise police brutality as a global health issue; both public commentary and academic research on police brutality has been country-specific and framed as a localised rather than global phenomenon. This previous lack of global focus may be attributed to the complex causes of police brutality which very often are linked to geographic location as well as specific nations’ divergent social, economic, and legal and criminal justice systems. However, it must be acknowledged that, even though police brutality is caused by a number of circumstantial factors, this in reality is rooted in power differences relative to socially constructed
hierarchies such as socioeconomic status, race, ethnicity, gender, sexual orientation, political party, and religion, with the most vulnerable populations in a given society at the greatest risk. Such disparities are observed in each and every country, with no exceptions. There are common ways in which police brutality is experienced globally, and these commonalities can be utilised to both frame and combat police brutality as a global phenomenon. Violence perpetrated by the police in any context is linked to negative physical and mental health consequences as well as societal fear and mistrust.

What would be the benefits of considering police brutality as a global health issue? There is precedent showing that framing an issue in terms of its global health relevance has facilitated its conceptualisation and identified paths towards solutions. Recognising the right to health as a basic human right enabled governments worldwide to adopt the universal health coverage paradigm. Framing illegal drugs as a global health problem helped define a comprehensive international approach and policy agenda, moving forward the debate from prohibition to regulation. As argued elsewhere, better theories and data can help bring to the forefront an issue too often dismissed and driven underground as a matter of individual national governance.

If police brutality were recognised as a global health issue, it would be possible to go beyond the narrow circumstances of each specific case to address its global determinants and outcomes. International-level data could be collected that enables both a better conceptualisation and measurement of the problem. This would result in the ability to define worldwide policies to combat the public health consequences of police brutality, and to establish health programmes to support its victims. Recognising police brutality as a global health issue would enable the development of international standards to which offending governments would be accountable, upheld by supranational organisations in the interest of the global, common health interest. The health consequences of police brutality are too serious and too common worldwide to hang the potential solutions in the balance, in essence relying on the good will of its very perpetrators to deal with them.

Panel: The facts about police brutality’s health consequences

- In 2016–2017, people were killed by the police or the army for peacefully standing up for human rights in 22 countries
- In 2017 in the USA, the Washington Post reported that 748 people lost their life at the hands of the police, 309 of them of African American ethnic background; the economic costs of police brutality estimated to round £1.8 billion per year
- South-Africa’s Independent Police Investigative Directorate in 2016 reported 366 civilian deaths as a result of police action, 216 in police custody, 145 cases of torture, and 31 cases of rape
- In the run-up to the 2016 Olympics, there were 920 killings by the police in Rio de Janeiro, Brazil—an increase of 103% from the previous year
- In the Philippines, hundreds of children have been killed in 2016–2017, and over 200 000 civilians displaced as a result of the government’s ‘war on drugs’
- Médecins Sans Frontières reported that following the Boko Haram conflict the north of Nigeria, tens of thousands of internally displaced people were held in camps by the Nigerian military; thousands of people have died there due to severe malnutrition
Women Leaders in Global Health: perspectives from emerging leaders

Tanvi Jayaraman

For those aspiring to leadership, last month’s inaugural Women Leaders in Global Health (WLGH) conference was an opportunity to meet with pioneering senior women in global health leadership roles. Among the more than 400 leaders at the conference, there were at least 200 early- to mid-career women in attendance, as well as 62 delegates who came from low- and middle-income countries and from underserved areas of other nations.

Held at Stanford University, CA, USA, on October 12, the WLGH conference was established as an avenue for women to obtain the opportunity to better understand the issues relating to women in global health leadership, develop leadership skills applicable to health, expand networks, and identify suitable mentors. The conference allowed us to see role models succeeding at doing what everyone is eager to accomplish in their own fields, with the ultimate aim of improving the health of our communities.

The conference directly confronted issues of gender within the field of global health, including unequal access to economic security, threats to bodily autonomy, and violence in the home. We heard from successful academics, health practitioners, policy makers, advocates, writers, and more. With experiences ranging from refugee camps to slums, from under-resourced hospitals to boardrooms, these women had been remarkably resilient throughout their careers.

As part of the WLGH Leadership Workshop, conducted in partnership with Stanford’s Graduate School of Business and Michelle R Clayman Institute for Gender Research, we engaged in a full day of skills-based leadership training with 55 other emerging and established women leaders. We learned that it is essential to identify gender bias and make efforts to mitigate it at our places of work by vouching for the accomplishments, skills, and contributions of other women, and that building effective networks enables us to have greater impact. Finding a role model and mentor can empower and sustain us. We saw how the body language of power and negotiation strategies can expand our influence in the workplace. Recognising that isolation may limit our confidence and effectiveness, we each committed to building a stronger community of women in our respective fields and communities.

Throughout the event, organisers encouraged and facilitated networking and mentorship between delegates.
Established leaders were not only accessible, but also easily approachable to share stories of their experiences and provide sound advice for advancing the careers of the attendees. Those of us fortunate enough to have effective mentors and influencers in our personal and professional lives have experienced how these mentors have not only counselled us, but have led by example. The willingness of mentors to guide and share their experiences over decades creates the opportunity for us to learn and be better able to overcome the obstacles we face.

The opportunity to embrace networks, become exposed to new perspectives, and search for new mentors and potential partnerships was invaluable to those not only wishing to pursue roles in global health leadership, but also for established leaders. To all involved, building effective networks enables greater impact.

As the WLGH conference concluded, we left empowered and invigorated, confident in not only taking charge of our own futures as global health leaders, but also in nurturing and guiding the next generation, despite the many social norms that make women feel utterly powerless. Our role as leaders in global health is to open the door to other women leaders: to pull up more chairs at the table for women to be involved.

This is a joint post with Ama Pokuaa Fenny, Institute of Statistical, Social and Economic Research, University of Ghana; Annette Bongiwe Moyo, University of Zimbabwe College of Health Sciences; Anita Raj, University of California San Diego Center on Gender Equity and Health; Dhekra Annuzaili, Imperial College London; and Mariam Parwaiz, New Zealand College of Public Health Medicine. We thank Michele Barry, Jerome Kassirer, Katherine Burke, and Rachel Leslie for their commentary and encouragement.
A model for integrated action: IAEA, UNICEF and WHO collaborate to tackle the double burden of malnutrition

Cornelia Loechl

The UN’s Sustainable Development Goals and Decade of Action on Nutrition clearly and urgently call on the global community to address and end all forms of malnutrition—undernutrition, overweight, obesity, and diet-related non-communicable diseases. No country or region is immune from this rising double burden of malnutrition, and not only do multiple forms now coexist in many countries—they often coexist in the same household, or even in the same individual. This double burden of malnutrition is associated with significant personal, societal, and economic costs.

Efforts are building to address malnutrition worldwide as part of the Decade of Action on Nutrition, yet responses to date have largely occurred in silos, with limited coordination or communication between actors working across the spectrum of the double burden of malnutrition.

In order to address this and spur greater, integrated approaches to end both undernutrition and obesity, October 2017 saw a pioneering 3-day joint workshop co-hosted by the International Atomic Energy Agency (IAEA), UNICEF, and WHO. This meeting further characterized and examined the double burden of malnutrition with a focus on double-duty actions. More than 40 participants attended from all regions, representing scientific, multilateral, governmental, academic, and civil society sectors. The outcomes included: an exchange of the latest evidence regarding all forms of malnutrition and their interlinkages, identification of research and policy gaps to be addressed, and sharing of best practice as well as successful case studies.

A core focus of the meeting was improving collaboration between nutrition policy stakeholders, to place the double burden of malnutrition on research, policy, and practice agendas. It was a shared view of the meeting that the multisectoral nutrition community should endeavour to work together to improve understanding of the common factors that lie behind the double burden of malnutrition. In addition, it should facilitate a dialogue to bring nutrition to the forefront of health and social policy and strategy development. Improving understanding of the shared drivers of the double burden of malnutrition is crucial; this encompasses biological mechanisms, socioeconomic status, and food environments. In addition, attention needs to be paid to less understood aspects such as exposure to environmental hazards and socioecological factors. Civil society has a critical role in fostering of political will and capacity to reframe current policies and interventions, including through the vital role it plays in ensuring policy accountability for tackling malnutrition.
A second theme of the meeting was the need to reframe nutrition interventions to address the double burden. Double-duty actions need not be an additional burden for governments, and existing resources and structures can be augmented and capacities built to address the double burden in an efficient and cost effective manner. A core component of this will be an expansion of metrics used in the evaluation of malnutrition interventions to ensure that we adequately assess their impact across the entire malnutrition spectrum. As such, interventions should not only be measured by singular endpoints, such as their ability to influence a total reduction in obesity. In addition, they should also be assessed on their influence on intermediate outcomes, such as changes in diet and/or improvements in nutrition practices. Evaluations of nutrition interventions should also strive to reflect outcomes across the entire malnutrition spectrum so as not to miss important and even unintended health impacts. For instance, randomized controlled designs, although strong, are not always appropriate, but rigorous evaluation strategies embracing the complexity of double-duty actions will help us to understand if, why, and how nutrition plans are effective. Such an approach would also improve the understanding of the pathways of impact of such interventions. In addition, stable isotope techniques should be considered to provide accurate evidence to enable design and evaluation of interventions, especially those related to infants and young child feeding in the first 1000 days, assessing metabolic changes related to the double burden of malnutrition, and evaluation of diet quality.

The third major theme involved the need for comprehensive and coherent policy, encompassing nutrition, food systems, environments, and urbanization. For the challenge of policy coherence to be overcome, nutrition-specific policies must support action on all forms of malnutrition, and be complemented by nutrition-sensitive policies across the sectors that govern the food supply and broader determinants of nutrition. This could involve reorienting policies to create incentives for the production and consumption of healthy diets, access to sanitation, and sustainable urbanization. It will require strategic engagement with sectors such as agriculture, trade, and education, as well as consideration of the existing policy environment and political context in these sectors. Forming win-win alliances with the informal sector and retailers as gatekeepers of what people eat and do will be beneficial.

Building on the foundations of this inaugural meeting, the IAEA will organize an interdisciplinary and multilevel conference in Vienna in late 2018, in cooperation with WHO and UNICEF. This will bring together over 300 leaders, scientists, experts in the field, and representatives from government bodies and international organizations, working alongside civil society actors, to address knowledge and research gaps and discuss innovative and contextually-relevant double-duty actions.

Through this expanding collaboration, IAEA will continue to further strengthen measurement tools to inform evidence for biological mechanisms through the use of accurate nuclear and isotopic techniques. UNICEF will continue its efforts influencing food systems to deliver healthy, affordable, and sustainable diets for all children, leaving no-one behind. The WHO will continue its role in co-convening the Decade of Action on Nutrition, while also incorporating the outcomes of this tri-agency collaboration into its ongoing work with The Lancet and other partners, developing a journal series on the double burden of malnutrition, due in 2018.

If the global double burden of malnutrition is to be comprehensively addressed, it is imperative that this model of multi-sectoral, collaborative working becomes the norm for international action.

This is a joint post with Simon Barquera (National Institute of Public Health, Cuernavaca, Mexico); Anne-Marie Thow (University of Sydney, Sydney, Australia); Jennifer Orgle (CARE, Atlanta, GA, USA); Victor Aguayo (UNICEF, New York, NY, USA); and Francesco Branca (WHO, Geneva, Switzerland). The authors alone are responsible for any views expressed in this publication and they do not necessarily represent the decisions or policies of any third party.

The sixth paragraph and the affiliations of the coauthors were corrected on December 4, 2017.
Innovative point-of-care diagnostic testing solutions emerge as a response to AMR

Liang Qu

Antimicrobial resistance (AMR) is a health-care issue of utmost importance. News headlines have heralded an ‘antibiotic apocalypse’, ‘a greater threat than cancer by 2050’, and one that could ‘thrust medicine back into the Dark Ages’. Amidst the global landscape of revising health-care practice guidelines, educating patients, combating antimicrobial use in the food-producing animal industry, and continuing research into new and alternative options for antimicrobials, an innovative space has gained sizeable momentum—the pursuit of rapid point-of-care diagnostic tests.

The battle against ‘superbugs’ has forced health-care professionals to better equip themselves with stricter and wiser use of available antimicrobials. Ineffective or incorrect use of antibiotics for common infections can contribute to the mounting selective pressure for bacteria that progressively become resistant towards our drug inventory. The challenge, however, is being able to determine when these scenarios occur.

Some widely used diagnostic methods for infections possess appalling sensitivity rates. In the case of urinary tract infections (UTIs), the commonly used urine dipstick test has been reported to be able to detect an infection in as few as 30% of cases. Beyond that, the process of completing a laboratory microscopy, culture, and sensitivity test for a urine sample can take days to complete and report back to the treating clinician. Prior to confirming the causative pathogen in the lab, the patient could be receiving the wrong antibiotic, or not receiving any antibiotic at all.

Poor diagnostic accuracy can also lead to antibiotic overprescription for upper respiratory tract infections (URTIs). Although most frequently caused by viral pathogens, URTIs have been the greatest source of antibiotic prescribing. In rural western China, 70% of patients who attend primary care clinics with colds are inappropriately prescribed antibiotics. Being able to distinguish bacterial from viral illnesses would be needed to reduce the unnecessary administration of antibiotics and the growing issue of AMR.

Better rapid point-of-care tests are therefore essential for identifying bacterial species so that the correct antibiotic can be used, for distinguishing between viral and bacterial infections, and in spotting bacteria that are already resistant to first-line drugs.

In 2014, the then UK prime Minister David Cameron announced the Longitude Prize, which aims to encourage research teams around the world to design innovative solutions to point-of-care diagnostic testing to address the
problems arising from AMR. The teams will compete for a total of 5 years, and a £10 million prize, with a final winning team being announced in 2019. The solutions are required to satisfy multiple criteria including a strict rule that the test needs to be rapid and produce a result within 30 min. The tests must also be adequately sensitive and specific (through rigorous experimental testing), affordable (cheap to manufacture, with great thought needed regarding materials used and the manufacturing process), easy to use and interpret (a simple, self-contained test with perhaps a visible colour change being the ideal design), scalable for large-scale implementation, and safe to use.

In alignment with the growing momentum of World Antibiotic Awareness Week (November 13–19), the organizers of the Longitude Prize hosted the event ‘Superbugs and the role of diagnostics’ on November 14, 2017, to continue to inspire and celebrate the progress of the competition. There were presentations from a range of speakers, each describing how AMR had shaped their lives, followed by teams of innovators showcasing some of the brilliant solutions they were developing for the prize.

A team based in India presented a work-in-progress: a credit-card-sized device that was able to rapidly identify any of the four commonest UTI causative organisms from a small sample of urine. The aim was to identify polymicrobial infections, so that antibiotic therapy can be tailored towards all responsible causative microorganisms. The team designed their tests with the fast-paced Indian health-care setting in mind, where diagnosing infections and choosing the appropriate antibiotic would require rapid decision-making.

Another team discussed a device utilizing DNA hybridization to identify resistance genes in bacteria that reflect antimicrobial susceptibility. Thus far, they have employed this technology to identify the presence of methicillin resistance in Staphylococcus aureus, one of the high-priority antimicrobial resistant bacteria known to cause trouble in health-care settings globally. The team relayed how their design could then be applied to other more troublesome drug-resistant bacteria, including the carbapenem-resistant Enterobacteriaceae, a group that can result in serious chest infections and fatal sepsis if there is delay in administering the right antibiotics.

A third competitor based in Israel presented a different portable solution for identifying antimicrobial susceptibility. This was achieved through the novel method of directly monitoring bacterial growth through light reflection, using a silicon micro-pillar array, in the presence of the various antibiotics commonly used. So far, the team were able to apply antimicrobial susceptibility testing to Escherichia coli bacteria, with the aim to widen its uses throughout a range of commonly faced bacterial pathogens. The primary challenge they had faced up until now was the issue of achieving rapidity—there was a sigh of disappointment as the team admitted that their test required 2–3 hours to return a result.
The three contrasting ideas highlighted the vast possibilities for potential technologies that point-of-care tests may be based on: bacterial identification, genetic testing for antibiotic resistance, and direct susceptibility testing through antibiotic exposure. The teams were driven and passionate in the ways they presented their projects. They frankly discussed the challenges they faced in the designs, and briefly mused at the prospects of utilizing their respective tests for broader applications. These ranged from including their use in other infections, to indicating resistance in other microorganisms, and their ability to be adaptable in scenarios ranging from the hospital environment to in-the-field settings.

There was a vast amount of detail and consideration made by each team to ensure that these solutions will be able to achieve the required objectives. There was no doubt that significant amounts of effort had already been put in by each of the teams, and much more was required to see their projects through to the end. From liaising with clinicians and patients, to scientists and engineers, to those involved in marketing and finances—collaboration was evident on a wide scale. Meticulous planning since the beginning of this competition had led them all to progress with ideas that are now well on track for being one day applied to real-life scenarios.

The development of rapid point-of-care diagnostic tests is a novel avenue of involving a diverse range of disciplines, in curbing the increasing problems created by AMR. It is because of this desperate need for solutions, that there is such dedication and hard work displayed by these teams that are vying for a coveted prize that celebrates ingenuity and practicality.
The one-way mirror of global health training

Stephen Mehanni

Think back to your training opportunities. Did you have a hands-on experience in another country? If so, no matter your discipline, chances are you came from a wealthy country to learn or practice in a poorer country. Global health partnerships make these experiences possible. They can be a force for good by leveraging resources from places of privilege and power. But at their core, global health partnerships are rooted in, and perpetuated by, the structural inequalities that define our world.

Johanna Crane eloquently describes the paradox of these training opportunities, in her exploration of partnerships between USA and African institutions. When we are not mindful of global inequalities, we can clumsily wield these partnerships in ways that harm patients, undermine national health systems, and perpetuate exploitative relationships.

My first foray into ‘global health’ started from the privileged perch of my US medical school. I spent one month working unsupervised and unregistered in a clinic with a Tibetan Buddhist community in Karnataka, India. In retrospect, I cannot identify a single element of lasting value I contributed to the community, and I was likely to have caused harm by practising beyond my scope. Yet my gains were tremendous: a broadened world view, spiritual insights, a recognition of the value we can add by joining in partnership with traditional healers. Timothy Holtz, in his book *A Doctor in Little Lhasa*, would have described this as a typical example of how volunteers ‘treat themselves’, without offering sustained and mutual benefit to the intended communities. A more recent term for this phenomenon is ‘medical voluntourism’. My story is typical of the contemporary global health experience, characterized by a one-way flow of opportunity and benefits. My life and career course have both been shaped by this extractive experience.

Since medical school, I have worked alongside committed physicians, health assistants, nurses, and pharmacists in low-income countries. I’ve met people who dedicate their time, their energy, and their lives to their work. I’ve met people who struggle with burnout, struggle to feel they are making an impact, and struggle to keep sight of the bigger picture. Claire Wendland tackles these issues beautifully in *A Heart for the Work*, detailing the perspectives of Malawian medical students who, working alongside international volunteers, faced constant reinforcement that they were not practising ‘real medicine’.
We obtusely wonder why people in poorer countries don’t see the world from ‘our’ point of view. We create opportunities to ensure people from wealthier countries can broaden their perspectives: one in three matriculating US medical students had volunteered internationally according to a 2016 Association of American Medical Colleges survey. Yet we don’t find it important to do the same for our colleagues and friends in poorer countries. We enter with the mindset: ‘I’ll broaden my perspective for the both of us’.

It doesn’t work that way.

Perspectives don’t broaden by passive diffusion. Ideas aren’t exchanged through a one-way mirror.

When considering reciprocity in global health training, the technical and logistical barriers come quickly to mind: visas, licensing, credentialling, funding sources, translation services, food, and lodging. These barriers are overcome for those of us travelling from wealthy countries all the time. Administrative teams make tremendous efforts to streamline the workflow, because the value of these opportunities is recognized. On the other side, just 2 months ago a Nepali colleague was forced to decline a scholarship for a 6-month leadership training programme in the USA—her visa was denied.

It is possible to begin the process of breaking down our one-way mirror; of truly facilitating the open exchange not just of ideas, but of perspectives and experiences. In our recent publication, we used an equity lens to frame the global health landscape, and explored a partnership between the Nepal-based non-profit health-care organization Possible, and the US-based global health equity fellowship, University of California San Francisco’s (UCSF) HEAL Initiative.

The HEAL Initiative partners with domestic and international clinical sites to move towards the ideal of reciprocity. I, as a US-based rotating fellow, receive an opportunity to learn, share, and broaden my perspective at clinical sites like Bayalpata Hospital in Nepal, and Gallup Indian Medical Center in New Mexico. In exchange, a site fellow is nominated from each partner site to receive intensive global health training in the USA, structured mentorship, and the opportunity for fully sponsored enrolment into a master’s degree programme. Structural, financial, and logistical barriers are overcome through dedicated administrative teams. This work is done not out of altruism, but out of the recognition for the tremendous value created when learning happens in both directions.

Despite the small steps this partnership has taken towards actualizing reciprocity, much work remains. Site fellows do not receive UCSF benefits like health or evacuation insurance. Logistical barriers like visas and funding are not always overcome. International site fellows cannot see patients at US-based sites to hone clinical skills. The requirement of English proficiency limits the talent pool at partner sites like Muso in Mali, Zanmi Lasante in Haiti, and Compañeros En Salud in Mexico.

This is not an isolated example of reciprocity in training opportunities. Cuba, known for its international health collaboration, was asked in 2008 to assist several Pacific Island countries. In addition to sending its own health professionals, it sponsored hundreds of individuals to receive medical training in Cuba. The Latin American School of Medicine, also in Cuba, provides free medical training to students from low-income communities around the world, with the intention that they return to serve vulnerable communities in their home countries.

Moving forward, it is important for us to reaffirm the importance of equity and reciprocity in building global health partnerships. These are not high-minded ideals. They are foundational principles for collaboration and growth which, if actualized, will lead to tremendous gains.

So, what can you do? If you volunteer abroad, learn more deeply about the full implications of your work. Judith Lasker’s book, Hoping to Help: The Promise and Pitfalls of Global Health Volunteering, is a good place to start. If you are involved in a global health partnership or training programme, familiarize yourself with the ethics and best practices detailed in the WEIGHT Guidelines. If you influence funding, realize our values are expressed through our budgets. Funds should be earmarked to reciprocity programmes any time US trainees are sent abroad. In short, we can do much to improve our approach to global health partnerships and training. But when is this not true?
‘Super Special Moms’: Grassroots, social media support group aids the response to congenital Zika syndrome

Kathryn Lovero and Claudete Araújo Cardoso

Social media is an integral mode of modern communication and has grown to be widely used in support of public health and health services. A WHO survey from 2016 reported that many individuals use social media to learn about health issues, and that health care organizations use social media to share health messages with the public in nearly 80% of responding Member States. Beyond sharing health information, however, we are really just starting to recognize the many ways that social media can support health services.

Since the beginning of the Brazilian Zika virus outbreak in 2015—with an accompanied subsequent increase in the number of microcephaly cases that same year—health-care officials and providers have worked to untangle the relationship between Zika virus infection and a variety of neurological deficits. The sequelae are now collectively referred to as congenital Zika syndrome (CZS), and there is a focus to rapidly develop protocol to identify and treat affected children. At the same time, the Brazilian population has struggled to deal with the ambiguous risk factors for CZS and the unknown prognosis for CZS-affected children. In particular, this uncertainty has caused fear and confusion in pregnant women, as well as anxiety, guilt, isolation, and depression in mothers of CZS-affected children.

In April 2016, we opened a clinic at the Hospital Universitário Antônio Pedro of Universidade Federal Fluminense (Niterói, Brazil) for CZS-affected children to be attended to by a multidisciplinary medical team, including: paediatricians, infectious disease physicians, neurologists, ophthalmologists, orthopaedists, cardiologists, radiologists, and otorhinolaryngologists. After a few months of seeing each other in the waiting room of this clinic, the mothers of CZS-affected children formed a group in the mobile social messaging application WhatsApp, which they called ‘Super Mães Especiais’, or ‘Super Special Moms’. Although the clinic’s medical team has attempted to meet the diverse needs of its patients, the Super Special Moms group has provided social, psychological, and logistical support beyond what any health professional could provide, and has been critical to continued engagement in care. The Super Special Moms are women of all different ages, ethnicities, and socioeconomic levels. Despite this, they experience many of the same challenges caring for their new babies. The WhatsApp group has served as a
supportive space for sharing these challenges, including medical scares, stress of complicated caretaking routines, and feelings or experiences of stigma. It has also served as a place for the mothers to celebrate their children in a way that was otherwise difficult in their communities, where they and their children are often met with pity and reservation. Among their peers in the group, mothers swapped pictures and stories of their children’s progress, and exchanged congratulatory messages. The Super Special Moms even used the WhatsApp group to organize a picnic in the park, (see header image), offering their children and themselves an opportunity to socialize outside the hospital.

Beyond providing social interaction with an understanding community, the WhatsApp group became a place of empowerment for the Super Special Moms. When mothers expressed feelings of helplessness and hopelessness related to their children’s future and the vast array of treatments their children required, the group provided encouragement, emphasizing their duty and capability to be advocates for their children’s future. Additionally, as information on the response to CZS has evolved, physicians have faced the challenge of assuring treatment adherence while guiding mothers to additional and changing services. Yet, mothers most often refer to the group with questions regarding doctors’ suggestions or appointment logistics. This dynamic has not only reduced the workload of medical professionals, but also allowed the mothers another opportunity to provide peer support and help each other ensure the best possible care for their children.

Although the Brazilian government declared an end to the national Zika emergency on May 11 2017, the 2-year outbreak caused devastating consequences for families of children with CZS that will present challenges for many years to come. However, the Super Special Moms group will continue to provide a channel for mothers to support, empower, and inform each other to ensure the most positive outcomes for CZS-affected children.

Only recently has social media begun to be explored as a space of social support for patients dealing with medical challenges, and the impact of this on public health is not well understood. The Super Special Moms group demonstrates the utility of social media beyond relaying information in response to a health crisis. To maximize the benefit of social media in health care, it is critical that its use as a patient-support tool be broadly employed in communities confronting diverse health challenges worldwide.

This is a joint post with Fabiana Rabe Carvalho, Guillermo Douglass-Jaimes, and Lee Woodland Riley.
Cervical cancer deaths: a blind spot in global women’s health

Claire Fotheringham

Even the best drivers have a blind spot in their vision, an area in the periphery that remains just out of view but may reveal critical danger. Among global health priorities, policy blind spots also persist. Cervical cancer is a notable example. Preventable, detectable, and treatable at early stages, it remains the leading cause of cancer-related deaths in low- and middle-income countries (LMICs).

Globally, 528 000 new cases and 266 000 deaths from cervical cancer occurred in 2012 alone. And unlike health issues that demand everything from vector control to sociocultural shifts before having impact, cervical cancer can be detected and treated with evidence-based, inexpensive solutions that are well adapted for low-resource contexts. Yet, the disease, and those affected by it, often remain out of sight when talking about women’s health.

Even when cervical cancer is recognized as a priority, at-risk women can remain unseen, especially in low-resource settings. In the Philippines, for example, Médecins Sans Frontières (MSF) works with a local women’s health organization, Likhaan, in a slum area of Manila, to provide cervical cancer-related health services (prevention, screening, and some treatment). The women accessing this clinic—despite living in a cosmopolitan city in a middle-income country with a robust health system—have little ability for addressing their cervical cancer risk:

•  They lack the money to access the shining private hospitals found in the capital
•  The public clinics that offer cancer screening services often lack the ability or resources to treat cervical abnormalities if they are found
•  They often find it difficult to return for multiple appointments or visit separate referral centers before being treated.

Importantly, in population-dense Manila, services may be located several traffic-choked hours away from the slum where the patient lives. For the poorest populations, proximity to care is critically important and can mean the difference between life and death.

Much more can be done, easily and cost-effectively. Screening for cervical cancer is one of the few examples where a low-tech solution for poorer patients provides nearly the same quality of test as those found in high-income settings. Women in high-income countries (HICs) are familiar with getting a pap smear screening (nearly 80% of US women aged 15 to 49, and over 90% of college educated women, have had one). Abnormal cells are usually excised using an electrosurgical tool (though other options

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are available), and access to treatment is widespread. This gold standard of care has reduced cervical cancer incidence by 74% over the last 50 years.

In LMICs, by contrast, only 5% of women are estimated to have ever been screened for cervical cancer, despite these countries accounting for 87% of the deaths. Yet, this is not for lack of simple solutions. In the Philippines, the visual inspection with acetic acid (VIA) screening method allows non-specialist clinicians (including nurses or clinical officers) to conduct a visual examination by swabbing the cervix with acetic acid (vinegar). Any abnormal areas, which become discoloured after swabbing, are ‘frozen’ with low-tech cryotherapy that uses simple CO2 to render abnormal cells harmless, almost like freezing a wart (an apt comparison: human papillomavirus [HPV] causes most cervical cancers and is also a wart virus). Effectiveness measures for VIA and cryotherapy are only slightly lower than when using sophisticated procedures, and it has been estimated to cost less than $10 per woman screened to significantly decrease mortality in low-resource contexts. At the MSF/Likhaan clinic, a ‘single visit approach’ screens and treats women on the same day within less than 30 minutes, and supplemental mobile clinics bring services closer to the community. When lesions are unmanageable or suspected cancer is present, patients are referred to higher levels of care, accompanied by a social worker, and covered for costs by MSF for those who are uninsured. Looking ahead, services will be integrated further with a ‘Mother Daughter Initiative’ that will encourage women to bring their 9- to 13-year-old daughters for HPV vaccination while they come for their screening appointment. Future innovations will include SMS text message health information and appointment reminders, for HPV vaccination and for VIA/cryotherapy services.

Admittedly, addressing cervical cancer is not without its challenges. Screening programs can raise uncomfortable ethical issues in places without adequate treatment options, referral services, or palliative care for those diagnosed with more advanced stages of disease. This can make a diagnosis seem tantamount to rendering a death sentence for women with few choices. In low-resource contexts, logistical hurdles such as the simple lack of CO2 can be one of the biggest obstacles to treating more women with cryotherapy. Prevention can also be tough, as 9- to 13-year-old girls are a difficult population to vaccinate. They are usually healthy (without routine interactions with the health system), and efforts to vaccinate them in school have sometimes been obstructed by groups with unsubstantiated fears of ‘promoting promiscuity’ with a vaccine that protects against a sexually transmitted disease. Beyond these factors, HPV infections may take decades to manifest as disease, and young women do not always make the link between sexual practices and a fatal cancer. Most significantly, the HPV vaccine’s high cost prevents wider coverage and use.

Women’s health issues are often hidden in plain sight, but innovation in cervical cancer prevention and treatment shows that global health ‘blind spots’ need not be permanent. Persistence and creativity will help practitioners overcome even formidable challenges. The lives of many women and girls depend on it.
What evidence is up against

Julia Bunting

In a post-fact world, evidence can appear anachronistic. In an era of tweeted policies and trending hashtags, it almost seems quaint to be committed to rigorous research, to scientific method, to evidence-based determinations of what to do next. Stories catch fire. Conspiracy theories abound. Junk science drives ideological policymaking. The last year has made that clear.

Quality evidence faces an uphill battle, being continually dismissed and devalued despite the enormous benefits that it can bring to both public and private sector efforts to improve lives. In this climate, with facts and science under constant attack, defending evidence isn’t just important—it’s a necessity.

On a fundamental level, evidence identifies needs, providing us a roadmap to invest in what works, determine what is scalable, and assess what makes financial sense. While it would be naïve to think it would ever be the only consideration, robust evidence is the necessary foundation of effective policymaking and programme design. However, as we continue to see in 2017, programmes and policies are too often based not on facts, but on intuition or ideology.

To take an example from my own field of reproductive health, to reduce poverty and improve economic opportunities and fulfil basic rights, women need access to high-quality family planning services. This is a knowable fact and it isn’t new. The Population Council’s groundbreaking Matlab study in Bangladesh proved it back in the 1970s. If policymakers claim to care about women’s economic empowerment, then they need to care about providing access to family planning. Despite this, not only has the USA cut funds for family planning around the world, but within the country itself, employers are now allowed to make it harder, not easier, for women to access co-pay-free contraception. Evidence can be an antidote to ideology, but not if it is simply ignored.

A single day can feel like 100 years in this saturated news cycle, but the work of improving lives doesn’t happen overnight. There are many ways to make quality research more agile: build data collection into programming from the outset, use a blend of research methods, and communicate findings early and often.

Yet, the fact remains that for some of the most transformative ideas, research is an endurance sport. It requires investment and patience to determine what works and what doesn’t work to make people’s lives better. Our research into long-acting reversible contraceptives like the intrauterine device began before the birth control pill was even on the market. More than 50 years later, those
technologies are used by 170 million women worldwide. These highly effective contraceptive methods wouldn’t have been possible without decades of research and investment in that vision. Time is of the essence, but so is seeing through our commitments.

Evidence gives us the tools we need to be proactive, rather than day-to-day reactive. It guides us on how to have the desired impact and determines where to make the best long-term investments. Even a few percentage points gained in programme effectiveness can have a huge impact on reducing costs and improving lives. Billions of dollars are invested into international aid, but much less into ensuring we don’t waste our time and money on things that sound good yet haven’t been shown to work. We have an ethical commitment to ensure we spend resources rigorously testing ideas and bringing to scale the interventions that can have the biggest impact for the people who can benefit most.

For years, the world agonized over how to reduce child marriage, but no one could work out how to make real inroads. Population Council researchers in Ethiopia, with investment from the US Government, designed one of the first rigorously evaluated programmes that demonstrated how to increase the age at which girls get married. It’s because our programmes are built on evidence that we remain one of the few organizations in sub-Saharan Africa whose programmes have significantly delayed child marriage—in some cases, girls in the programme were 94% less likely to be married. What’s more, the programmes were also shown to increase school enrolment among girls aged 10-14, further increasing the return on investment.

When the US Government funds programmes like this, it’s thanks to the generosity of the American people and a belief in a better world for all. While evidence certainly can be misused to fuel partisan divides, at its best, it’s a tool to bridge those divides on issues we all care about, providing the clearest and most effective way to create positive change.

There has never been a more vital time to invest in research, precisely because it is under attack. At such a pivotal moment, quality research that produces reliable evidence is more essential than ever, because it is evidence that underpins improvements in our lives. We need to challenge the ideological fortresses that reject evidence and prioritize the time and money necessary to produce high-quality research. We must value evidence not only as a fundamental aspect of policymaking and programme design, but a social good.

The world cannot afford to slip backwards. For those of us who care about truth, now is the time to stand up and fight for it.
Melioidosis in south Asia: underground, underdiagnosed, and dangerous

Buddha Basnyat

Melioidosis or Whitmore’s disease may be difficult to diagnose because of its varied presentation—from a mild localized disease to full-blown septicemia. Although first discovered in 1912 by Whitmore and Krishnaswamy in the south Asian country of Burma, most clinicians throughout north India, Pakistan, Bangladesh, and Nepal do not consider this illness in the evaluation of a febrile patient. This is despite estimates that south Asia is the hub of this disease, representing 44% of the global burden.

Melioidosis is a potentially life-threatening illness caused by *Burkholderia pseudomallei*, a gram-negative bacterium found in the soil, with the predominant mode of transmission being percutaneous inoculation. Direk Limmathurotsakul and colleagues, who have done extensive work regarding this disease, estimate that there may be about 165,000 cases of human melioidosis per year worldwide, of which over 50% (89,000 cases) succumb to the illness.

Furthermore, because diabetes, which is a strong risk factor for melioidosis, is all too common in the subcontinent, it is easy to understand why melioidosis is predicted to be common in south Asia. Indeed, there are many anecdotal reports of undiagnosed febrile patients going from north India to hospitals in south India such as the Christian Medical College, Vellore, where this disease features prominently in the differential diagnosis of a referred febrile patient. Often the referral patient whose final diagnosis will turn out to be melioidosis will have a history of being unsuccessfully treated for tuberculosis, which *melioidosis clearly mimics*. It is high time that we considered melioidosis for the febrile patient throughout all hospitals in south Asia.

However, diagnosis will not be enough because the organism is a tricky bug to treat. The third-generation cephalosporin, ceftriaxone, is possibly the commonest parenteral antibiotic used in south Asian hospitals in patients with sepsis, but unfortunately it is ineffective for the treatment of melioidosis. It is therefore important to keep a high index of suspicion of this disease when ceftriaxone treatment fails, especially because treatment with ineffective antibiotics has been associated with over 70% mortality in septic patients with melioidosis.

A landmark study was published in *The Lancet* in 1989 regarding the treatment of this disease. The study was an open randomized trial comparing ceftazidime (a different third-generation cephalosporin) to the conventional therapy at the time which consisted of trimethoprim/sulfamethoxazole and chloramphenicol. Strikingly, the ceftazidime arm was associated with a 50% decrease
in mortality compared to the conventional treatment. Unfortunately, in places like Nepal—especially in the areas where it borders on India’s most populous states, Uttar Pradesh and Bihar (combined total population of over 300 million), and where melioidosis is in all likelihood underdiagnosed—the awareness about the findings of this study is almost non-existent. Why has melioidosis as a diagnosis not been properly considered in these areas, and publications not made in this regard?

One of the reasons may be lack of diagnostic facilities for the processing of blood cultures and recognition of this organism. In addition, colonies of this bacterium often look like environmental contaminants and are disregarded as being of no clinical significance. Detection of the capsular polysaccharide produced by \textit{B pseudomallei} in clinical specimens of urine, blood, and pus are successfully being developed as rapid, point-of-care tests which, if cost-effective, could make a huge impact in the diagnosis of this disease in these areas.

Another less-acknowledged reason for the lack of diagnosis in areas like southern Nepal could also be the dearth of equipoise; that is, doctors not keeping an open mind about the possibility of diseases heretofore unrecognized in the area. For example, there are anecdotal reports of laboratory technicians who have been trained elsewhere recognizing melioidosis in bacterial cultures, yet a treating physician may be very reluctant to consider this ‘unknown’ diagnosis when the strange culture reports are brought to their attention.

Finally, with the present post-flooding situation (where melioidosis seems to thrive) in many northern humid parts of the subcontinent, it is even more pertinent to consider the diagnosis of this elusive illness in a febrile patient. Doing so will ensure that proper treatment with effective antibiotics may be administered with a greater chance of a successful outcome, ultimately enhancing the awareness of the problem.
Can blockchain disrupt health education, licensing, and credentialling?

Alexander Peters

Blockchain is best known as the technology supporting Bitcoin and other cryptocurrencies. The underlying technology, however, which uses advanced computer science to maintain secure, distributed data ledgers, has far broader potential uses and is already being adopted across several industries including mining and natural resources, as well as the food industry. Healthcare too will benefit from advances in blockchain technology, with the potential for it to impact the care of patients, as well as the credentialling of medical practitioners.

Blockchain stands to revolutionize how we track medical education, certify licensure, and verify appropriate credentialling of medical practitioners, a process that has become exceedingly costly and cumbersome for clinicians and institutions alike. For the global health community, this potential is massive. Blockchains could improve medical education and credentialling internationally, and enable a new era of transparency in the training and verification of medical providers.

Education and examination

Students connected to the internet are no longer confined to learning from medical professionals within geographic proximity. A number of groups have already undertaken efforts to maximize this potential, both for continuing medical education (CME) in low- and middle-income countries and for those still in training in these settings; and, academic medical institutions are beginning to introduce online preclinical medical curricula. While this concept is not particularly new, what could transform training would be the ability to reliably track, vet, and verify all of these educational activities in real time with full transparency. This is among the most promising potential contributions of blockchain to global health education.

For example, by building a blockchain tying unique student identifiers and secure, time-stamped standardized examinations, it will not only be possible to track educational attainment throughout education, but also allow for students to move through curricula at their own pace from anywhere in the world. Similarly, upon advancing to clinical portions of a curriculum, students can create durable and confidential records of patient encounters, complete with data about services provided and clinical outcomes. Confidential keys for consultant physicians, and
potentially, patients receiving the care, can be used to verify the veracity of these encounters. In this way, records of the entirety of one’s medical education can be carefully catalogued, thus assuring competencies are achieved across a range of specialties and procedures. More importantly, this activity could all be tracked within the clinical flow, keeping the marginal cost of tracking educational attainment close to zero. Clinical evaluations by preceptors, research mentors, and even patients can be assimilated into this blockchain, completing the portrait of one’s training. For procedural specialties, such a system will allow preceptors to offer procedure-specific feedback about the extent of involvement in cases and areas of strength and weakness technically. At a system level, student educational blockchains could be audited to ensure that the facilities hosting clinical education provide an adequate variety and quality of clinical encounters.

Upon graduating to clinical practice, this immutable and verified account of one’s medical education can continue to grow. Conference attendance, time spent reading medical literature or on portals such as UpToDate, and efforts towards other avenues of CME can be time-stamped into the blockchain. Similarly, advanced cardiac life support/basic life support status, case logs, records of lawsuits and settlements, and other measures of professional achievement or setback can be securely and immutably stored.

**Licensing and credentialling**

Today, no common system exists for verifying medical credentials or licensing internationally. Credentialling processes, especially from one country to another, can be time-consuming and costly, as providers must request transcripts and paperwork from schools and training institutions all over the world. In the USA, a centralized repository for credentials exists through the Federation Credentials Verification Service; however, this process remains expensive, slow, and lacks interoperability as its primary output is a bulky portable document format (PDF) file for state licensing boards to sort through.

Initiatives are already underway to streamline this process in the USA. HashedHealth, a blockchain health innovation company, recently partnered with the Illinois Blockchain Initiative to improve the efficiency and accuracy of the state’s medical credentialling system, with the long term goal of simplifying interstate and multistate licensing on a national scale. Similarly, earlier this year Intel proposed a novel schema for a multi-tiered credentialling system based on a blockchain that would benefit both physicians and hospitals by cutting costs and increasing efficiency of this ‘disagreeable yet vital administrative function’.

A blockchain credentialling system would create a uniform language for diplomas, training certifications, and CME that can be uploaded to a secure, online repository. Access to one’s educational history on this blockchain can then be securely and immediately shared with credentialling departments using a digital key. Verification of credentials could occur either by the granting institution (ie, a school), by verifying institutions (ie, hospital credentialling offices or licensing boards), a ministry of health, or more likely a combination of these. Every successful verification process could itself be built into the immutable blockchain, minimizing the risk of fraudulent activity and tampering. Once credentials are verified by trusted organizations, future credentiallers can view those secure processes without needing to re-verify every credential at its source.
sparing providers the costly and time-consuming process of re-requesting and re-transmitting their credentials with every new professional opportunity.

**Unresolved issues**

As hopeful and potentially transformational as blockchain technology is for global health education, there are still a number of challenges that must be recognised with the underlying technology itself. This is a new technology that often pushes the limits of data and storage and transaction speed. And, as it is new, blockchain applications may require existing system changes for legacy systems. Energy consumption is another issue. Bitcoin ‘miners’ are attempting 450,000 trillion solutions per second requiring tremendous computer power. Regulation of blockchain is only recently being discussed. How will national governments regulate and control this new technology? Cost is another question mark; transaction costs could be much lower with blockchain technology; however, startup capital costs could be an obstacle. Lastly and possibly most importantly, cultural acceptance will determine the ultimate success of blockchain. This new technology represents the far end of the spectrum in decentralized ‘cloud’ computing and will require the trust of care providers, educational institutions, patients and governments for blockchain technology to successfully transform global health education.

Blockchain stands to create a record of one’s education and training that facilitates credentialling. Once a provider is credentialled or licensed an education blockchain can further streamline maintenance of certification through centralized CME tracking. Courses taken, conferences attended, papers and books read, professional procedure logs, or any other academic activities could be automatically incorporated into a provider’s credentialling blockchain—allowing an immediate, verifiable, and immutable education record for maintaining certification, licensing, and professional advancement. Blockchain could unify the entire ‘educational life span’ of clinicians into one immutable, transparent, global, and verifiable record.

This is a joint post with Brian M Till, Program in Global Surgery and Social Change, Harvard Medical School; Salim Afshar, Department of Plastic and Oral Surgery, Boston Children’s Hospital; and John G Meara, Harvard Medical School and Department of Plastic and Oral Surgery, Boston Children’s Hospital.
Rehabilitation: a growing necessity in sub-Saharan Africa

Woody Rule

In a rural sub-Saharan African hospital, a young mother presents to a hospital pregnant with twins, dizzy and unable to speak. This mother has eclampsia, requiring emergency caesarean section to save her life and her babies’ lives. The mother’s condition results in a massive haemorrhagic stroke during surgery. Health-care professionals continue caring for this woman in the hospital, feeding her twins and encouraging family members to be active in the goal planning. After 3 weeks, the mother awakes but is eventually discharged with cognitive impairment, amnesia, communication deficits, and significant bilateral muscular weakness requiring ambulatory assistance.

Trained community-health workers provide the family with rehabilitation techniques and education at home to care for the twins, and these workers also visit the family in their home to assess recovery. She has since recovered some functioning and can, with assistance, care for her children. Without a community-based rehabilitation approach such as this, where may this woman and her family be today?

Sub-Saharan Africa accounts for almost 24% of the global disease burden. Within that burden, there is evidence of an epidemiological shift from communicable (eg, diarrhoeal disease, lower respiratory infections) to non-communicable diseases (NCDs). NCDs include cardiovascular disease (CVD), which is one of the leading causes of death globally and one cause of long-term disability. Although survival from communicable diseases (eg, HIV/AIDS) can also result in long-term disability, NCDs are taking precedence, affecting individuals of all ages. Rehabilitation to mitigate the impact of chronic disease and long-term disability is needed for individuals across the lifespan. Unfortunately, there is a shortage of rehabilitation professionals to alleviate these disease effects in sub-Saharan Africa, often due to the primary shortage of rehabilitation education programmes. Only 11 sub-Saharan African countries out of 49 have entry-level degree programmes in physiotherapy: five with a master’s programme and three with doctoral-level programmes. For occupational therapy, there are fewer programmes, with South Africa being the only country offering higher degrees in occupational therapy at this time. In speech-language therapy, programmes do exist in sub-Saharan Africa, including but not limited to Mozambique, Zambia, Uganda, Kenya, and Ghana, but they remain underdeveloped. Although few formal studies have evaluated the presence, quality, and outcomes of rehabilitation education programmes in sub-Saharan Africa, close

Rural sub-Saharan African regions may benefit from a community-based rehabilitation approach that relies on targeted asset-based intervention and trained community health professionals.
attention should be paid to the development of rehabilitation services and clinical education through a community-based rehabilitation framework.

Data concerning the rehabilitation services workforce are sparse, but fortunately international organizations have joined to consolidate resources for rehabilitation infrastructure and to ensure global engagement. For instance, the World Confederation for Physical Therapy, the World Federation of Occupational Therapists, and the International Association of Logopedics and Phoniatrics serve as global entities that consolidate rehabilitation resources. Furthermore, these organizations have published guidelines and resources for the implementation and development of new clinical training programmes in majority world countries such as those in sub-Saharan Africa. These initiatives are supported by WHO’s Framework for Action on Interprofessional Education and Collaborative Practice, which encourages development of interprofessional education to achieve improved health outcomes. Yet, programmes continue to have limited buy-in from stakeholders, resulting in stalled development including limited job availability for graduates. Development should instead be supported through a community-based rehabilitation approach which integrates local, regional, national, and international stakeholders. Although research on the validity of such approaches is limited, this multimodal, inclusive approach is supported by WHO and has been used effectively in many regions throughout the majority world.

Ten key components of community-based rehabilitation have been described: a rights-based approach; involvement of people with disabilities and communities; access to health information; a holistic approach to disability; legislative advocacy; self-advocacy; short-term and long-term goal setting; inclusion of people with disabilities; sociocultural considerations; and addressing issues of poverty.

The burden of stroke specifically is currently borne by low-income and middle-income countries. In reference to our initial case example, a community-based rehabilitation approach improved this woman’s quality of life by mitigating physical and sociocultural barriers that limit access to health care.

It is clear that there are limitations to rehabilitation services in sub-Saharan Africa. However, these limitations have the potential to be effectively mitigated through implementation of a community-based rehabilitation approach. This discussion should be a catalyst for global partnership, bolstering community-based resources and improving access to quality, effective rehabilitation services.

I would like to thank Bea Staley (Charles Darwin University), Michael Davis (University of Tennessee Health Sciences Center), Sherri Letchford (AIC Kijabe Hospital, Kenya) and Risha Joshi (Association of Speech-Language Therapists in Kenya) for their contributions to this discussion.
Gender data: moving beyond sex-disaggregated analyses

Anita Raj

World Statistics Day, last celebrated on October 20, 2015, shortly after adoption of the Sustainable Development Goals (SDGs), will next be celebrated on October 20, 2020, and will track our progress on the SDGs. Will we see demonstrable progress in the statistics across the 194 nations of the world that adopted the SDGs? Those of us working at the intersection of gender and public health are doubtful, at least for SDG 5: Achieve Gender Equality and Empowerment for All Women and Girls.

Certainly, we have concerns that progress may be inadequate, mixed, or may even back-track for some of our indicators. However, we have the even greater concern that we continue to lack the necessary data and gender analysis of comprehensive indicators to track our progress.

Gender data, often described as data disaggregated by sex and analyzed to understand the differential outcomes for women, men, girls, and boys, is increasingly gaining prominence and use in global health and development. Gender data is pivotal to uncovering key gender gaps—inequities—in health and development, and to tracking SDG 5 progress. Our concerns regarding the state of these data and their analysis are as follows:

• UN Women maintains that we have no data for 80% of the indicators for SDG 5. For example, key markers of gender biases and burden related to domestic responsibilities (ie, unpaid work), income generation, and leisure cannot be tracked due to lack of agreed upon measures of time use, time poverty, time autonomy, and time enjoyment for cross-national analysis. Good measurement of gender data needs greater prioritization.

• Gender data relies on analysis of sex disaggregated data, or sex ratios. However, in reality, the data are a mix of influence of sex and gender, and we have little ability to disentangle this distinction at this point. Further, in many contexts and on many health issues, captured from large-scale surveys such as Demographic and Health Surveys, we lack comparable data on males and females, impeding our ability to even consider certain topics with this lens.

• Gender inequalities cannot just be defined by numeric differences; they should be based on what is just. Sex differences or sex ratio imbalances based on numeric inequalities do not necessarily mean the existence of a gender inequity. As with other forms of social inequalities in health, a numeric distribution may not be indicative of an unjust situation.

• Growing work on intersectionality across social and gender inequities in health, including our own, documents the importance of multiply disaggregated data and suggests additive or even multiplicative health effects at the intersection of gender and social discrimination and biases. Simple gender diaggregation will not capture this.

Fortunately, there are some advancements in the above issues in some national contexts, improving global capacities to capture, track, and analyze gender data. This will allow us to identify and tackle gender inequities in ways not previously seen, and our field is rising to the challenge of this analysis. For example, UN Women, Equal Measure and others are working to increase recognition of missing indicators for SDG 5, so measurement development to fill these gaps can increase. The new EMERGE project, generated from academia, is working to support a platform for development and sharing of best evidence measures in gender equality and empowerment for use in field research and national monitoring. The UN Foundation’s Data 2X is working with multilateral organizations and academia to ensure that quality data are collected and analyzed across national settings. And, for the first time, The Lancet...
is supporting a data-driven series on gender norms and health to advance the conceptualization and comprehensive learnings being generated in our field.

Certainly, we are gaining ground in this area, but we must amplify and accelerate these efforts if we are going to have and use gender data, broadly and beyond sex disaggregated data, to monitor our progress on SDG 5 by our next World Statistics Data, October 20, 2020.

This is a joint post with Gary L Darmstadt, Associate Dean for Maternal and Child Health and Professor of Neonatal and Developmental Pediatrics, Department of Pediatrics, Stanford University School of Medicine; and Sarah K Henry, Program Director, Gender Equality, Stanford University School of Medicine.
Surveying for chronic kidney disease in agricultural communities in central America

Pedro Ordunez and Wendy Hoy

In the last four decades, thousands of young people, in clusters of very vulnerable farming communities in central America, have suffered—and died from—a severe form of kidney failure of uncertain aetiology (termed chronic kidney disease of non-traditional causes, or CKDnT). This type of chronic kidney disease (CKD), primarily a form of chronic interstitial nephritis, which is most frequent in male agricultural workers, has reached epidemic proportions, devastating entire communities and overwhelming health systems.

In the fall of 2013, public health alarms had sounded in Washington, DC, where ministers of health called for a comprehensive and urgent response. The resulting resolution (CD52.R10), passed by the Directing Council of the WHO/PAHO Regional Committee called for strategic actions, including the strengthening of surveillance systems, in particular those in at-risk populations and communities, through the provision of technical support, and underlined the importance of regulatory frameworks in the successful implementation of strategic actions.

PAHO has now published a report, Epidemic of chronic kidney disease in agricultural communities in central America: case definitions, methodological basis and approaches for public health surveillance (also available in Spanish), which addresses this resolution and provides a framework for the development of systematic surveillance of CKD and CKDnT in the central American region.

The report presents, in a summarized and comprehensive way, the background to this epidemic, including its epidemiology and the current hypothetical risk factors for CKDnT. It also includes a description of clinical and pathological characteristics, the case definitions for CKDnT surveillance, and the methodological basis and approaches for public health surveillance. It was developed in consultation with a wide range of experts, from PAHO technical areas and external surveillance experts, through an extended iterative process, with multiple rounds of consultations and with the most currently available data and evidence.

The document goes beyond the current hypothetical risk factors (agrochemicals and heat stress and dehydration) to introduce a more encompassing multi-determinant model. We believe that categories of various risk factors for CKD need not be mutually exclusive. This multi-determinant approach implies that organ damage can result from multiple risk factors, acute and chronic, which can act simultaneously or sequentially to amplify the injury caused by each. Multi-determinant models or frameworks allow contemplation of all feasible risk factors, acting alone or in concert,
and can thus reconcile different theories of causation. They also act as a methodological guide. The intention of CKDnT surveillance is not to create a parallel and vertical surveillance system. Rather, we envision that countries will establish a CKD surveillance system, as a component or as a subsystem of a broader non-communicable disease surveillance system, aligned with the comprehensive model of CKD that would capture all CKD cases, irrespective of their aetiology and inclusive of all geo-administrative units within the country. Subsequently, the CKDnT case definitions criteria can be applied to characterize people with CKD by most likely cause. Capturing all CKD cases is useful to estimate the impact of different risk factors for CKD, as well as for planning purposes. The surveillance methodology menu and data platform framework, and their specific metric, with a potential combination of options composed by non-linear approaches, from (a) passive surveillance, based on routinely collected mortality and morbidity registry data, to (b) active surveillance approaches, including sentinel surveillance, and (c) population-based surveys, through repeated cross-sectional surveys, can generate a comprehensive surveillance system. Hence, each country, based on its own resources and priorities, can decide where, when, and which of these components should be prioritized. For instance, countries should continue to strengthen the passive surveillance component and, in parallel, start the sentinel surveillance in high-risk communities or in high-risk occupational groups.

The framework presented focuses on CKDnT case definitions and the methodological basis and approaches for public health surveillance for central America but may be useful in other high-risk scenarios for CKDnT such as Sri Lanka and India. Surveillance for CKD in general, and CKDnT particularly, and their risk factors is both necessary and urgent in the current context of the epidemic in agricultural communities in central America. Well-designed surveillance systems will provide the basis for the evaluation of policies and interventions aimed at curbing this epidemic, even when the causes are not completely clear. This methodology will be revised and updated as new evidence becomes available, but we encourage all concerned to use the standardized case definitions and to implement a coordinated, flexible, ethically pertinent comprehensive surveillance system, both for CKD and CKDnT.
Getting serious about financing the end of epidemics

Chris Collins

The US Congress appears poised to reject major cuts to global health programmes, but a more fundamental problem remains. The international efforts to end the epidemics of AIDS, tuberculosis, and malaria are underfinanced. By 2020, if current funding levels are not increased, the annual financing shortfall could reach approximately $3.5 billion for malaria, $6 billion for tuberculosis, and $7 billion for HIV.

This investment deficit means we are watching the steady undoing of our opportunity to end these epidemics in the near future, and creating the real threat of resurgent diseases made worse by growing resistance to drug treatments. Flat investment levels will not end the epidemics of AIDS, tuberculosis, and malaria, and delaying a better financed response translates to millions of lives lost and billions more dollars in expense.

A much more deliberate effort is needed to close the financing gap. Policymakers and global health advocates should take this up with urgency and be willing to get out of their comfort zones. This will require learning about and working with innovative and private finance, and growing domestic investments by implementing countries. It will also require recognizing that donor aid has unique strengths, including the ability to catalyze other funding, and needs to be increased.

The funding gap is completely avoidable, but addressing it will require understanding the potential and limitations of each financing approach.

First, innovative financing has enormous potential to unlock significant resources. It is estimated there is now $100 trillion in the global savings pool, and billions of dollars are available in development banks. World Bank President Jim Kim has observed that, “For decades, the rich have used sophisticated tools—swaps, derivatives, debt—to get richer. We need to put those tools to work in creative ways on behalf of the poor.”

Innovative financing for global health can take many forms, including:

- **Public guarantees** that mitigate risk in private financing, thus encouraging investment
- **Public-private funding**, where resources from public and private sources are combined, and private funding and expertise are leveraged
- **Buy downs** of government loans, in which a third party pays all or part of the interest or principal of a loan to open up social spending
- **Milestone-based payments**, where funding is disbursed once agreed upon services are delivered or outcomes achieved
- **Debt swaps**, in which a country’s debt is forgiven if it guarantees those funds will be invested in social goals
- **Impact bonds** that pay returns to investors if predetermined social goals are realized
- **Seed funding** from the public or donor sector that operates like venture capital to support high-risk, high-return priorities
• **Dedicated taxes or levies** earmarked to health priorities

These arrangements have great potential, but they are no panacea. Private investors may be less inclined to finance projects in politically unstable environments, or projects unlikely to deliver a profit in the short term. Increasing reliance on private sector health investment presents the risk that health systems—essential for primary care and scaling interventions—will continue to be neglected. Ultimately though, with proper oversight and coordination among stakeholders, innovative financing can be more transparent and promote accountability.

Second, increased domestic investment is crucial. When countries invest in their own people’s health, it advances country ownership and can help integrate single disease programming into the broader health system. This financing has increased markedly in recent years. Countries receiving support from the Global Fund, for example, increased support of their own health programs by 52% between the 2012–2014 and 2015–2017 funding cycles. The later period marks the first time African countries have mobilized more domestic than foreign funding for health.

Yet many of the countries most heavily affected by major epidemics are not near being able to finance responses on their own. Withdrawing donor aid too rapidly from middle-income countries risks progress in fighting disease. Even many countries with growing economies face significant challenges in improving tax collection, tackling corruption, and improving oversight and transparency—all necessary to increase domestic resources.

Third, donor aid remains essential to success. As noted by writer Jonathan Glennie, aid has unique advantages. It generally is focused on public health outcomes, is flexible, is increasingly accountable and transparent, and frequently promotes engagement of civil society in decision-making. It often builds in critically important evaluation components. And aid can take on the politically difficult work of serving socially marginalized groups that may be ignored, or worse, by their own governments.

The 1970s smallpox elimination campaign is an example of aid’s potential. Success in ending that global scourge required adapting to the needs of communities, flexibility in strategic implementation, and global determination and financing.

Policymakers who want to save millions of lives from epidemics need to be talking about increasing donor aid, not letting it flatline or decline. Of course, aid-supported programmes need to be adaptable and fully accountable, focused on outcomes, leveraging investment, and supporting equity of access. Donor-supported programmes like the Global Fund, and US bilateral programmes on AIDS, tuberculosis, and malaria, demonstrate how aid can be results-driven and lead the way to ending epidemics.

Attention to efficient, strategic use of funds is always important, but we cannot end disease threats without a more committed and creative approach to expanding financing. Priorities include:

• **Leading the way.** The USA (or another major donor) should challenge world leaders to come together to marshal public and private financing adequate to end the biggest epidemics.

• **Thinking inclusively.** Advocates and policymakers should drive discussion of options for increasing financing for global health priorities. The role of innovative finance and its synergies with donor aid should be considered in the multilateral aid reviews underway in the US Congress and several US think tanks.

• **Promoting and tracking innovative finance.** Donor governments should actively consider incentives to harness private dollars for global health, building in protections to promote transparency and accountability. A new resource-tracking endeavour is needed to capture public, private, and donor health financing together to help policymakers use resources strategically.

• **Being willing to experiment.** Bilateral and multilateral organizations should explore new financing approaches, such as public-private finance or loan buy-down arrangements. There is often a natural risk aversion in these institutions, but it’s important to utilize the extensive resources in major aid pools to explore how to more effectively leverage private finance.

• **Promoting domestic investment.** The international community should build in financial and diplomatic incentives for implementing countries to invest more in their health, including the health of those most at risk and socially marginalized. Greater investment is also needed in civil society groups to advocate for government financing, services, and equity of access. Donors should require sustainability plans be in place. All funding streams should ultimately pave the way for increased country capacity and ownership.

• **Increasing donor investment.** Policymakers in donor countries must understand the huge return on investment for global health aid and the lessons of history when interest waned in tackling infectious disease. Innovative finance can supplement appropriations here, too: small levies on larger pots of spending can generate billions.

The worst epidemics of our time can be ended, but the window of opportunity is closing. The funds are there; it is a matter of harnessing them and using them wisely.
Critical reflections on meaningful youth contributions to global health

Sam Wing Sum Li

Young people who attended the 2017 UN High-Level Political Forum (HLPF) may have experienced mixed feelings. On one hand, it was exciting to attend this annual meeting dedicated to reviewing global progress towards the implementation of the 2030 Agenda for Sustainable Development, including the Sustainable Development Goals (SDGs); on the other hand it was disappointing to see such limited interactions between stakeholders including civil society and their governments. Although 44 Member States presented their Voluntary National Reviews (VNRs), only a handful of them included key stakeholder groups such as young people in their national review mechanisms. Many groups, such as the Indian medical students, thus develop shadow reports to provide alternative viewpoints and statistics to contrast with the official findings. Whether governments even care to read these “alternative” reports, however, remains unknown.

The reality: a notable absence of young people in high-level engagement
The systemic exclusion of young people from formal mechanisms to review progress towards achieving the SDGs has been evidenced since their adoption. According to an analysis by Restless Development among 22 countries that carried out VNRs in 2016, only 18% consulted with young people when preparing their VNR report. Whilst 91% referenced young people as beneficiaries of development, only 27% referenced young people as agents of change to partner in or lead development.

As the newly appointed UN Secretary-General’s Envoy on Youth Jayathma Wickramanayak rightly pointed out: “young people’s participation in VNRs tend to occur on an informal basis, because they tend not to be inside the government”.

The question: why do we need youth at the table and how do we make it meaningful?
Around 50% of the world is under 30, with 1·8 billion young people aged 10–24 years. They face discrimination, political exclusion, high levels of poverty, as well as limited access to health systems, educational opportunities, and decent internship/jobs. However, they are sources of knowledge and innovative solutions in their communities. The UN Convention on the Rights of the Child specifically
states that children have the right to express their views freely in all matters affecting them. Such a demographic bonus and human rights perspective forms a foundation of why young people are needed at different negotiations. Moreover, 65 out of 169 SDG targets reference young people explicitly or implicitly, with a focus on empowerment, participation, and/or wellbeing. The 20 youth-specific targets spread across six key SDGs. We need to emphasise the ownership and relevance of sustainable development to the youth audience.

Young people have an obligation not only to speak for themselves but also for those who are disadvantaged or even invisible. Their social outreach and savvy with the internet should be directed to help engage all people in their broad diversity, including those who are marginalised.

Youth participation is meaningful only when it has real influence and occurs within a formal process, with the potential to generate concrete changes. An institutionalised space and a formal mechanism for young people at policy level have long been called for. At a local level, we echo the recommendation by the Lancet Commission on Adolescent Health and Wellbeing and urge governments to appoint youth focal points who can further convene national forums that bring together all constituents to participate in the design and implementation of policies, especially those that affect their health and wellbeing.

We need to go beyond the rhetoric of simply having the presence of young people, and further elaborate on what exactly it is that young people can contribute or provide added value. Many SDG indicators are unlikely to be reached by business as usual. Particularly in health, the fact that young people are less bound by affiliations and existing norms means they can provide fresh and critical perspectives. For example, the recent Lancet Youth Commission on Essential Medicines Policies has pointed out systemic barriers of access to affordable medicines and called for change. In the arena of non-communicable diseases (NCDs), the IFMSA Budva Youth Declaration has stepped up to suggest priorities in tackling commercial determinants of health.

Promoting local and international youth advocacy is indeed an exciting journey, but not without concerns. Youth representation in high-level meetings or consultation targeted at youth must bear in mind that young people are a diverse group with various backgrounds and social roles. There is genuine risk of bias towards the views of
privileged youth—those with better access to information or more affluent backgrounds which may increase their opportunities and access to relevant forums. Governments and UN institutions could improve their actions to ensure the voices are representative of the populations, and not merely tokenistic figureheads. Various measures such as needs-based grants and robust consultation methodology are needed but are often lacking. Youth organisations, which represent millions of young people around the globe with democratic procedures to create policies inspired by local action and global politics, offer an opportunity for more voices to be heard.

Young people tend to advocate for particular topics they are educated on. Narrowly emphasising particular global health topics may lead to competition or neglect of others. Engagement platforms should therefore motivate self-learning, facilitate an active process of empowerment, and foster critical thinking. This again brings out the importance of diversity in backgrounds and interests.

The quest: what actions are in place to realise meaningful youth contribution to global health?
The UN as an intergovernmental body holds a unique position in providing guidance and opportunities. The below is a list of some exciting initiatives which provide spaces for young people to contribute:

• In 2016, UNDP launched the 5-year Youth Global Programme for Sustainable Development and Peace, providing countries with technical and policy support for a comprehensive approach to youth empowerment.

• WHO and other UN entities have launched the Global Accelerated Action for Health of Adolescents (AA-HAI!), providing countries with latest available evidence in adolescent health, highlighting methods for prioritisation of programmes, and supporting youth participants as beneficiaries, partners, and leaders in adolescent health response.

• The WHO Global Coordination Mechanism for Non-communicable Diseases (NCDs) has a youth-led NCDs and the Next Generation Community of Practice to facilitate joint action and knowledge sharing around NCDs

• ACT2030 is a collaborative project aimed at strengthening youth-led, data driven accountability mechanisms in 12 priority countries to monitor progress on the SDGs and the commitments enclosed in the 2016 Political Declaration on HIV.

The UN Major Group for Children and Youth (UN MGCY) is the official space for young people to contribute in UN processes. Mandated by Agenda 21 and over a dozen other UN resolutions, it is one of nine Major Groups and other Stakeholders (MGoS) which constitute the stakeholder engagement mechanisms across the UN system. The UN MGCY is comprised of individuals under 30, youth-led and youth-serving organisations, and child-focused agencies. Many young people were able to attend the HLPF and contribute to the proceedings through the UN MGCY and the MGSo coordination mechanism facilitated by the UN Department of Economics and Social Affairs (DESA). The potential for such a mechanism in linking high-level dialogues with grassroots actions should not be underestimated.

This year in HLPF, our call for not only gender balance but also age balance during interventions and discussion panels has been echoed by the Co-Chairs. Looking ahead to upcoming years, the UN MGCY has a unique opportunity to ensure health equity is incorporated into all aspects of the sustainable development agenda. The annual ECOSOC Youth Forum, which precedes the HLPF, provides an opportunity to review priorities and renew commitments.

There is an additional spotlight on the WHO Global Conference on Non-Communicable Diseases which is to be held in Uruguay on October 18–20. NCD Child, the International Federation of Medical Students Associations, the Young Professionals Chronic Disease Network, and other partners have called upon countries to include language related to youth in the outcome documents, arguing that inclusion of young people in country accountability, coupled with prevention and treatment agendas across a life-course approach, will be a critical pathway to promote wellbeing for all people.

We still have much work to do on contextualising the SDGs for youth, as well as facilitating meaningful youth participation at local level. As government and other stakeholders move forward to localise the 2030 Agenda by developing roadmaps, which includes reviewing development priorities and beginning to roll out programmes, there is a window of opportunity to increase civil society action, including youth engagement.

The year 2030 will approach with a blink. We must not fail due to inaction.
Evaluation in innovation—death threats and the importance of independence

Robert Marr

My fellow presenter leant over and whispered in my ear: “If you say yes, I’ll kill you”. Death threats, even in jest, are not what you expect when speaking at a medical research conference, especially from colleagues, but I might have known that this particular presentation would get people going.

Ever since Médecins Sans Frontières (MSF) had started work on a bespoke, tablet-based medical record designed to be rapidly adaptable for use in the most challenging environments, opinion had been divided.

In one camp were the innovators, fast-talking, breathlessly persuasive tech-nerds with big ideas about how they could make the world a better place, unencumbered by the regulation and ethical oversight that slowed their researcher cousins. They saw the huge potential for improving care—particularly for diseases like Ebola, where records contaminated with body fluids are burned rather than mined for data—and did something about it.

In the other camp were the conservatives; cognisant of the many challenges in developing safe electronic patient records for use in resource-rich countries, let alone the sorts of places MSF routinely works. They fretted about budgets, about patient safety, about the ethics of trialling cutting-edge IT on some of the world’s most vulnerable people, and were heard to mutter gnomic phrases about paper being, really, a very sophisticated technology. Most UK hospitals still use paper. And so on.

I was about to speak at the MSF Scientific Days, an annual event at the UK’s Royal Society of Medicine. I had just presented my findings from an evaluation of the Electronic Medical Record for Emergencies (EMR-E) I had completed earlier that year in Bokoro, Chad. I had followed the immensely charismatic keynote speaker Z-Dogg MD, who had spent half an hour making people laugh about the woeful inadequacies of most electronic medical records systems. He’d also rapped…So I was a little apprehensive, and just hoping what I said would resonate.

I was nervous because I was delivering bad news. My job as the evaluator had been to work out whether the project met its brief: to provide a handheld medical record that could replace paper notes at the bedside, could be rapidly adapted for use in emergencies, and would function reliably in hot, dusty environments (which computers typically don’t like) without access to the internet or reliable power.

It was a tall order for a small team and, sadly, the pilot had not gone to plan. Although the project team had made huge progress, it quickly became clear that the EMR-E was not ready. It comes in two parts: a tiny battery-powered server that holds the data; and tablet computers that connect to this gizmo via wi-fi to generate a very smart-looking patient record. When we tested the server under field conditions, it crashed. Changes made to improve stability
meant we needed paper records as a backup, which in turn made it very difficult to properly assess its impact on care. A small number of very serious technical shortcomings that meant the equipment could not, as things stood, be used as hoped in emergencies.

I had just delivered this message and its kicker, that an improved version 3 would cost at least €500 000. To my surprise, this had been well received. Not because of its content (which was disappointing) but because of the bravery of senior staff in commissioning a rigorous evaluation of a high-profile project, and then acting on the results. It was this bravery that had prompted the question that had upset my co-presenter: “If your independent evaluation has shown that this particular project didn’t work, and given that we all have a very natural desire to view our own work positively, do you think we can trust the findings of your [non-independent] fellow presenters?”

I answered as best I could, truthfully and, I hope, diplomatically. No one had misrepresented their findings. And much of the work showcased was interesting and exciting, with possible real-world benefits for our patients. But, and it’s a big but, if we are to be sure that the work we do is valuable, we should make rigorous efforts to evaluate its impact, and that is a big undertaking and is more easily done by someone who is not invested in the project.

After a period of reflection, I see rigorous, independent evaluation, and a degree of ethical oversight appropriate to the scale and risk of the enterprise at hand, as the two bridges that can connect Innovation Island to its conservative mainland. Both approaches are being championed by MSF, through a recently developed Ethical Innovation Framework and increasing insistence on evaluation of impact. Light-touch ethical oversight can protect vulnerable populations without suffocating exciting innovation. And evaluation, done well, can generate a pragmatic evidence base, helping us to make dispassionate judgements upon the usefulness of new ideas.

Back in the conference, the person in the chair next to me relaxed, seemingly satisfied. At the end of the day, the MC stripped off his shirt while delivering his closing remarks, to reveal a t-shirt emblazoned with the slogan, “WE FAILED FORWARD AND LEARNED.”
WHO has added snakebite to the NTD list: these things need to happen next

Benjamin Waldmann

Snakebite envenoming kills more than 125 000 people each year and leaves more than 400 000 victims with severe disability. It kills more people than any other WHO-categorised neglected tropical disease (NTD), but also stands out as the oddball on a list of debilitating diseases that affect over a billion people every year. Snakebite cannot be eradicated, we cannot be vaccinated against it, and we are possibly a distance from seeing any kind of universal antivenom to treat the immense number of different snake venoms that cause indiscriminate despair to thousands of people every day. So what can we do?

Engage civil society
Almost the entire tropical world is endemic for snakebite, but has limited or no monitoring/surveillance mechanism in place to record and measure the actual scale of the problem. Without knowing the burden, it is difficult for snakebite-endemic countries to take the lead on the issue. This is quite vivid when you think of antivenom procurement: if you don’t know the amount of people bitten by venomous snakes, how are you supposed to purchase the right amount of antivenom? The only way to get real evidence and valid numbers is by empowering grassroots communities with tested, contextualised advocacy tools that allow them to measure the real burden. To put this into practice, HAI and GSI are piloting civil society organisation projects in Kenya, Uganda, and Zambia. A frightening consideration is that many experts predict that the number of victims claimed by snakebite could be far higher than expected once we start properly recording the disease.

Political will
Several UN Member States led by the Government of Costa Rica—with the Netherlands as the only western...
Government—called upon WHO to reinstate snakebite envenoming on its list of neglected tropical diseases (NTDs) and embark on a comprehensive roadmap. Yet WHO and the World Health Assembly cannot solve the issue on their own. It is imperative that politicians at a national level in snakebite-affected countries match the WHO and UN Member State commitments by ensuring that a national snakebite strategy is established. Therefore, collaboration between all levels of government, as well as cross-departmentally, is needed. This is the only way to ensure snakebite is holistically controlled in each country. Anarfi Asamoah-Baah, the WHO’s Deputy Director-General, said at the NTD Summit earlier this year: “Endemic countries should be central in this fight and must own this”. He added that there is a limited impact that external funders can have.

Amplify resources
The NTD community is well aware that NTD resourcing has entered a challenging climate for global funding and that it would be naïve to expect external donors to treat snakebite differently. But in the short term, WHO and the multi-stakeholder snakebite movement need support to develop an environment that is ripe for endemic countries to follow. And in turn, external funding must be matched by a commitment of resources at a national level, which will also require adequate health system strengthening and infrastructure development as with many other NTDs. This need was reinforced in the fourth WHO report on NTDs. The report said that “[b]ecause the amounts invested in NTDs by domestic government are so small, modest increases can have a big impact, allowing even low-income countries to take ownership of an important global health programme”. It also commended countries that have made steps towards domestic financing, such as Egypt, Sudan, Tanzania, and the Democratic Republic of Congo.

Antivenom is the bottom line
Currently, there are debilitating shortages of independently validated, safe, and effective snakebite antivenoms. The gap has been filled by a rise in clinically ineffective counterfeits that, in the worst case, are health threatening. It is essential that antivenoms are appropriately certified and recommended through leadership at WHO. And, in line with this, countries must purchase approved antivenoms through programmes that reduce cost. Collective bulk purchasing agreements could be one way to achieve that. Antivenom development is still stuck in the 19th century, not matching a desperate species-specific need for antivenoms. Therefore, the scientific community needs to show a commitment towards innovating treatments that improve cost and clinical effectiveness.

Action in these areas will result in instant impact to the thousands of people affected by snakebite in the poorest, most neglected, and marginalised parts of the world. Now is the time to act. No longer will neglected victims be left without a voice to demand a right to the most basic of services to control this devastating disease.
ARGENTINA MUST FOLLOW GERMANY’S LEAD ON HEALTH AT G20

Madeleine Elder

Health ministers and secretaries across the Americas want to strengthen their health systems. In June this year, the Executive Committee of PAHO approved a draft of the Sustainable Health Agenda for the Americas 2018–2030 (SHAA2030). The draft has been developed by a team of high-level representatives from 16 PAHO Member States, led by Ecuador. This month, all regional ministers will be asked to sign off on a final version at the Pan-American Sanitary Conference in Washington, DC, USA. If approved, the SHAA2030 will provide direction and political vision for health development in the Americas. Argentina, as head of G20 next year, should lead efforts to push ahead the final agenda, further strengthen health systems, and advance universal health coverage (UHC) across the region and more broadly. It can do this by making health a key topic of the 2018 summit.

Health policymakers around the world face mounting challenges, from global health crisis management to strengthening health systems and confronting antimicrobial resistance (AMR). Creating resilient health systems to respond to global health issues needs more than the coordinating and financing efforts of the WHO and World Bank. Stronger systems also require political leadership.

It was therefore encouraging to see German Chancellor Angela Merkel and G20 health ministers commit for the first time to greater global cooperation on health through their Berlin Declaration in May. Merkel called on Argentina, as president of G20 in 2018, to not forget the topic of health. Argentina will follow Merkel’s request and uphold the group’s commitment. But regionally, it can do more.

Argentina should make health a key topic of the G20 summit. It must consider how stronger systems can contribute to the implementation of the 2030 Sustainable Development Goals (SDGs). It should incorporate Latin American & Caribbean (LAC) interests in health on the agenda, provide lessons from the region, and call on heads of state to prioritise health. In the meantime, Argentina should join, and call on all national governments in the region to join, UHC2030, a global partnership administered by WHO-World Bank, which promotes collaboration for health systems strengthening (so far, of the countries listed, only three are from LAC—Chile, El Salvador, and Haiti).

The Americas have made progress in health in recent years. A number of countries have implemented reform focused on UHC. Public health spending increased in 22 countries between 2010 and 2014. And in 2014, PAHO member states adopted a regional strategy for universal access to health and UHC.
However, corruption scandals, rising medication costs, high poverty and inequality rates, and unstable economies present serious challenges for LAC governments in the sustainable financing of service delivery. Infectious diseases remain a concern and recent epidemics like Zika suggest that more coordinated preparedness is required. Prevention and control of non-communicable diseases continue to be necessary.

Meanwhile, political and economic turmoil in Venezuela has led to an acute health crisis. Reports state that cases of preventable diseases such as diphtheria, malaria, tuberculosis, Chagas disease, and dengue are all up. A study conducted by three key Venezuelan universities found that 74% of respondents involuntarily lost an average of 8·7 kg in weight in 2016. In addition, the Venezuelan Health Observatory reported that maternal and neonatal mortality rates increased significantly last year (data on stillbirths do not appear to be available). Health outcomes will only worsen as the country sinks deeper into a dictatorship. As refugees continue to cross borders, this matters to the region—on all accounts.

Argentina, with its highly fragmented health-care system, is by no means immune to challenges. Historic economic mismanagement and inflation have made financing difficult (for example, PAMI, the state health insurer for over 5 million pensioners and retirees, is in a state of financial distress). High prices and shortages have made access to medications problematic. But Jorge Lemus, Argentina’s health minister, has taken steps to strengthen the system, putting Argentina in a credible position to progress the regional health agenda as G20 head.

Health reform unveiled last year shoots for UHC. President Mauricio Macri’s government wants to better connect around 15 million uninsured patients to the public health system and improve the quality, safety, and cost-effectiveness of the treatment they receive. Although he faces immense political and economic pressures, Lemus has promised to act in a number of areas to improve access to medications, data collection, and patient care (boosts to financing, the implementation of an interoperability medical records system, and the creation of an independent health technology assessment agency, HTA).

Despite the recent changes, the system still faces huge challenges. The alleged underexecution of budgets, restructuring within the national health ministry, and changes to programmes have led some to criticise the government. But existing efforts to better align Argentina with PAHO are promising. Argentina has been engaged in PAHO pushes towards strengthening the assessment of medical devices and pharmaceuticals for some time. Its medications, food, and medical technology regulator (ANMAT) has again been awarded regional reference centre status. There is talk of a medications bill to change regulation around R&D, manufacturing, distribution, and the prescription of medicines. Some lawmakers have put forward bills to regulate the packaging and advertising of fatty and sugary foods and beverages. Meanwhile, Argentina played a leading role in a recent declaration by Mercosur health ministers. They committed to the joint procurement of high-cost medicines.

As the first South American G20 host, Argentina has the opportunity to meaningfully incorporate LAC interests into the broader G20 agenda. During its first 19 months in office, the Macri administration has made concerted efforts to reintege Argentina with the region and the world. It must now more actively and vocally prioritise health on this reintegration agenda.
Do cash transfers help older people to access health services?

Flavia Galvani

In the context of increasing national and international commitment towards achieving universal health coverage, and the need to address ageing and health issues in all countries, cash transfers are a potential strategy in removing some of the barriers to accessing health care for older people. But what does the evidence say?

HelpAge International, Age International, and Development Action assessed the extent to which existing social cash transfers improve access to health care for older people in Ethiopia, Mozambique, Tanzania, and Zimbabwe. We conducted 15 focus group discussions involving 134 participants across rural and urban areas, key informant interviews, and a survey of 212 older people in Mozambique.

Overall, the supply of health services is limited in all four countries, with health expenditure much lower than the US$60 per capita spending recommended for Africa by WHO. For example, Ethiopia spends less than half of this amount (US$27 per capita).

This lack of investment in health results in the limited availability, accessibility, affordability, and adequacy of health services.

The number of health facilities is insufficient in all four countries, which also face a critical health worker shortage according to WHO's definition of fewer than 2.28 health workers per 1000 population.

Regarding the provision of health services to older people, many current training approaches and curricula in the four study countries do not include geriatrics and gerontology and often lack even a basic focus on health issues faced in older age. A 2012 study found that, of 40 countries in Africa, 35 had no formal undergraduate training for medical students in geriatrics and 33 reported no national postgraduate training scheme for geriatrics. Our research highlighted that Zimbabwe is the only one of these four countries to have any qualified geriatricians.

In this context of limited health service supply, older people and their families face significant challenges in finding the means to reach and access health care.

Despite policies and programmes guaranteeing free health care for older people, the costs of access remain high, according to study participants. This is in line with the out-of-pocket health expenditure figures for these countries: 32% of total health expenditure in Ethiopia, 9% in Mozambique, 23% in Tanzania, and 36% in Zimbabwe.

Transport costs are especially high for people in rural communities and the most vulnerable older people: those needing to be accompanied by carers, those with limited mobility and little family support, and those with chronic conditions who need on-going treatment.

Older people also spoke of being unable to access prescribed medications, either because they were not available free of charge or not available at all. They also reported having to pay for diagnostics such as laboratory tests and x-rays.
Older people in these countries struggle to cover these costs as the majority of them have no regular income.

Do cash transfers help overcome barriers to health services for older people?

Our study investigated the effects of cash transfer schemes in removing barriers to accessing health services for older people.

Older people across all four countries felt that the monetary value of the cash transfers received was insufficient to transform their ability to seek health care, or to persuade them to prioritise their health over other needs.

However, the findings suggest that cash transfers made up a substantial proportion of recipients’ income and played an important role in removing some of the demand-side barriers to health care for older people.

Older people used cash transfers to pay for transport to health facilities, consultation fees, treatment, health insurance, and prescriptions.

Recipients across all four countries also talked about using cash transfers to leverage additional money for accessing health care, particularly in emergencies. Strategies included using it as collateral for loans, investing in income-generating activities, and participating in savings groups.

In Mozambique, over 60% of respondents receiving cash transfers were satisfied with their ability to meet health-care-related costs, compared with 47% of those not receiving cash transfers. Survey respondents receiving a cash transfer also rated their ability to meet transport costs 15% higher than households not receiving a transfer.

Many older people also reported using cash transfers to support family members, particularly grandchildren, to access health care. In Tanzania, older people have been using cash transfers to purchase Community Health Fund cards for children in their care—a form of health insurance that enables vulnerable children to access health care.

When linked with health promotion, cash transfers also proved useful for strengthening health-seeking behaviour. Cash transfers in Ethiopia and Tanzania were particularly successful at improving older people’s ability to recognise and act on their own health needs when linked to health awareness activities.

In conclusion, we found that while cash transfers can have a positive impact on older people’s access to health services, their effectiveness was limited by low coverage and inadequate benefit levels. Improving income security through social protection mechanisms, such as universal pensions, alongside health promotion activities targeted at older people, can provide a useful way for supporting better access to health services.

It is also clear that cash transfers cannot compensate for major weaknesses in health systems. Efforts towards universal health coverage can help to address the barriers faced by older people in accessing health services, providing that the health needs of older people are known and understood.

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Taking health in all policies seriously: health impact assessments, WHO leadership, and international law

Eric Friedman and Gian Luca Burci

Government approval of a new mining operation. A policy to deport undocumented immigrants. An international agreement that enhances pharmaceutical patent protections. All will affect health and health equity, but will policymakers factor these effects into their decisions?

The law could ensure that it becomes standard practice to assess and take into account anticipated health and health equity effects of significant policy decisions. These assessments can then inform the decisions so that they protect health and uphold people’s rights. This is beginning to happen through health impact assessments (HIAs), with several jurisdictions requiring HIAs in certain circumstances (panel). Environmental impact assessments (EIAs) remain the most common legal route to assess activities’ impact on health, though they often contain inadequate health analyses.

The potential of HIAs extends beyond protecting against policies that may undermine health to expanding health-promoting policies to better advance health and health equity. Can a programme to provide schoolchildren with nutritious meals be extended to the most vulnerable children—those not in school? Does an initiative to build new urban parks locate them where opportunities for exercise are most limited?

EIAs provide a model for incorporating such analyses into law. The Convention on Environmental Impact Assessments in a Transboundary Context (CEIA) requires states to undertake an EIA for activities “likely to cause a significant adverse transboundary impact”, and to incorporate findings from the assessment and related consultations in their final decision.

A protocol to the CEIA extends the assessment requirement to the domestic realm. Meanwhile, in contrast to the handful of national requirements to conduct HIAs, by 2005 more than 100 countries had laws or regulations on EIAs.

It is time to bridge the gap between legal norms and the tremendous potential of HIAs. The importance of Health in All Policies is now universally recognized, with HIAs a critical tool to implementing this approach. The potential of HIAs to help ensure a coherent and fully integrated focus on human health across the diverse Sustainable Development Goal agenda is added reason for the rapid scale-up of HIAs. Meanwhile, expanding experience with HIAs, guidance from numerous jurisdiction, and emerging examples of domestic legislation provide ever-surer footing for international legal norms.

It is time, therefore, for states to negotiate a global legal instrument to establish common international standards on HIAs and ensure accountability to them. As in the environmental realm, the instrument that would best achieve this is an international treaty, although it may be a stepwise
process to reach that point. In any case, the ultimate goal should be a solid, legally-based commitment among states to institutionalize HIAs, providing operational guidance and a framework for states’ accountability. And as with the CEIA in concert with its Protocol, the instrument should cover both policies with transboundary and those with only domestic effects. With the capacity to carry out HIAs varying widely, it will need to include commitments to capacity-building and international cooperation.

Guidance should include such issues as when HIAs are needed, any differences between HIAs with transboundary and with purely domestic effects, and possible conflicts between the findings of environmental and health impact assessments. The instrument should also address implementation of findings, process benchmarks, accountability and remedies for non-implementation, incorporation of HIA outcomes into policies, and an assessment of how implemented policies impact health and health equity.

Guidance can come from international practice on the right to health, as elaborated in General Comment 14 of the UN Committee on Economic, Social and Cultural Rights and subsequent legal developments. This could also inform how states should respond to HIA findings: ensuring that all policies conform to their right to health and other human rights obligations. EIA good practices could provide further guidance.

How HIAs are conducted is vitally important for their legitimacy, particularly the central role of the public and potentially affected communities. HIAs must not become technocratic or top-down exercises, but rather should consistently ensure the population’s right to participation “in all health-related decision-making.” Further guidance can come from the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, with its provisions on facilitating early, effective, and informed participation, and ensuring that decisions take into account the outcome of the participation. An HIA legal instrument might go further still, facilitating participation and ensuring the free and informed consent of highly marginalized communities.

In its role of global health leader, WHO should take the lead in developing this instrument. Newly elected Director-General Tedros Adhanom Ghebreyesus should include a legal instrument on the HIAs among his priorities. His stated commitment to the right to health and health at the centre of global policymaking is encouraging in this respect. The potential of HIAs to move people’s health and rights nearer the centre of policy considerations is too great to leave that potential untapped.

Panel: Institutionalizing health impact assessments

Countries with laws requiring health impact assessments
- Thailand (constitutional requirement for an HIA and public hearing for projects or activities that may seriously affect health, while the National Health Act empowers individuals to request and participate in upon an HIA for a public policy)
- Slovakia (Public Health Act empowers public health authorities to require HIAs for development and other projects that may have possible negative effects on public health)
- Lithuania (Law on Public Health requires a public HIA to commence or expand economic activities that pose a risk to human health)

Sub-national jurisdictions with laws requiring health impact assessments
- USA (multiple states have laws requiring HIAs or broader assessments that may encompass health, in sectors including the environment, energy, transportation, food and agriculture, and waste disposal)
- Canada (Quebec’s Public Health Act requires the province’s health minister to be consulted on laws and regulations that may significantly affect the health of the population, a requirement that has led to an inter-ministerial HIA mechanism)
- Australia (Victoria’s Public Health and Wellbeing Act authorizes the state’s minister of health to require the health ministry to conduct an HIA)

A number of other countries have health agencies that are actively promoting HIAs. Among them are Finland, New Zealand, Switzerland, the UK, and the USA.
Microbes as munitions: the neglected public health consequences of war

Daniel Flecknoe

The most easily understood casualties of armed conflict are those killed on the battlefield. This remains true even when cities become battlefields, so that the life extinguished by a bullet or bomb is much more likely to be that of a civilian than a soldier. The concept of violent death in war is deeply ingrained in the Western cultural imagination, which may be what makes the central message of this blog so counter-intuitive for most people—namely, that the biggest killer in wartime is not violence. It is, and has always been, infectious disease.

This has been repeatedly documented historically, but still remains rarely understood. In the Napoleonic wars, the number of British casualties from disease was eight-fold higher than that from violence inflicted by the enemy. The conditions of the American Civil War created plagues of respiratory, diarrhoeal, and parasitic disease among the soldiery that accounted for double the number of casualties that were caused by fighting. And almost exactly a century ago, the death throes of the First World War were giving birth to the “Spanish Flu” pandemic, which over the next 2 years killed 50–100 million people around the world (the First World War “only” killed 21 million).

Next year will be the centenary of the 1918 Armistice—the First World War’s conclusion. There are many lessons to learn from that horrific conflict, and yet its very worst outcome is still relatively unknown. The war did not create the H1N1 influenza virus, but it spread it around the world with the efficiency of a high-tech bioweapon delivery system. The logic of “military necessity” dictated forced troop movements across continents and oceans to overcrowded, insanitary camps with wholly inadequate medical facilities. Public health efforts to control the spread of this new type of influenza were hampered by military and civil authorities focused solely upon winning the war, and determined not to let morale be damaged by bad news stories in the press. Indeed, the name “Spanish Flu” is itself a by-product of wartime censorship—Spain, the only European country not involved in the First World War, was also the only one to...
allow any media reporting on the disease that was ravaging its population.

In modern warfare, overcrowded refugee camps, disruption of medical infrastructure, lack of clean water supplies, and the breakdown of public health programmes (such as vaccination campaigns and disease surveillance) all contribute to an increased risk of outbreaks during periods of armed conflict. The deliberate targeting of health workers has also been used as a strategy to weaken the civilian population in enemy-controlled areas. Disease, already an eager camp follower of armies down the ages, is increasingly being deployed intentionally as a weapon against non-combatants.

The current cholera epidemic in Yemen is a stark reminder that the age-old collusion between armed conflict and disease has lost none of its destructive potential, and the repercussions can last for many years after a conflict has ended. While the fighting rages on, humanitarian efforts to improve the health of the population are restricted by security considerations, and once hostilities end many aid organisations (that may have comprised a significant proportion of the country’s health capacity) tend to move on to more active crises. The Ebola outbreak of 2014–2016 demonstrated the potential long-term consequences of health systems destroyed, medical professionals killed or driven overseas, and an international community now mostly focused elsewhere. The national immune systems of Liberia, Guinea, and Sierra Leone had been fatally weakened by civil wars, and that damage has still not yet been repaired.

Strengthening the enforcement mechanisms which safeguard international humanitarian law, stopping attacks on civilians and health workers, and rebuilding health systems shattered by war are all urgent public health priorities. The impunity enjoyed by many flagrant war criminals is not only a metaphorical symptom of some sickness in our global culture, it is a literal guarantee that easily-preventable illnesses will continue to devastate the populations of conflict zones as more doctors are killed, more hospitals burned, and more vital medical supplies blocked as the wicked continue to use microbes as munitions.

The Faculty of Public Health’s Global Violence Prevention working group is actively engaged in contributing to research, raising awareness, and working with international partners in an attempt to tackle the multifarious public health dimensions of armed conflict. Anyone interested in this topic is welcome to apply for membership, or to attend the Medact/IPPNW Health Through Peace conference on September 4–6. This gathering of health professionals, scholars, students, and activists features a programme of impressive speakers and workshops aimed at squarely facing the challenges posed by nuclear brinksmanship, attacks on health workers, mass population movements, and many other contemporary issues relating to conflict and health.
To the newly elected local leadership of Nepal: Invest in the expansion of emergency obstetric services, even where most women deliver at home

Sheela Maru

Even as democracy around the world seems to be under assault, the air here in rural Nepal is full of excitement and hope as the first local elections in 20 years proceed in Nepal’s young democracy. As new elected officials are announced from highly contested and often very close races across the country, people are eagerly and closely watching the first steps of their new municipal governments. How will they deliver on their campaign promises? How will they invest their budget, the most money local governments have ever been allocated to manage?

In health care, the decentralization of funds and decision-making that the new federalist structure brings provides an opportunity for greater accountability and equity. Instead of money flowing from the central level to appointed bureaucrats posted across the country, most of whom had no stake in areas they were serving, it is now allotted directly to municipal governments. Seven states are divided into 744 municipalities, each with a mayor and a six-member governing team.

The current status of health for women and children in Nepal is dismal: maternal and neonatal mortality rates are among the worst in the world, likely due to a high proportion of women still delivering their babies at home without a skilled provider. But perhaps women deliver at home because they don’t find much benefit to delivering in a facility. The Nepal Health Facilities Report, released in January 2017, reveals that only 15% of health facilities in Nepal provide basic or comprehensive emergency obstetric and neonatal care, which is a standard set by WHO for essential services at the time of birth.

When high-quality and comprehensive services are available, utilization increases. That’s what my research team has found with regards to maternal and child health services in a recent study in rural Nepal. In 2012, a district-level hospital, operating as a public-private partnership between the non-profit organization Possible and the government of Nepal, started a blood bank, hired a general practitioner trained to perform caesarean sections, and opened an operating room.

“I didn’t know about the hospital and I don’t have anyone who could carry me to the hospital,” said a postpartum woman in the hospital’s catchment area prior to this expansion. When 77 postpartum women were interviewed prior to the expansion, researchers found that only 30%...
delivered in a facility, either the hospital or a more rural health post. Many reported a desire to deliver in the hospital, but they had not made a plan to in advance. In remote and impoverished areas, the planning involved includes saving money, making transportation arrangements, and finding people who can support you both at home and in the hospital.

Just 2 years later, the situation had changed dramatically. Of 133 postpartum women interviewed, 77% delivered in a facility. Both delivery in the hospital (27–59%) and delivery in the more rural health posts (3–17%) had increased. What drove this change? Further analysis revealed that the existence of expanded services at the hospital itself was a significant factor. Other factors that were found to be significant included the perception of the hospital as a safe place to deliver, the prioritization of safety in making the decision of where to deliver, and finally a higher income level.

In women’s own voices, a clear change in mindset could be heard. A woman after the expansion of services described her birth experience: “This was my first pregnancy...I completed 4 ANCs. I had also arranged for money and clothes. When the labour pain started, we called the jeep. I delivered normally in the hospital. I am very happy.” Now more women were planning ahead for coming to the hospital for delivery and they were overcoming barriers to do so. Trust in the broader health-care system had increased through better quality at the hospital.

Municipal governments should consider investing in improving quality and expanding services at their health facilities as a first step towards improving the status of health in their communities. A better hospital increases utilization by creating a reputation for safety and building trust with the community—if you come, we will help you. This is exactly the type of relationship municipal governments should aim to create with their new constituents, because this is how democracy will serve Nepal. Given the tenuous state of democracy in the world today, the rest of us should take note.
Cyber threat, protection and resilience in humanitarian relief and response

Eric Perakslis

The recent attack on Britain’s National Health System (NHS) crippled the computing infrastructure, impeded care delivery and served as a warning cry that all health-care workers have a responsibility to understand cyber threat. The same applies to humanitarian response settings. While far less wired than western clinics, new technological innovations are improving the efficacy, efficiency, and scale of humanitarian response in almost all settings and must proceed unhindered. The basics of solid cyber defence can be promptly applied to protect patients, workers, and missions.

Health-care workers are not police, engineers, or IT people, but they need not be to understand cyber threat and to put basic protections and controls into place. It starts with understanding the nature and motives of cyber threat and attacks. The Industrial Control Systems Cyber Emergency Response Team of the US Department of Homeland Security (ICS-CERT) provides comprehensive listings and descriptions of cyber threat types, threat actors, and threat sources. The general definitions supplied here are useful but they must be viewed through the lens of the specific attributes of humanitarian activity and environments.

In conflict zones, it is likely that all four types of threat actors are present: cyber criminals, hacktivists, nation-states, and insider threat. Although tactics may be common, we must understand that each adversary has different motivations when designing our defences.

Next we must understand the specific vulnerabilities in humanitarian settings. Many displaced populations are on the run or actively hiding. Even simple personally identifiable information may be used to identify or locate them and is therefore dangerous. Additionally, confidentiality and privacy during medical interventions must be carefully guarded to avoid stigmatization and other forms of retribution.

Unfortunately, under-resourced humanitarian settings often contain the types of outdated and poorly supported infrastructure that led to the recent NHS hacks. Thieves aren’t looking for a challenge; they are looking for easy victims, and outdated infrastructure is most vulnerable as its weaknesses are known and readily exploited.

How ‘real and present’ is cyber threat? Most attacks are highly automated and persistent. Malicious code
self-propagates on the internet and spreads very quickly to anywhere defences are low. Humanitarian settings need not be intentionally targeted to fall prey. Interestingly, there are groups that provide real-time monitoring and reporting of cyber threat such as this version from Kapernsky.

**Cyber protection and resilience**

Cyber protection measures are physical and procedural controls intended to prevent cyber attacks. Cyber resilience is about managing and surviving an attack.

Ransomware, all the rage these days, is malicious software that encrypts the data on a computer rendering it inaccessible until the victim pays to decrypt the data and machine. Simple cyber protection from ransomware includes training, anti-virus and anti-malware software. Another cyber protection would be not allowing physical media, such as pen drives, to pass between computers as they are frequent vectors for cyber attack.

Cyber resilience, on the other hand, would be daily automated or manual backups onto a separate physical hard drive that is isolated from the internet. Backups won’t prevent attack but will enable recovery. In a ransomware attack, if all needed data and system files are secured elsewhere, it may be possible to recover without paying a ransom.

Within humanitarian settings, the basics of cyber protection apply with the following controls being most practical and detailed descriptions are available from us-cert:

- Maintain an accurate inventory of all computers and mobile devices
- Establish role-based access
- Have a strong password strategy
- Keep systems current and patched
- Have and enforce mobile device policies
- Implement mandatory cyber security training
- Have an incident response plan.

Much of the above is often referred to as practising good cyber hygiene. Cyber resilience is less codified and is highly specific to any given physical site. Cyber resilience strategies for headquarters and field sites are likely to vary significantly and, again, must be highly specific. Generally, the essential aspects of cyber resilience are:

- **Strong cyber security controls** (above)
- **Cyber aware culture**
  More than just training. Awareness needs to be elevated and maintained. Add cyber security stories to regular communications. Use electronic banners and signage. Create a dialogue and keep it alive.
- **Identification of critical assets**
  Maintain a simple but complete inventory. Limit use to essential functions. Practice good physical security.
- **Proactive threat detection**
  IT departments must have access to threat intelligence data and there are many open-source and industry-specific options available.
- **Durable IT infrastructure**
  Security-by-design. IT can be much more secure via simple measures such as nightly backups of essential data and systems, deactivation of USB ports, and systems redundancy.
- **Routine testing**
  All physical and procedural controls must be tested and occasional testing by outside experts is an excellent best practice.
- **Information sharing**
  Engage with peer groups to share successes, news of threats, and best practices.
- **Engage and cultivate cyber security talent**
  A gap of 1·8 million unfilled jobs is expected by 2022. Competition is tough and salaries are high. NGOs must be smart. Work with universities to take full advantage of interns, co-ops and post docs. Be creative.

While each of these is attainable, they cannot all happen at once; a practical but proactive approach is essential. We must prioritize based on benefit-risk just like any medical intervention.

Lastly, all humanitarian organizations should consider adding a senior cyber security professional to their BOD, SAB or similar. It’s that important. Cyber threat is dynamic and advanced and access to experts is essential.

We live in a time when humanitarian needs are unprecedented and technological innovation is an essential part of our response, and we cannot allow cyber threat to slow that response.
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The World Bank in Kagame’s Rwanda

Chris Simms

On August 4, 2017, Paul Kagame was re-elected President of Rwanda for a third term, winning 98% of the popular vote and extending his 17-year rule to at least 2024. Many observers are wary of these results and cite extraordinary levels of fear and intimidation to help explain the margins. Given Rwanda’s continued status as a beacon of development success, how should the international community respond?

Commentary last month by The Economist (entitled “Intimidation nation”) and the Wall Street Journal (entitled “Rwanda’s success story adds a dark new chapter”) raised questions similar to those raised a year earlier in a Lancet Comment which acknowledged Rwanda’s economic progress, yet described reports of a country of repression, violence, and torture. It noted in particular the claim that 60 journalists had been “threatened, arrested, kidnapped, beaten, assaulted, abused, imprisoned, expelled, or killed for questioning or criticising Paul Kagame and his government”. The Financial Times provides the grisly details of events cited by The Lancet, stating that “political opponents are regularly imprisoned. Some have been killed, including those who have fled into exile”.

In counterpoint, the World Bank president Kim Yong Jim in a 2-day visit to Rwanda in March 2017 (during the pre-election campaign) said “I am here to say to President Paul Kagame and the Rwandan people that the World Bank Group is ready to help in any way that they can and that we believe in the future of Rwanda and we believe that it will continue to be a model for the entire world”. Jim’s declaration came at a time when Diane Rwigara, an accountant and human rights activist, had undertaken a campaign to bring the Kagame government to task for abuses of civil rights and intimidation of the Rwandan people.

These differing perspectives are partly explained by the Bank’s disinclination to concern itself with human rights abuses in borrowing countries. It cites its “political prohibition” from involving itself in a local politics. A report by a United Nations rapporteur assessing this policy and its consequences found that “political prohibition” is “misplaced legalism”. It stated that “the World Bank is currently a human rights-free zone. In its operational policies, in particular, it treats human rights more like an infectious disease than universal values and obligations.”

The Bank’s recently published policy framework ignores this criticism and (according to observers) it further weakens its stance on human rights by relegating them to a non-binding “vision” statement. The framework further bolsters a value system that places primacy on results, not on the means by which they are achieved; it may open new pathways that undermine good governance or democratic institutions.

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If you have questions or need further assistance, please let me know! 😊
The framework also provides part of the context that enabled Jim to declare his enthusiasm that Rwanda was “a model for the entire world”. This is not a shared view and The Economist states just the opposite—“many Africans see Paul Kagame’s Rwanda as a model. They are wrong”. Kagame’s “model”, it says, sends the message that “authoritarianism is more likely than democracy to bring stability and growth”. The overemphasis on results rather than how they are achieved may lead to mis-steps or unwise decisions: the fact that Jim made a 2-day visit to Rwanda in the run-up to a national election and then offered effusive support for Kagame seems inappropriate and surely ironic, given the Bank’s “political prohibition”. Needless to say, it was exploited by the state-controlled media.

Although Kagame once said that if he was unable to groom a successor by 2017, “it means that I have not created capacity for a post-me Rwanda. I see this as a personal failure”, he in fact has methodically warded off (or eliminated) nascent threats to his power. The most recent example being Diane Rwigara, who decided at the last minute to run for President in May 2017; within days of her announcement she was demeaned on the internet and prevented from registering despite meeting the requirement set out by the electoral commission.

The international community ought to take Kagame at his word—that his presence in this month’s election is an indicator of a basic failure on his part and, since it was considered a success by many donors, that it is a sign of their failure as well. It represents confusion about their stated institutional values and how far they have drifted from their mission and vision.

The naiveté of the global community to accept the astonishing margin of victory of 98% and 90% turnout is probably inversely proportional to its continuing guilt over its failure to respond to the 1994 genocide. However, the World Bank with its “political prohibition” in particular ought to take stock of what it is and where it’s going—even addressing ancient questions of whether it’s more interested in growth than poverty, and in disbursement than health outcomes.
Most access-to-medicine initiatives are poorly evaluated; here’s one effort to change that

David J Olson

Two decades ago, WHO and health activists were pressuring global pharmaceutical companies to launch more “access-to-medicine” (AtM) initiatives in low- and middle-income countries. They succeeded, and that has started to happen. Unfortunately, few of these initiatives have any idea what kind of impact they are making.

Those are some of the conclusions of a study published in Health Affairs in April. A team of researchers associated with the Boston University Department of Global Health discovered that the number of AtM initiatives from 21 companies had grown from 17 in 2000 to 102 in 2015 but they found published evaluations for only seven of them.

From those seven evaluations, the researchers found 47 articles that met their inclusion criteria for evidence, and all of them were published in peer-reviewed journals. However, they determined that 62 percent of these were low quality, 32 percent were very low quality and 6 percent were moderate quality. None of them were rated high quality.

The bottom line: “Overall, our findings suggest that current efforts to evaluate the impact of industry-led access-to-medicines initiatives are inadequate.”

The researchers found “clear evidence” that pharmaceutical companies had responded to calls that they increase their commitment to improving access to medicines. But they also found that “the processes that companies use to determine initiative strategies and set priorities are not transparent, which raises questions about whether the resources involved are being allocated in line with the countries’ national priorities.”

But now Boston University is leading the way with a possible model to address these concerns by providing a measurable and transparent way of monitoring and evaluating an AtM initiative in Kenya.

This initiative, called Novartis Access, seeks to provide 15 medicines to address breast cancer, cardiovascular disease, type 2 diabetes and respiratory illnesses at a cost of USD $1 per treatment per month. The project started in Kenya in 2015 and plans to expand to 30 countries in
coming years. Novartis Access hopes to reach 20 million patients per year by 2020.

In an effort to avoid some of the mistakes described in the Health Affairs article, Novartis Access—from the beginning—sought the help of Boston University to evaluate its impact and the prices of these medicines at health facilities and households in Kenya in a completely objective and transparent fashion. Novartis has no control over the evaluation process and Boston University publishes protocols, agreements and all the results (positive or negative) on this website for all to see.

Why evaluate programs such as Novartis Access? In addition to satisfying the need to provide evidence of whether such programs are having the intended impact, there is a need to know who is using these medicines.

“One things we know about programs offering low-priced products—not just medicines but also food or fuel—is that it’s often not the poorest people who benefit, but the middle-income groups who know how to access the medicines and the appropriate treatment,” said Richard Laing, a professor at Boston University who is involved in the evaluation. “For that reason, we’re very keen to find out what happens at the household level, particularly to the poorest families.”

Laing said that what makes this evaluation different from previous efforts to measure the impact of AtM programs is that past efforts have almost always occurred after the fact: “The problem with these evaluations is that you don’t know what the situation was like before, and there is often no control group, so the evaluations have tended to be weak even when the best interventions have take place.”

Dr. Harald Nusser, head of Novartis Access, is excited about the evaluation and its potential to serve a model.

“Healthcare companies, including my own, have a had a long experience in measuring inputs (how many dollars we invest) and outputs (how many patients we reach, how many doctors we train),” he writes. “But we have not demonstrated the same agility in measuring health outcomes when this is the most meaningful way to evaluate public health improvement.”

“Probably the thing I am most excited about is the potential of this evaluation methodology to be used by other pharmaceutical companies to measure their access-to-medicine programs,” said Nusser. “Since Boston University is posting all of the protocols and methodologies on their website, anyone can easily adapt the model to their own needs.”

Indeed, Laing said that other companies are already coming to Boston University saying they would like to do a similar study. “By agreeing to this open approach, Novartis has set the standard for others to follow,” said Laing.

The Access to Medicine Foundation, funded by the Bill & Melinda Gates Foundation and the UK and Dutch governments, helps to keep AtM initiatives honest by compiling an index of the progress made by pharmaceutical companies to make their medicines available. Every two years since 2008, the Foundation has published the Access to Medicine Index. In 2016, Glaxo Smith Kline, Johnson & Johnson and Novartis were named as the leading companies.

The Health Affairs article opines that the index “appears to have created an incentive for expanding AtM initiatives, as well as for more transparent reporting.” But it also says that the index’s ranking methodology does not include a rigorous review of the evidence and should be improved to hold companies more accountable.
Deteriorating mental health in a Greek refugee camp

Laura MacFarlane

11pm. A young Afghan man is carried to the medical cabin by his friends. He has blood streaming down both of his arms. He is drunk, distressed, shouting. His wounds are not deep, but multiple. I sit him down, clean him up, talk to him with the help of my translator about why he has cut himself with a razorblade. The answer is one I have heard dozens of times before—“Moria no good”.

This scene is repeated frequently in Moria Refugee Camp on Lesbos, Greece. Recent figures indicate that there are 3985 refugees on Lesbos, the majority of whom are accommodated in Moria. Working in Lesbos as a camp medic, I expected to meet people from Syria, Iraq, and Afghanistan, but countries from around the world are represented, including the Democratic Republic of Congo, Algeria, and Ethiopia to name a few.

A few nights later, a Syrian man is found trying to hang himself. His friends tell me that he has attempted suicide several times, citing camp conditions, delays to his asylum interview, and a sense of helplessness as a reason for this. Later in the evening, the medical team is called out to see a Bangladeshi man who has lost consciousness. Having seen this presentation in the camp multiple times, we know the cause to be psychogenic pseudo-syncope.

Psychiatric problems are very common in the camp. Many refugees, fleeing from war or persecution, already have a diagnosis of post-traumatic stress disorder (PTSD). Panic attacks, somatic symptoms, and alcohol-related problems are seen regularly.

Sadly, psychological care services are lacking, despite the fact that mental health problems are widely acknowledged to carry a significant burden of morbidity amongst refugees. There is a single psychiatrist on the island, and appointments with a psychologist are provided by two NGOs, but the waiting list is 6 months long.

Since the EU-Turkey deal, the flow of refugees into Greece has slowed. Now, only a couple of hundred people per week arrive on Lesbos, whereas at the height of the refugee crisis in 2015, hundreds of people were landing every day. However, the asylum and relocation process has also stagnated. In September 2015 an EU deal was agreed to relocate 66 400 asylum seekers from Greece to other European countries. As of May 2017, the vast majority of these European countries have accepted less than a quarter of their allocation of refugees.

The result of this stagnation is that many people have been waiting for more than a year in this ‘first reception camp’. People in the camp are not provided with a date for their asylum interview in advance; asylum applicants must check daily to see if they will be interviewed that day. Refugees report that their paperwork is regularly lost, leading to frustrating delays in the asylum process. The sense of despair and frustration amongst many is illustrated by a recent hunger strike, where 10 Syrian Kurds and a Syrian...
Arab refused food for 7 days, demanding assurances that they would not be deported to Turkey, where human rights abuses against Kurds are regularly documented. Their strike ended unsuccessfully.

This lack of knowledge about the future creates an overwhelming sense of uncertainty, which can exacerbate any pre-existing psychological problems and is contributing to new diagnoses of anxiety and depression. The majority of refugees in Moria are single men, who arrive alone. The isolation and separation from family that they face reduces their ability to cope with psychological symptoms. The conditions in the camp also contribute to poor psychological well-being, porta-cabins accommodate up to 30 men each, who sleep on blankets on the floor with no privacy. The toilets are often unusable and there is often no running water.

More psychological support services are needed in the camp. Many mental health interventions have been shown to be effective in other acute refugee emergencies. These include a coordinated approach to provision of psychological first aid, population screening to identify those with severe mental illness, and capacity building within existing psychiatric care services. However, these are just temporary solutions.

A more sustainable and long-term solution would be to improve the asylum and relocation service so that applicants are processed and moved on from Lesbos in a timely manner. Although processing asylum applications is legally the responsibility of the Greek authorities, Greece should not have to shoulder the financial burden of this task alone. As Europe becomes more inward looking, the refugee crisis is slipping from the headlines and it is becoming easier for other European leaders to avoid sharing this financial responsibility. As medical professionals we have a duty to advocate for the rights of our patients. In this case, this means demanding a political solution to an increasingly complex medical problem.
What lies ahead: the role of entrepreneurship in India’s rising public health sector

Chintan Maru

India’s deep pool of entrepreneurs has launched countless disruptive businesses from the Bay Area to Bangalore. How can India attract this talent to tackle the country’s formidable public health challenges?

India’s health industry is projected to grow fourfold in one decade, from $70 billion in 2011 to $280 billion by 2020. Yet we have reason to question whether this tremendous investment will improve outcomes. In India’s booming corporate hospitals, physicians meet revenue targets by peddling procedures on questionable medical grounds, and in rural areas, countless “quack” practitioners prescribe antibiotics and steroids for the common cold. The public sector, meanwhile, has made important investments in health insurance, yet these programs cover hospital stays but not outpatient care, driving utilisation of high-cost acute care instead of prevention.

To achieve higher value healthcare, India will need to transform core elements of its health system: how money flows; how resources are distributed; what incentives motivate patients, providers, and payers. While the government leads health system design, the private sector can also play a role in shaping the system.

Entrepreneurs, with their capacity for rapid experimentation, are well-positioned to help determine how to increase health outcomes achieved per rupee invested. Yet left to market forces alone, entrepreneurs will not address these systems challenges. This post explores the question: How can India tap the potential of its entrepreneurs to address the country’s most important health systems challenges?

Corral resources around the biggest public health priorities.

What the entrepreneurial ecosystem lacks is a sharp strategic focus. As a result, we see few startups tackling the most important health systems challenges. (Figure 2 offers preliminary hypotheses on what these priorities might be.) At least two factors drive this.

First, each of the dominant incubators and impact investors work across several sectors; perhaps this breadth has prevented them from articulating a public health strategy. They evaluate the existing pipeline of entrepreneurs and have a rigorous diligence to identify the highest potential among them. An implication of this approach is that their portfolios may generate reasonable returns, but
their entrepreneurs may or may not address public health priorities. Second, left to market forces, entrepreneurs tend to develop point solutions—ones that address narrowly defined problems and do not require the involvement of complex stakeholder groups. While this reduces a business’s risk profile, it also limits its ability to influence a health system. It’s easier to design and deploy an app or medical device, for example, than to alter how physicians are incentivised.

To strengthen India’s social entrepreneurship ecosystem, there is an opportunity for leaders in the private, public, and social sectors to take a more proactive stance: to signal to entrepreneurs the highest priority challenges and then to corral resources around those priorities.

**Invest in and attract talent to businesses that serve the underserved.**

India has experienced a surge in startup-driven healthcare innovation. Healthspring is transforming primary care delivery. Life In Control is re-imagining how physicians and patients jointly manage chronic diseases. Practo is establishing a platform that mediates data, communication, and payments between payers, providers, and patients; and it may become the IT infrastructure on which a generation of startups builds new solutions. These enterprises make important contributions, but their reach is generally limited to the urban upper classes, where their investors see a clearer path to profitability.

There are glimmers of activity elsewhere that demonstrate how entrepreneurs can meet the needs of the underserved. LV Prasad Eye Institute provides world-class eye care for both rich and poor and is now extending its reach to rural areas. Noora Health empowers caregivers to support their sick family members in the hospital, reducing re-hospitalisation rates and expanding the human resource capacity of short-staffed government hospitals. Incubators like Villgro and N/Core and impact investors like Aavishkaar and Unitus provide training and patient capital that enable social entrepreneurs to focus on serving poor communities. Efforts like these should be applauded and built upon.

**Engage the government in the path to scale.**

Health systems, one might argue, should be designed by public sector players who are responsive and accountable to democratic governance. Yet organisational and political constraints often prevent those stakeholders from leading innovative efforts because they are inherently risky and require the latitude to learn, fail, and pivot.

The social entrepreneur is well-positioned to lead such innovation. But she, too, faces a dilemma: Who is the customer for social innovations intended to reach those at the “base of the pyramid”? In India, the government is meant to finance health for the poorest and therefore the entrepreneur who wants to tackle the most important health systems questions must recognise the role of government in its path to scale.

Two examples, both in their early stages, are testing the potential of private-public partnerships. Yeshasvini Health Scheme, a collaboration between Narayana Health and the government of Karnataka, is an insurance model that covers both inpatient care and outpatient consultation for farmers. The government of Jharkhand has collaborated with HealthMap Diagnostics to develop and manage a network of radiology providers across the state. Entrepreneurs will need to find new ways to engage the government for India to realise the full potential of healthcare entrepreneurship.

If India’s entrepreneurs begin to solve health systems challenges, their ventures can make important contributions at the global level. The heterogeneity of India’s health system provides a useful laboratory to test how new ideas perform in a variety of environments. It is home
to megacities and one of the world’s largest rural populations. There are some states, like Uttar Pradesh, where healthcare is dominated by the private sector, and other states, like Andhra Pradesh, that are growing the role of the state government in healthcare. As a result, a new generation of entrepreneurs solving health systems challenges in India can generate insights useful in countries as varied as Nigeria, Indonesia, and Ethiopia.
Safer prescriptions for the elderly: challenges and solutions from India

Nilima Kshirsagar

Older people have poor access to healthcare in developing countries. On May 3, 2017, the Indian Government proposed a uniform age for social welfare schemes for senior citizens. This makes administrative sense, but older persons vary widely in their health and function, a lesson from an IUPHAR SAC ACCP expert panel discussion held in Mumbai, India on April 30, 2017 on the factors influencing safe prescribing for the older patient. We’d like to report the findings and recommendations of this Panel in the hopes that they will benefit the older members of our societies.

The elderly population (aged >60 years) is expected to increase globally to over 2 billion in 2050. By 2050, the elderly will make up 17% of the population in India and 32% in China—exceeding the percentage of children below 14 years. These growing numbers create an increasing urgency for health policy that more clearly addresses the issues of health care accessibility to this population as the elderly carry more weight in global societies. Our experiences in and with the Indian health care system illustrate the state of health care access for the elderly in a large developing country.

Current status and gaps

In India, 28.3% of older people in rural and 36.8% in urban areas suffer from one or more diseases: non-communicable disorders, under-nutrition, locomotive impairment, and re-emerging infections. Two thirds of the Indian elderly population live in villages, half are of poor socioeconomic status and of these 70% are women, all of which further jeopardises their health status and access to care. The focus of public health in developing countries has been maternal and childcare and infectious diseases thus far, but as the proportion of the elderly in the global population starts to increase, priorities need to shift.

Insurance

The 2017 Indian national health policy emphasises the provision of health care and insurance by providers other than the state. But insurance covers only a few conditions, and only a small part of the population: older citizens are
Problems with medicines
Over-prescribing, under-prescribing, and potential interaction with herbal products are of concern in the elderly, who show changes in drug disposition and action, and who can find it hard to use formulations and packaging unmindful of failing eyesight and declining dexterity.

International guidelines make recommendations on medicines for older people. Indian drug regulation requires prescribing information (in package insert) on use of drug in special populations including geriatric, but there is no provision to design package or label specifically for the elderly.

Clinical trials and medicines
Clinical trials typically include patients aged 18–65 years, so that information on rational use in the elderly above 65 years is absent. While international guidance urges investigators to avoid arbitrary upper age limits, the USFDA does not mandate representative samples of older people. Schedule Y of the Indian Drugs and Cosmetics Act (DCA) requires inclusion of older subjects in phase 2 and phase 3 trials if the disease affects elderly people but does not require trial results to be disaggregated by age.

Medical education
The Medical council of India (MCI) mentions geriatric disorders and management in its undergraduate curriculum knowledge domain, but does not specify skills specifically required to treat the elderly. In India, speciality geriatric training posts constitute only 0·9 % of the total for medicine and paediatrics. The Medical Council of India’s Vision 2015, an excellent document that provides many new thoughts and ideas, does not specify the special needs of the elderly.

Recommendations for health care regulations
Recognising that there is a need for a holistic societal approach for older people, the panelists recommend that:
• Health care policy makers focus on health care for elderly.
• Regulators require suitable packaging and package inserts for drugs commonly prescribed in older patients, as is done for children.
• Industry develop products and formulations suitable for older people.
• Medical insurance for the older individual become part of a comprehensive family insurance policy, perhaps by allocation of part of companies’ corporate social responsibility (CSR) budget to fund treatment for older people.
• Medical, pharmacy, and nursing councils revise curriculum to provide for the increasing older population. Competency-based undergraduate curricula should incorporate skills needed for care of elderly, specifically avoidance of medication errors and enhanced medication safety. The prescribing skills assessment developed by the British Pharmacological Society with the UK Medical Schools Council, suitably modified for local need, could be a part of the exit exam.
• National and regional population pharmacokinetic studies be performed, based on physiological status, not chronological age.
• Evidence for phytopharmaceuticals and Alternative Systems of Medicines (ASMs) should be established.
• A database of the older population should be created and maintained.

The proportion of elderly people in the population will continue to increase as social and economic conditions and health care improve in developing countries. Suitable regulations for training, insurance, services, and research need to be planned now to ensure that the elderly are well looked-after, starting with, we believe, the development of medicines and strategies for rational therapeutics in older people.
Why efficiency savings shouldn’t be a last resort: lessons from Uganda

Tafara Ngwaru

Governments across the world are facing increased pressure to provide better health care. Greater public demand for improved services, a higher number of global health-care targets and a drive towards universal health coverage, are all contributing to this growing pressure. How do we achieve this, though?

Increasing expenditure is one of the most obvious answers. In practice, however, the idea of spending more to get more isn’t always so straightforward—especially in lower income, resource-constrained countries where competing budgeting priorities are a constant issue. Policy makers in these countries face a zero-sum conundrum—spending more on health could mean taking money away from education systems, for example, negatively impacting the numbers of children who can access schooling—how can policy makers justify this to their electorate?

Moreover, throwing financial resources at an issue doesn’t automatically translate into improvements. In some cases, considerable amounts of money are already being allocated to health care but a myriad of other country-specific political challenges to reprioritising this money within the health system means that the expenditure is having little discernible impact.

Another option is to explore ways of using current levels of health expenditure better. Perhaps one of the most overlooked ways to increase fiscal space for health is ‘technical efficiency’—essentially getting more for the same amount of money. In theory, this option for providing quality health care at the lowest possible cost is a win-win situation, but policy makers need to mindful of a number of pitfalls that can derail the drive to improve efficiency.

Identifying waste

Before efficiency savings can be made, it’s important to understand where current inefficiencies lie—no mean feat. It’s notoriously difficult to establish systematically how much ‘waste’ manifests in a health system. Basic ratio analysis techniques (eg, comparing the number of medical staff to the number of patients treated during the year across countries) and advanced efficiency approaches (such as data envelopment analysis and stochastic frontier analysis) only tell you how well you are performing relative to others. They may give a general indication of inefficiency, but cannot specify how much waste is present, or where.

Healthcare accessibility for the elderly is a multisector effort that must be prioritised in the years ahead
These technical difficulties can be further compounded by an absence of reliable data. Detailed estimations of waste can require paralysing levels of high quality data that are unavailable in many contexts.

Elusive solutions

Even with a clear identification of improvement areas, rectifying wasteful practices can span the domains of many stakeholders. Ministries of health, planning, finance, public service and social welfare, as well as direct donor agencies, may all have a role to play in activating a sufficient response. Each ministry and organisation will have its own priorities; these may conflict, making coordination especially difficult.

As if this weren’t enough of a challenge, the governance and accountability mechanisms to implement and track reforms across that many ministries, departments and agencies are often absent—indeed, this has often helped lead to the wasteful practices in the first place.

Jumping the hurdles

So how to navigate these challenges and make meaningful efficiency savings? In Uganda, we’ve been working with the Uganda Aids Commission to develop and implement a methodology that could be a first step towards institutionalising efficiency improvements in health. It is also applicable in other, similar contexts and useful as a guide for practitioners attempting to navigate this difficult, but potentially hugely rewarding, field.

Based on the premise that we can only manage what we can measure, our nascent methodology first looks at all the available sources of evidence—both quantitative and qualitative—to try to identify the specific causes of inefficiency. Importantly, this ‘deep dive’ approach involves talking to key stakeholders about what they think the main causes are—an essential step towards securing their buy-in for any future reforms within the sector.

Prioritisation is another key tenet of the methodology—rather than getting overwhelmed and spreading limited resources too thin, we recommend focusing on efficiencies that are technically and politically feasible within a particular time-frame, helping ensure some significant early ‘wins’ that can give momentum to further savings. The impact of these more immediate successes will also be enhanced through formalising the accountability framework around decision-making, helping ensure that all-important inter-ministerial collaboration.

While still ongoing, the application of this methodology in Uganda has resulted in the identification of between $38 and 69 million of potential efficiency savings between 2017 and 2019—a significant sum that could contribute towards improved health care for more than 39 million people.

Out of the shadows

Policy makers and the international community as a whole need to recognise that technical efficiency can be an important contributor to achieving universal health coverage and not just a last resort when the money has run out. While there is no silver bullet to improving efficiency—and a number of pitfalls to avoid—these are not good reasons for it not to be considered a best-practice approach to increasing fiscal space for health, before or alongside additional expenditure. It’s time for technical efficiency to step into the limelight.
Oxygen access in developing countries: a public health challenge

Bernard Olayo

In November, 2016, I met 3-year-old Barack Obama’s mother, Mary Atieno, who was all smiles as she watched over her son at the Akala Health Center in Siaya County in western Kenya. Just a few hours earlier, he was struggling to stay alive, one breath at a time. He had been admitted at the hospital suffering from severe pneumonia. The young Obama, named after the former US president, was only alive because he had access to oxygen therapy. Too many children—and adults—across the developing world are not so fortunate.

Oxygen is taken for granted by those living in developed countries. But in lower- and middle-income countries, oxygen is often not available to everyone fighting to breathe. Health facilities outside of central hospitals often don’t have funds or technology to procure oxygen and health workers don’t know how to use it.

For many, local health centres—like Akala Health Center, which is located 50 km from the nearest hospital with oxygen capability—having oxygen on hand seems like a pipe dream for local health officials. Staff at Akala used to send two to three children with severe pneumonia on the long journey to the referral hospital each day. Many died before reaching these better-equipped facilities. Akala has overcome this hurdle, but most health clinics have not.

For more than 30 years, oxygen has been listed on the World Health Organization’s (WHO’s) essential medicines list—but only as part of anaesthesia medication. The use of oxygen as medicine as we know it today was only accepted in 1962, following its first known experimental use on the battle fields of the First World War for soldiers with gas poisoning.

Today, that is changing. The 21st panel of the WHO Expert Committee on the Selection and Use of Essential Medicines decided that oxygen is essential medicine for patients, especially children, with low oxygen levels in their blood, known as hypoxaemia. This decision has the potential to save the lives of many of our most vulnerable patients, such as newborns, children, and pregnant women.

The impact of this decision will be life-changing, but it will require developing countries to find sustainable options to fast-track access to oxygen outside of hospitals and at rural health clinics.

We cannot simply take technologies from Europe or the USA and apply them without thought. Hospitals in developed countries have wall outlets supplied with liquid oxygen from frozen storage tanks. This approach is too expensive and complex for most developing countries.
where oxygen is supplied mainly using pressurised oxygen cylinders and often moved from bed to bed as needed.

This approach is also expensive to use in developing countries because of inefficient and very expensive supply chains and poor infrastructure, including bad roads and long distances between oxygen production and clinics. Frequent supply shortages that follow lead to poor quality of care. Oxygen concentrators, another approach to providing oxygen in developing countries, are also used frequently, but they require reliable power supply and maintenance.

Getting oxygen to these clinics sounds like a daunting challenge, but we know it can be done and it will save lives. In fact, oxygen on site has led to a major reduction in referrals and health workers are able to save the lives of many children with severe pneumonia, for whom rates of death from hypoxaemia increases by up to five times.

One programme that works—and serves the Akala Health Center—is Hewa Tele (which means “abundant air” in Swahili), an organisation working in east Africa to close the oxygen gap.

This partnership is not dependent on electricity at clinics because it relies on a local production and distribution model within the district using simpler and more reliable technology—a hub and spoke model. Because the production is done close to where it is needed, the cost to the health facilities is reduced significantly. It successfully addresses the core barriers holding back the proliferation of oxygen usage in low-resource settings, such as a lack of local supply, the high cost for local users, a lack of political will and a lack of knowledge of how to use oxygen by health workers. By ensuring local government and hospital stakeholders are partners in the initiative, Hewa Tele is able to benefit the community and enable high-volume public hospitals to serve more patients from lower-income categories.

In less than 2 years, just one plant has been able to expand from covering Siaya County in western Kenya to cover a population of 3 million people over seven counties. The WHO’s decision to classify oxygen as an essential part of treatment for children is a major step forward to reducing child deaths. We need to ensure that this decision at the global level reaches clinics in rural areas by adopting strategies that rapidly expand access.

With the potential to save as many as 150,000 lives of newborns, children, and pregnant women each year, looking to successful local solutions is an essential first step.
The Global Fund: where next?

Richard Seifman

The Global Fund to fight AIDS, Tuberculosis and Malaria is still searching for a permanent Executive Director to replace Mark Dybul, whose new post at Georgetown University was announced last week. The question going forward is what the new leader’s priorities and vision, and the role of the Global Fund, should be in the next 10 years, and what the leader can offer uniquely in experience and institutional capacity. Here are a few thoughts.

The Global Fund to fight AIDS, Tuberculosis and Malaria is still searching for a permanent Executive Director to replace Mark Dybul, whose new post at Georgetown University was announced last week. The question going forward is what the new leader’s priorities and vision, and the role of the Global Fund, should be in the next 10 years, and what the leader can offer uniquely in experience and institutional capacity. Here are a few thoughts.

The Global Fund has much to offer in pursuing the Sustainable Development Goals on health, particularly with regard to infectious diseases and pandemics, which are increasingly recognised as being one of the principal threats to all humanity. It now has 15 years of experience in intensely looking at the three diseases, with grant support in the order of US$4.0 billion annually. Its focus on science, surveillance, testing, response, and performance monitoring is relevant to how and what is needed to deal with as-yet-unidentified infectious diseases posing public health threats within a country and beyond its borders. Over time, the Global Fund has evolved from an organisation entirely anchored in specific disease responses to one recognising the broader context, the need to contribute to cross-cutting elements to create more resilient health systems, while retaining its focus on the mandated diseases. The need for an efficient laboratory health monitoring system, supply chain management, competent human resources, community engagement, and efficiency and effectiveness decisions which make better use of financial resources are not necessarily unique issues for the Global Fund, but given the sharp focus on disease response, it is special and more detailed in its grant proposals.

The Global Fund has broadened its target beneficiaries to include key populations and vulnerable groups such as migrants and refugees, recognising that there are challenging operational environments that need to be integrated into a country or regional disease approach. This means that disadvantaged populations, often not Government priorities with no vote or little economic power, get attention and therefore improve the likelihood that containment, elimination, or eradication may be possible—for the benefit of all.

The approval of a Global Fund grant proposal begins with a country dialogue, development of a funding request by a uniquely Global Fund mechanism—the Country Coordination Mechanism (CCM), then review by an independent Technical Review Panel (TRP) and ultimately by...
the Global Fund Board. The CCM is comprised of both internal and external stakeholders on the ground, while the TRP is composed of experts who are specialists but not living in or working on the country submitting the proposal. Thus there is both formal ground truthing as well as objective and critical analysis of a funding proposal before it gets to a final approval stage. The Global Fund has also taken into account the need to be creative with its financing instruments and has developed funding tools which go beyond its basic grant proposal to allow for innovation with its catalytic and matching fund instruments.

With years of programme experience and a tested mechanism, what can or should a new Global Fund leader do which would be different?

- Look at how the Global Fund can contribute to the increasingly emerging global high priority challenges set forth in the WHO International Health Regulations and determinations of public health Emergencies of international concern
- Look at climate change adaptation and its potential effect on the three diseases and what needs to be included in country proposals to prepare for possible eventualities
- Integrate refugees and migrants and other vulnerable groups more proactively in the development of grant proposals
- Emphasise that investments in resilient and strengthened health systems must be part of all Global Fund disease investments but complementary to other institutions engaged in system improvement
- Revisit the private sector, both for-profit and not-for-profit. It is important in the vast majority of national health sectors and needs to be a critical element of Global Fund proposals across the continuum of health provision
- Explore new funding mechanisms which are possible for disease-specific financial resources, such as social impact bonds and customised insurance programmes
- Offer its CCM and TRP modalities to other major disease outbreaks such as avian influenza, the Zika virus, Middle East Respiratory Syndrome, or at the least, share the processes developed over time

In recent years, the Global Fund has been highly successful by not operating in the public eye, the somewhat “quiet” development financing mechanism, so to speak. Others, such as the Gates Foundation, GAVI, regional multilateral banks, and the World Bank have largely occupied this space in the public domain. Now, as we have seen in the political arena in the 21st century, communication is essential in conveying a message and garnering financial and technical support. When a new Global Fund leader comes on-board, having a review of and then developing a communications strategy should be among the first priorities. When you have built something that is very good, it needs to be shared both with the public and practitioners, for the benefit of all.
In Yemen and other conflict zones, hospitals remain a target

Christine Monaghan

When a paediatric hospital in Yemen was hit in September, 2015, two infants in incubators died from lack of oxygen during the evacuation. In another incident, a child died when a hospital lost power and there was no fuel for the generator. And when a 13-year-old boy suffered burns in an airstrike, his stepfather had no way to get him to a hospital, so the best he could do was apply honey, toothpaste, and ointment to his wounds.

Such horrific stories are an everyday reality in Yemen, which has been called the world’s largest humanitarian crisis. May marked the 1-year anniversary of the UN Security Council resolution that demands attacks on hospitals and medical personnel. But there is a dangerous lack of enforcement of this important document—in Yemen and elsewhere. Afghanistan and Syria have also seen a steady stream of these unlawful attacks, which multiply the effects of the war and worsen children’s health.

In a new report, Watchlist on Children and Armed Conflict and Save the Children document how the Saudi Arabia-led coalition, the Houthis, and other armed groups have committed at least 160 attacks on medical facilities and staff in Yemen over the last 2 years. The destruction of the country’s health-care system—a cruel tactic of war—has reached the devastating levels of Syria, but much more quickly. We are calling for the coalition and others to be held responsible for these attacks, and the USA and others to stop selling arms when they could be used for such violations.

This is all taking place in a country with one of the world’s worst indicators for children’s and maternal health. 2 years of conflict, combined with deliberate attacks on hospitals and a de facto naval and aerial blockade, are compounding already extremely challenging conditions. The country is on the brink of famine, and warring parties are making the ongoing catastrophe worse by targeting places that could ease the suffering: hospitals.

Children are among the victims, as these attacks have contributed to higher rates of injury, disease, and death, and compromised their access to lifesaving treatment. A child in Yemen dies of preventable diseases every 10 min, according to UNICEF, and Save the Children has reported that the lack of medical supplies and staff has caused an additional 10 000 preventable child deaths per year since 2015.

Fewer than half of Yemen’s hospitals are functioning, and those that are face severe shortages of medicine, equipment, and staff. One emergency room supervisor told us most medical professionals are in constant fear.

“The hospital has been targeted directly since the beginning of the war, so we are suffering from fear and panic,” he said. “We don’t feel safe as long as the hospital is subject to shelling. Three weeks ago, the roof of the staff building inside the hospital compound was hit by a mortar.”
In addition to hospital closures, 160 facilities providing nutrition services have closed, as have two of the country’s six blood transfusion services. Ambulances have also been targeted—at least 25 of 131 of them have been damaged or destroyed since the conflict started. A doctor in Taiz City told us many patients sustain complications because they are either carried to a hospital or transported on motorbikes. A nurse told us many parents cannot get treatment for their children.

“For cases like dialysis, the parents can’t afford the money for private hospitals or the transportation to public hospitals in Sanaa,” he said. “In many cases, kids die because of this.”

Blatant impunity fuels the vicious cycle of targeted hospital attacks, which is contributing to these gruesome statistics. We are calling on UN Secretary-General António Guterres to name the Saudi Arabia-led coalition among those responsible in his annual report, due later this year. In his 2016 report, then-Secretary General Ban Ki-moon blacklisted the coalition, only to later remove it after admitting he caved to pressure from Saudi Arabia. Guterres must not make the same mistake. Calling out the coalition is the first and critical step towards accountability.

Countries supporting the coalition must immediately stop the sale or transfer of any weapons if there is a risk they will be used for attacks on hospitals and other civilian infrastructure. In a conflict where hospitals are deliberately targeted and children are dying as a result, these steps are the very bare minimum.
The epidemic of motorcycle road traffic injuries in the northeast of Brazil

Gabriel Andreuccetti

We are rapidly approaching the deadline established by the Global Plan for the Decade of Action for Road Safety 2011–2020, which aims to diminish road traffic fatalities worldwide. This issue is particularly relevant to low- and middle-income countries, where 90% of all road traffic deaths occur in the world. Brazil, the largest country in Latin America, was expected to lead the way in terms of policy actions in the region, but did the proposed strategies translate into better outcomes for traffic safety in the country, especially regarding road traffic fatalities and injuries?

The Global Plan recommended a series of road safety strategies and policy actions, urging member states to take advantage of effective strategies already shown to reduce road traffic’s most severe consequence: a death. Such actions were to include building road safety management capacity; improving the safety of road infrastructure and broader transport networks; further developing the safety of vehicles; enhancing the behaviour of road users; and improving post-crash response. Brazil’s actions have been largely legislative. In 2008, Brazil reduced its blood alcohol concentration (BAC) limit for drivers from 0·06% to 0·02%, towards full implementation of a zero-tolerance policy in 2012. It also introduced a substantial rise in fines for various other risk behaviours such as speeding and non-use of seatbelts and helmets.

Unfortunately, the news we bring from the northeast of Brazil is not positive. Arapiraca, a city with little more than 200 000 inhabitants in the state of Alagoas, saw a road traffic fatality rate of 76 per 100 000 inhabitants in 2015. The city of Arapiraca main trauma emergency facility attends almost two traffic-related injuries per hour, with more than 80% of injuries involving motorcycles, as detected by our research team during a short follow-up of six consecutive days at the trauma unity (264 patients admitted between the morning of February 24 and the evening of March 1, 2017).

Moreover, more than a third of the patients interviewed and breathalysed by our team was under the influence of alcohol, with almost 80% of drunk motorcycle drivers presenting levels above the criminal BAC limit of 0·06%...
(the limit above which driving bans and jail sentences are incurred). And these figures are probably underestimated, since only 68.7% of the drivers approached during our study period accepted to be submitted to a breathalyser test. Additionally, the admission rates during the holiday period in which our study took place were below the average admission rates over the rest of the year.

While the national scenario offers different realities and even small progress towards the reduction of road traffic fatalities in capitals such as Sao Paulo, the health burden attributed to road traffic injuries in the country has reached an alarming proportion, with a traffic fatality rate at the national level around 20 per 100 000 population since the beginning of the decade and rising trends in hundreds of other “Arapiraca-like” cities. And all of this happening in a decade in which Brazil went through the worst economic recession in its history (traffic fatality rates usually present a decline in slower economic periods).

The perverse mixture between a patchwork of strategies that did not involve relevant societal members (including traffic specialists and medical researchers from the field) and the decreasing budget for many relevant public services (road infrastructure, health services, and enforcement of current legislations) has resulted in a more precarious urban setting for drivers in many cities. Furthermore, in cities where urbanisation is rapidly growing without the necessary infrastructure provided by the state, the motorcycle that once represented mobility progress to many people who could not afford cars or count on public transportation, now represents a huge burden to the public health system, with staggering levels for both drunk driving and injuries.

It is a common saying that whenever a social problem claims popular attention, a new law is created as a solution. The case for what appears to be the current traffic scenario in Brazil speaks against this kind of approach, especially after multiple attempts to modify the legislation have failed to achieve a long-lasting behavioural change among drivers, with drunk driving being one of the most notable examples at the national level.

The unfortunate news is that the problem continues in most regions of the country, and has not stopped for the last 20 years. In the end, policy action without guaranteed state support for basic improvements in road safety infrastructure has not worked in Brazil. We should not wait for the end of the decade to acknowledge this fact and change the direction of our next actions.

This is a joint post with Vilma Leyton (Department of Legal Medicine, FMUSP, Brazil), Julia Maria D’Andréa Greve (Department of Traumatology and Orthopaedics, FMUSP, Brazil), Heraclito Barbosa de Carvalho (Department of Preventive Medicine, FMUSP, Brazil), and Ana Paula Nogueira de Magalhães (Nursing Department, Federal University of Alagoas, Arapiraca, Brazil).
Resisting resistance: how the G20 can foster political will to tackle antimicrobial resistance and turn the tide on tuberculosis

Michelle Imison and Leila Stennett

Humanity has been contending with tuberculosis for thousands of years. But although it can be both treated and prevented, progress against the disease continues to be frustratingly slow: tuberculosis is once again the world’s leading infectious-disease killer. Adding to this urgency is the key role of tuberculosis in antimicrobial resistance (AMR): tuberculosis is responsible for around a third of AMR-related deaths, and is the only major airborne drug-resistant infection. Political buy-in at this year’s G20, backed by financial commitment, will be a crucial step in combating tuberculosis and antimicrobial resistance.

Tuberculosis incidence and mortality are slowly beginning to decline worldwide, including in India, the nation with the largest number of cases. However, improved global surveillance data indicate that the pandemic is larger than previous estimates had suggested (perhaps 4 million cases are ‘missed’ annually), and that tuberculosis rates need to fall much faster to reach milestones set by WHO’s End TB Strategy, which covers the period 2015–2030.

There are several reasons for the disconnect between this severe epidemiological burden and the lack of political engagement tuberculosis has previously secured. Because this still-stigmatised disease can be cured, as tuberculosis-control efforts have tended to be vertical and top-down, and there has not historically been a strong push for community involvement in tuberculosis research and programming, few survivors have stepped forward as public advocates for people affected by the disease. This political invisibility is especially apparent when compared to what has been achieved in relation to HIV, through community engagement and empowerment, within a comparatively short period.

There are signs, however, that the political landscape of tuberculosis might be shifting. Alongside promising new drug regimens and diagnostics, and potential new mechanisms to finance and co-ordinate their development, there has been an increase in the political will needed to fight tuberculosis, including through the advent of the Global TB Caucus, with its active regional and national parliamentary networks.

The coming months present a series of major opportunities to catalyse this political will. These include this year’s G20 meetings, which will address antimicrobial resistance.
resistance (AMR) (of which tuberculosis is a major component), a Global Ministerial Conference on Tuberculosis this November in Moscow and, in 2018, a UN high-level meeting on tuberculosis.

Gaining and sustaining this political attention for tuberculosis has been an intense and ongoing process, but there are urgent reasons for governments to attend to the disease now. In addition to the global public health toll outlined above, tuberculosis is both a cause and a consequence of poverty—as Archbishop Desmond Tutu so aptly expressed it, “TB is the child of poverty but also its parent and provider”.

Tuberculosis has major economic and social impacts for families, communities, and societies globally. Worryingly, it is most prevalent among people of working age and, with numerous rapidly-growing economies taking their place on the world stage, 54% of tuberculosis cases are now to be found in G20 countries. Since G20 member states also underwrite more than 90% of scientific research and development (R&D) on the disease, a G20 priority for tuberculosis R&D makes sense—particularly when only a third of the funds needed for tuberculosis research worldwide are currently in hand.

This year the G20 is again discussing AMR, continuing an agenda agreed at the 2016 G20 Leaders’ Summit in China. Combating AMR will require a range of steps, including enhanced investment in the development of new tools for the prevention, diagnosis, and treatment of tuberculosis, and global civil society has been working with our domestic decision-makers and national TB Caucuses to help ensure these commitments are realised. AMR could have serious consequences for future global health security and the viability of international development more broadly.

The Berlin Declaration, released at the end of May following the first-ever meeting of G20 Health Ministers, is a promising step. It focuses on three areas of work over the coming year: global health crisis management, health system strengthening, and AMR. The Declaration particularly recognises the threat of drug-resistant tuberculosis within AMR, acknowledging the need for new tools against the disease and looks forward to the Moscow Ministerial Conference and UN high-level meeting. Efforts are now underway to see that tuberculosis, as an element of AMR, also remains in the G20 Leaders’ Declaration following their meeting in July.

The political will needed to address tuberculosis has been slowly building around the world. AMR is increasingly a global reality, and has both economic and health implications for many G20 countries. Everyone stands to gain from the development of new antimicrobials and other tools that might prove useful against a range of infectious diseases, including tuberculosis. This year’s G20 gatherings are an unmissable opportunity to unlock the R&D funding that will develop these tools and, in so doing, also help ensure that we do indeed end tuberculosis by 2035.
2 years on: when democracy and tectonics collide

Duncan Maru and Shiva Raj Mishra

The earthquakes in Nepal killed nearly 9000 people, destroyed over 600,000 homes, displaced more than 1 million people, and destroyed over 1200 public health-care facilities. Given the technological tools of the 21st century, such destruction is almost entirely the result of poor planning and poor enforcement of building code regulations. A product of economic exclusion and poor governance as much as tectonic misfortune, Nepal's unnatural disaster has proved to be the greatest challenge the government has faced since formally declaring itself the Federal Democratic Republic of Nepal on May 28, 2008.

On April 25, 2015, the house of a 28-year-old woman, whom we shall call Sapana, was destroyed. Sapana had married over a decade prior and had moved from her home in the eastern hills to her husband's district in central Nepal. Like over 20% of adult Nepalis aged 16 years and above, she did not have a citizenship card, a requirement to receive government financial support to rebuild her home. A husband’s support is typically required for women to get citizenship cards, yet she had recently been divorced. With the help of neighbours and advocates, after 2 months of continuous struggle, she received a citizenship card and subsequently did receive the first instalment. She has been unable to build, however, and, as the 2-year memorial of the great tragedy passed, was still living in a temporary shelter.

There is a striking continuity in both the political dynamics and the population health challenges faced by Nepal before and after the earthquakes. The earthquakes exacerbated existing gaps in the prevention and treatment of malnutrition, mental illness, and chronic disease. In the earthquake’s aftermath, a new constitution was signed that inflamed long-standing ethnic tensions. Protests erupted along the southern border, precipitating a 5-month border blockade. The financing and execution of the recovery and rebuilding stalled, and a second humanitarian crisis (almost completely unreported in the international press) ensued, as medicine, food, and fuel supplies were cut-off.

All of these tragedies need to be situated in Nepal’s historic transition from a monarchy to prime-ministerial system. The first movement towards democracy brought about a constitutional monarchy in 1990 that attempted to right the injustices of a centralised, feudal state. Yet the changes ushered in as a result of this first movement were neither fast nor effective enough to sustain peace. In 1996, a civil war ensued that lasted 10 years, claimed over 17,000 lives, and ultimately, via the second democracy movement, led to the fall of monarchy.

The new republic inherited a centralised state that remains a liability in realising the deeper opportunities of democratic governance, in both health and other areas.
To give one example in the health sector, personnel transfers in even the most remote areas (usually the responsibility of midwives and other mid-level practitioners) are typically executed by high-level officials in the Ministry of Health. There is limited flexibility in organisational structure or financing from one district to the next, with districts receiving resources allocated by national vertical programmes like safe motherhood or essential medicines. This is problematic in one of the most linguistically, culturally, and topographically diverse countries in the world. In an area of only 56 000 square miles (approximately the size of the American state of Iowa), over 120 languages are spoken and the climate spans the hot, tropical Terai in the south to the world’s highest peaks in the north. In addition, decision-making structures frequently remain favourable to privileged castes and follow patterns of patriarchy and patronage.

While the newly signed constitution of Nepal places health as a fundamental right of all citizens, it has been deeply struggling in its implementation. When that most basic of population health needs—safe housing—was devastated, the response of the centralised state was predictably slow. Furthermore, public financing, in a country with a per capita growth in domestic product of approximately US$700 per year, is severely limited. For its part, the international community has not followed through on its commitment to help meet the financing gap—with only $2·3 billion allocated to Nepal of $4 billion committed, and more than 50% of that in the form of loans. By the time of the second memorial of the earthquakes, less than 5% of the 626 695 houses destroyed have received the full grant of 300 000 Nepali rupees (approximately $3000) to which they are entitled, and only 3·5% of damaged houses have completed reconstruction. The process is particularly difficult for people, like Sapana, who come from marginalised ethnic groups and typically do not have citizenship cards. Frustrated, people have started rebuilding houses on their own, unsafe construction being the predictable result.

The reality with respect to food security has been equally tragic. Despite being a largely agrarian nation, Nepal is a net importer of food and has one of the highest prevalence rates of stunting in the world. During the displacement and the immediate response food aid arrived late, and further, a significant proportion of the food that did reach the villages was pre-packaged, high in carbohydrate, low in nutrients, and of poor quality.

Health-care services, like housing and food, are the product of the same dynamics of centralised national power and local patronage. Inequity in access to health care ran deep prior to the earthquakes, with a huge urban-rural and rich-poor divide. The rapidly expanding private sector, which constitutes over 56% of Nepal’s health-care market, offers services of varying quality (highest in urban areas), and leads to high out-of-pocket payments. The earthquakes, both by differentially ravaging the public sector and by increasing household rebuilding and recovery costs, have left limited financial space for families to seek out health services. Meanwhile, Nepal’s experiment with national health insurance, aimed at expanding health-care access and reducing medical impoverishment, has stalled amidst the governance and political challenges following the earthquakes.

In this context, the ongoing local elections are hopefully a watershed moment. Over 700 heads of local structures (257 mayors and 462 village council heads) will be elected, who may place greater accountability and autonomy in local institutions. The success or failure of these elections will help determine how far the state of Nepal can go in shedding itself of its centralised, feudal roots. Indeed, the rights of full citizenship for individuals like Sapana hinges on the success of a more equitable, inclusive democratic governance that is rooted in a locally-responsive state.

Those of us involved in global population health should pay close attention to Nepal’s fate. The central theme of this era of globalisation is the rise of both income inequality and the politics of exclusion. The result is often extremism and conflict that threatens the health and security of entire populations. We ignore these dynamics at our peril as we go about designing health systems, nutrition, or other population health interventions whose fundamental opportunities and risks are determined by the broader systems of power and politics.
Explaining Trumpcare: the appalling appeal

Chris Simms

On May 5th 2017, the US House of Representatives voted to repeal the Affordable Care Act (Obamacare) and replace it with H.R. 1628, the American Heath Care Act (Trumpcare) by a count of 217 to 213 (all Democrats and 25 moderate Republicans opposed the bill; all supporters were Republican).

Under Obamacare, 13 million Americans gained health insurance through marketplace programmes and another 20 million were added to insurance or expanded Medicaid role. This feat was achieved by increasing taxes of the richest 2% of the population.

A new Kaiser tracking poll (May 31), consistent with the findings from three previous polls (a Kaiser tracking poll April 4th, Washington Post-ABC News poll April 25th, and a Politico/Harvard Poll April 25th, 2017) shows that 60–65% of the public want Obamacare left in place and improved upon. The question arises as to why Republican legislators would ignore the wishes of most citizens and risk their wrath in the 2018 mid-term elections.

Part of the answer is that on May 5 these legislators wanted to avoid dispiriting the political base by a defeat of Trumpcare; passing the bill was also seen as crucial to passing tax reform; and some legislators may have been influenced by private sector interests. For example, the Koch brothers promised millions to Republican campaigns in the mid-term if they voted to repeal Obamacare.

At another level however, the answer is more complex and is one that might help answer other important questions (such as why the US is the only industrialised nation without a universal health care system, why it has the weakest social safety net of its peers, why a large portion of the US electorate is fully prepared to act against its own best interests (rather than support beneficial distributive initiatives) and, why perhaps, Trump was elected in the first place?) These questions are relevant as some version of Trumpcare will go before the Senate in the near future. The following paragraphs look at some contributing factors.

First, recent analysis shows working class (especially white) males have felt increasingly disempowered and disenfranchised by globalisation and neoliberal policies. In the US, while the wealthy have become wealthier, the real incomes of ordinary people have stagnated or declined. Even as they became increasingly marginalised, they were expected to accept cultural values that were not theirs—for example, those related to the environment, gender and racial equality, and LGBT persons. Economic loss and cultural backlash contributed to their “rage against the machine”.

Second, Prospect Theory tells us that those who feel they have not participated in the benefits of global trends or have lost benefits may be willing to take risks in making their political choices—they feel they have nothing to lose. This theory is rooted in economics and psychology, and
addresses the behavioral underpinnings of choice in the face of uncertainty. It recognises, for example, that people with poor prospects are more likely to take risks and make irrational choices by disregarding low probabilities.

Third, recent data from the Pew Research Center shows that partisan animosity has increased to record levels in the US. It is core to explaining why, for example, working class Americans continue to support Trump despite his “Cabinet of billionaires”, deregulation that will hit ordinary people, and in particular, a health bill that is explicitly against their self-interests. For example, the (non-partisan) Congressional Budget Office (CBO) estimated in a May 24 report that Trumpcare would lead to an additional 23 million uninsured Americans. Partisanship (as “tribal self-expression”) is a way of expressing multiple identities; party loyalty is bigger than any single policy. These identities are less about class or rich versus poor than “racial identity, professional identity, religious identity, even geographical identity”. Abandoning Trump would constitute a betrayal of these tribal allegiances.

Fourth, evidence suggests that left-wing economics is not the answer to right-wing populism. Trump (and his policies such as Trumpcare) appeals directly to those who see themselves living in the “domain of losses”. Yet the May 31 Kaiser Poll shows that only 15 percent of those questioned felt that Trumpcare would actually fulfil all or most of his promises—for example, “insurance for everybody”. In reality, within the US support for liberal distribution policies is greatly complicated by racial and cultural identities. “People are only willing to support redistribution if they believe their tax dollars are going to people they can sympathise with. White voters, in other words, don’t want to spend their tax dollars on programs that they think will benefit black or Hispanic people”. A PBS documentary, *The Divided States of America*, concurs and reports that the “racially charged resistance” to Obamacare came to symbolise this division in America and now Trumpcare.

These factors not only help explain the House vote to replace Obamacare with Trumpcare and set the stage for a Senate vote, but also explain the lack of a robust social safety net to protect all Americans. One week after the repeal of Obamacare in the House, conservative senators began making plans to drop millions of adults from Medicaid; indeed, the release of Trump’s budget (May 23) reveals plans for massive cuts in the range of 25–45% over 10 years. Eight years on and perhaps eight years hence, the Trump promise is one of leading the US in circles and they seem to be part of a spiral.
Zika virus and the need for pharmaceutical preparedness

Abraar Karan and Thomas Pogge

Epidemics are on the rise given globalisation, increasing vector populations, and rapid mutations of known viruses, yet our pharmaceutical development has largely played catch-up to the serious outbreaks of the past few years. While tactics such as rapid diagnostics, health systems strengthening, and epidemiologic response have attempted to mitigate the consequences of epidemic disaster, a fundamental restructuring of pharmaceutical research and development incentives is urgently needed to revolutionise our future preparedness for the next potential pandemic.

Zika virus: a failure of pharmaceutical innovation

Most recently, Zika virus is a prime example of this problem. As of April 2017, 48 countries/territories in the Americas have been noted to have Zika cases, and over 60 countries worldwide. While the public health response to Zika has been robust, thanks to lessons learned from the preceding Ebola outbreak, the questions remain: could we have been better prepared for the Zika epidemic, and how are we going to prepare for future related epidemics?

Zika virus emerged quickly, with relatively little warning given the rarity of serious epidemics from the virus in the past several decades. Without significant prior threat, there were weak incentives to develop a vaccine or therapy for Zika virus until it became a pandemic declared as a global emergency by the WHO. Now, drug development is far behind the pandemic, playing catch-up to the spreading disease without a single approved Zika-specific therapy. While control efforts, such as mosquito elimination and rapid diagnostics are essential, the need for therapeutics and vaccines is unmistakable.

Suggestions for rapid Zika therapeutic development include drug repurposing, utilising existing FDA-approved therapies to test their antiviral properties against Zika virus; the movement toward open-access data for related diseases, such as dengue, which could help researchers advance development quickly for Zika; and the utilisation of an in vitro assay for high throughput screening of vaccine/drug candidates. The anti-Hepatitis C drug sofosbuvir has been suggested for potential repurposing for Zika given an 80% overlap in the amino acids of Zika and hepatitis C virus RNA. In a screening of 774 FDA-approved drugs, over 20 showed anti-Zika virus activity. Proposals for Zika vaccine development have been multifold, and acknowledge the complexity of following routine human safety protocols given active outbreaks with potentially high mortality and morbidity.

Another avenue through which drug development could be incentivised is the FDA’s Priority Review Vouchers for neglected tropical diseases, which allow pharmaceutical companies to recoup some of their R&D costs by bringing another drug to market earlier through expedited review times. With pandemics like Ebola and Zika, the market for needed drugs develops over-night, meaning the potential for profits is not necessarily the major issue as it is for orphan drugs, for instance. The conundrum lies with the fact that this market develops only once an outbreak occurs, at which point many lives are lost before a vaccine or therapy can be developed. Advanced market commitments and compulsory licensing are other mechanisms that have been written about previously for addressing drug demands in emergency situations, such as pandemics.

Preparing for pandemics before they happen

While these approaches are important, a system of addressing pandemics before they occur is what is most critically needed. The USAID Emerging Pandemic Threats (EPT) program, started in 2009, and now extended until 2019 as “EPT-2”, was designed for the early detection of disease threats, reduction in disease emergence, and enhancement
of national response preparedness. Nonetheless, this program does not address the need for pharmaceutical investment and development in emerging pandemics that are primarily developing in Sub-Saharan Africa, the South/Central Americas, and Asia.

To truly address pandemics pre-emptively, we must create financial incentives in the pharmaceutical sector. Given that most pandemics start off as a few cases of disease primarily afflicting the poor, we must recognise that the existing paradigm of pharmaceutical research and development discourages pandemic preparedness at its earlier stages. If there had been Zika cases in affluent nations, or in countries in which tourism attracted people from developed economies, we would likely already have a vaccine developed many years ago. Thus, Zika and other pandemics are a reflection of the lack of public health attention for the poor at a global level, now manifesting more widely because of globalisation and international travel.

Mechanisms to truly re-structure the pharmaceutical patent system are relatively few, but greatly needed. The Health Impact Fund (HIF) is one such solution that has been written about previously as a truly transformative approach for developing drugs for diseases primarily affecting the poor. The HIF could have had an immense impact by incentivising early R&D efforts against Ebola and the Zika virus. The HIF is fundamentally an alternative route for pharmaceutical companies to develop medicines that would not be profitable in the traditional patent system because they treat diseases primarily affecting the poor. Funded by developed and developing countries, the HIF would offer any pharmaceutical innovator the opportunity to be rewarded according to the health impact of an innovation, provided this innovation is sold at no more than the cost of manufacture and distribution. With this reward model, diseases concentrated among the poor would become far more lucrative targets for pharmaceutical research; and pharmaceutical innovators would have stronger incentives to work on diseases like Ebola and Zika long before they begin posing a threat to affluent populations.

**Concluding thoughts**

After Ebola virus became a global pandemic, much of the retrospective criticism focused on the lack of an organised, efficient, and prescient approach to controlling, treating, and managing spread of the disease. Yet little was done by way of improving vaccine and drug development as is evidenced by our response to Zika virus. The final results of the vaccine trial were released in December 2016, nearly 3 years after the pandemic took hold, thankfully showing 100% efficacy. In the process, we witnessed thousands of deaths worldwide, a death toll that could easily have been many times greater. Similarly, we may see many more children suffering from microcephaly, or as yet unknown effects in the future before a Zika vaccine is brought to market. Even when this happens, given high R&D costs, the vaccine will be unaffordable to most developing countries without assistance from GAVI and other international agencies. Furthermore, there may not be a traditional market for a Zika vaccine if the epidemic is brought under control prior to vaccine approval. Zika virus is another urgent reminder that our global pharmaceutical incentives are in need of fundamental restructuring such that we can be better prepared for pandemics.
Safe global surgery needs effective non-technical skills

Sojung Yi and Yihan Lin

Surgeon behaviour affects the quality of care provided, patient safety, and ultimately, health outcomes. This effect of human behaviour on patient care is especially strong in low- and middle-income countries (LMICs), where limited access to care often leads to delayed patient presentations with greater disease complexity, and many patients inundate the few available health facilities.

Nearly half of all errors in the operating room have been associated with surgeon behaviour and decision-making. A study of adverse surgical events resulting from communication issues reveals that close to half of all relevant information is not transmitted in full. Another study on bile duct injury during laparoscopic cholecystectomy demonstrates that errors in perception represent the primary cause of injury.

In LMICs, insufficient and erratic supplies of material and human resources further complicate providers’ decision-making. Additionally, unpredictable hospital stocks often shift the burden of rationing onto the level of the individual provider, rather than the level of the facility or system. The heavy volume of patients, their increasing complexity of presentation, and the inconsistent resources for treatment therefore place immense pressure on the provider to offer safe care.

Under-resourced health systems may also require providers to enter a role that they do not know, or for which they have not been prepared. Such role uncertainty has been documented as a source of stress amongst South African nurses, nurse managers in Ghana, and Pakistani house officers. While a surgeon may have clearer boundaries for their role in an operating room, there may still be ambiguity about the surgeon’s capability. This lack of clarity of role is exacerbated by inadequate aspects of provider training. Although surgeons often enter leadership roles, they may not have had formal training in leadership, and most of the skills are acquired on the job. Scarcity of staff in LMICs may impede investment in specific leadership training, reliance instead being based on seniority or other local hierarchies within medical culture. However, in such settings where expanding surgical infrastructure may require significant material or financial resources, improving surgeon behaviours is a strategy that is timelessly relevant and can be implemented easily with immediate returns.

These observations suggest that traditional surgical training models that focus on technical and clinical expertise alone are not enough. For surgeons to practise safely, they must develop skills that are not traditionally taught in the operating room. Such non-technical skills encompass the cognitive (ie, decision-making, planning, situation awareness) and the social (ie, leadership, teamwork, communication) dimensions of providing care.

A non-technical surgical skills (NOTSS) system has been developed as a novel behavioural assessment tool for evaluating surgeons. This NOTSS system is organised in a three-tier hierarchy comprising of categories, elements,
and behaviours (table). The categories include: situation awareness, decision making, communication and teamwork, and leadership. Within these categories are observable elements with corresponding behaviours that can be recognised and assessed. Such an explicit system with clear vocabulary to define and describe behaviours is central to measuring progress over time. This system allows surgeons to improve non-technical skills in a process that is objective, transparent, and perhaps most importantly, empowering.

While this NOTSS system was developed and implemented in high-income countries (HICs) in Europe, North America, Australia, and Asia, its core principles and skill categories required for high performance are applicable across clinical settings even in LMICs. Specific behaviours, however, are understood to vary based on regional context. As health systems are even less integrated in LMICs than HICs, the effect of human behaviour on patient safety and health outcomes may be even greater.

With these concepts in mind, Rwandan surgeons and anaesthetists partnered with colleagues at the Center for Surgery and Public Health at the Brigham and Women’s Hospital and Harvard Medical School to adapt the original NOTSS system to variable-resource contexts (VRC). Variability in VRC broadly encompasses physical resources, staff, communication, and systems/processes. A NOTSS-VRC curriculum was formed with a focus on behaviours that surgeons must practise in order to perform well, whether they have trained in this type of context or are experiencing it for the first time. To date, the NOTSS-VRC has been implemented in Rwanda but not validated.

Implementing a NOTSS system that is appropriate and intentional for contexts with significant resource variability would be beneficial not just for improving surgical training but also as a novel strategy for facilitating surgical safety. Limited health-care financing in LMICs represents a significant barrier to care delivery: lack of surgical instruments or materials, inconsistent staff availability, and delays in care processes are still pervasive challenges. NOTSS-VRC provides a tool that can be used immediately without additional financial resources to improve patient safety and outcomes. Investing in tools for strengthening non-technical skills ultimately is a global investment in improving quality of care for all patients.

Acknowledgments
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<thead>
<tr>
<th>Categories</th>
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<tr>
<td>Situation awareness</td>
<td>Gathering information</td>
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<td></td>
<td>Understanding information</td>
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<td></td>
<td>Projecting and anticipating future state</td>
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<tr>
<td>Decision-making</td>
<td>Considering options</td>
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<td></td>
<td>Selecting and communicating option</td>
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<tr>
<td></td>
<td>Implementing and reviewing decisions</td>
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<tr>
<td>Communication and teamwork</td>
<td>Exchanging information</td>
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<td></td>
<td>Establishing a shared understanding</td>
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<td></td>
<td>Co-ordinating team activities.</td>
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<tr>
<td>Leadership</td>
<td>Setting and maintaining standards</td>
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<td></td>
<td>Coping with pressure</td>
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<td></td>
<td>Supporting others</td>
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Behaviours not listed because they are context-specific.

Table: NOTSS skills taxonomy
To survive, health care needs small data to become adaptive

Duncan Maru and Senendra Upreti

Zika and Ebola outbreaks. New cures for hepatitis C. Ageing populations and the pandemic of dementia. Population health in our evolving, globalised world is defined by rapid change. Globally, slow-moving and reactive health-care systems are not up to the task. They need the tools, people, and systems to be more adaptive.

The current scenario is dramatic. At present, health-care systems around the world, particularly in low- and middle-income countries, are designed to be reactive rather than adaptive, to respond to acute conditions late in their course at the hospital rather than to proactively address both acute and chronic conditions in homes and communities.

The Sustainable Development Goals (SDGs) offer an opportunity to invest in adaptive health-care systems globally. In the SDG era, greater focus is rightfully shifting to the measurement of health-care systems performance and transparency with which governments deliver health care and other social services. This includes recognition of the need to finance digital systems for monitoring health-care systems. We will be wasting a momentous opportunity if investments are made in digital systems that reinforce existing reactive health-care structures.

Health-care data systems in resource-limited countries typically come from either demographic and health surveys conducted on an intermittent basis or facilities data on the volume of cases treated. These two data sources are outdated and have large gaps in both time and space. Typical demographic health surveys can capture regional or national variation but lack spatial resolution. Facilities data miss large gaps in diseases that never reach hospitals. Both fail to capture data sufficient to respond within the kind of timescale in which disease epidemiology evolves in our modern, globalised societies.

There is much discussion about the potential and pitfalls of big data in public health, yet much of that discourse ignores the real data scarcity in the world’s poorest countries. To get to the power of big data, we need to build a local “small data” architecture first, one with routinely collected data that are relevant at a local level to frontline health-care workers, their managers, and government officials. This is the foundation of an adaptive health-care system.

Building a “small data” architecture

We suggest a framework for a “small data” architecture for adaptive health-care systems. We outline in the table the difference between conventional data systems and adaptive ones.

The small data foundations of adaptive health-care systems are interoperable electronic medical records used at the point of care from the home to the hospital. These need to capture every touchpoint of the health-care system, and then be effectively mined for analytics at both macro- and micro-geospatial scales. Recent outbreaks demonstrate how essential it is that community health-care workers are...
delivering care at the household level and that those clinical touchpoints are being leveraged for health-care systems performance improvements. The evolving epidemiology of non-communicable diseases, mental health conditions, and ageing demands systems for tracking and caring for people in their homes and facilities across their lifetimes. These epidemic and endemic challenges require digital integration.

It is vital that governments, funders, and providers understand that investments in adaptive data systems support both health-care delivery and science. A core challenge in addressing broader development inequities between rich and poor countries is the disparity in investments in science. Scientific inquiry needs to be a core function of the new data architecture for adaptive health-care systems. A fully integrated home-to-facility electronic medical record (EMR) can generate baseline data that can be used for rapid, cost-efficient trials on health-care systems innovations. A new approach for the delivery of treatment for depression, tuberculosis, diabetes, or dementia can be integrated within these data systems, dramatically reducing the costs and improving the timeliness and relevance of health-care delivery research. An integrated and interoperable data architecture can in the long run be used for translational science, be it establishing patient cohorts for precision or personalised medicine, or machine learning applications. Countries that develop such systems can lower the costs and barriers to research, increase their global competitiveness, and decrease substantial inequalities in scientific achievement.

A collaborative challenge
To operationalise the new data architecture for the SDGs and beyond, it is necessary to establish deep collaborations between government institutions, funders, providers, and researchers. In Nepal, the Ministry of Health with several partners has deployed an integrated household-to-facility electronic medical record (EMR) that includes applications for community health worker follow-up interactions and biometrics identification. The EMR includes modules for surgery, non-communicable diseases, mental health, laboratory, and supply chain management. The integrated EMR can also be used to track patient outcomes throughout the health-care system, assess mortality at a household level, perform disease surveillance, and serve as a research database. This kind of platform will be essential in leveraging the focus brought by the SDGs to data platforms for the purpose of building adaptive health-care systems.

As countries build monitoring and evaluation plans for the SDGs, we suggest they take this broader view of developing integrated digital systems. This will set countries on the path to adaptive health-care delivery systems that incorporate learning and science into their day-to-day operations.

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Table: Conventional versus adaptive data systems

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Current Data Systems</th>
<th>Adaptive Data Systems</th>
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<tbody>
<tr>
<td>Data sources</td>
<td>Demographic and health surveys and facilities-based reporting</td>
<td>Integrated household-to-facility electronic medical records</td>
</tr>
<tr>
<td>Temporal Resolution</td>
<td>Large gaps via intermittent surveys</td>
<td>Continuous, real time</td>
</tr>
<tr>
<td>Spatial resolution</td>
<td>Only to facility or regional levels</td>
<td>Accurate to the household and village level</td>
</tr>
<tr>
<td>Diagnostic detail</td>
<td>Unlinked syndromic, diagnostic, and mortality details</td>
<td>Linkage of clinical data streams; data on cause of death</td>
</tr>
<tr>
<td>Response systems</td>
<td>Paper and manual systems</td>
<td>Real-time analytics accessible to officials</td>
</tr>
<tr>
<td>Financing</td>
<td>Minimal funding for ongoing data systems; high cost intermittent surveys</td>
<td>Data systems financed and built into health-care delivery</td>
</tr>
<tr>
<td>Implementation research</td>
<td>Data unable to inform health systems research</td>
<td>Ability to embed pragmatic, affordable research trials within healthcare delivery</td>
</tr>
<tr>
<td>Translational science</td>
<td>Data incapable of translational science</td>
<td>Foundation for translational science, artificial intelligence, machine learning, and precision medicine</td>
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Patient-centred R&D: where is the culture of inquiry and innovation in LMICs?

Kiran Raj Pandey

Since the majority of the disease burden and health technology deficit in the world is in low- and middle-income countries (LMICs), in order to implement a patient-centred R&D agenda, it is vitally important to encourage researchers and institutions in these countries to take up the responsibility for this research. Although as far back as 2006, the report of the Commission on Intellectual Property and Innovation in Public Health and the subsequent Global Strategy and Plan of Action on Public Health, Innovation and Intellectual Property (2011) stressed the need to increase the innovative capacity of developing countries, still not enough R&D happens there. This begs the question as to why not.

A lack of funding and resources is often put forward as a reason why little research happens in LMICs. Although resource constraints do exist, groundbreaking research in public health and health sciences has been done even when there was little funding, fuelled by curiosity and the courage to pursue a path of discovery. Neither John Snow’s cholera work in the UK, nor the development of oral rehydration solution in Bangladesh were hinged on generous funding. The meningitis vaccine in Cuba and artemisinin in China were also developed despite relative resource constraints.

If more of the R&D on LMIC health problems were done in these countries, research could also be done for significantly fewer resources given that personnel costs, which are often a major part of research budgets, are cheaper in LMICs. With growing prosperity, many middle-income countries also have significant financial resources and increasingly sophisticated infrastructure to conduct important research, although much more remains to be desired. Rich-world research institutions could help bolster such infrastructure through institutional partnerships, and skills and technology transfer.

A separate problem is whether LMICs have the culture of inquiry and innovation needed for R&D. Over the past several decades, the number of science graduates has significantly increased in many LMICs. Several of these graduates have moved to institutions in the West and proved their mettle as researchers and clinicians. However, at home their work stifles.

The reason for this failure is the lack of a culture of innovation. Many LMICs have struggled to create an environment in which innovation and knowledge creation are prized. The idea that knowledge is something that one can create through research and inquiry is rather alien to most students in these countries. The pedagogy actively stifles
original thinking. A strictly enforced hierarchy between faculty and students in academic institutions means that even the most innovative minds do not question the ideas or beliefs of their faculty, even though innovative ideas are likely to emerge in the heads of young students who are unburdened by old ways of looking at vexing problems. And even for senior faculty members, research can be an afterthought.

This is sad because medical schools and universities in developing countries are often full of motivated and talented students who, if groomed well, can do very important work in expanding the scientific knowledge base that their societies often lack. Several things are important in changing the current reality where minimal research gets done in LMICs. First is to create a culture of inquiry and discovery. Curricula need to change to encourage students to think for themselves. Medical students and clinical trainees with an aptitude for original thinking need to be groomed for a career path of a physician-researcher, a tradition that has served society so well in the rich world, but is sorely lacking in LMICs. Second, rewarding good research work through greater recognition is important. Creating mechanisms to adequately reward exceptional ingenuity and groundbreaking work will ensure that bright young people are willing to risk and dedicate the most productive years of their lives to research. Third, we need to create institutions in LMICs that house and support researchers. National and international collaborations, sharing of technical and managerial expertise, and private and public entity partnerships can play a vital role in creating a climate of research and innovation. Fourth, having a global pooled funding mechanism to support the work of researchers and institutions in LMICs is vital.

Over the long run, the world would be much better off investing in creating and nurturing research institutions and researchers in LMICs rather than focusing on funding rich-world institutions to work on LMIC health problems. Not leveraging the human capital that exists in LMICs is just not an efficient way to create a patient-centred R&D agenda worthy of a more equitable world.

This is a joint post with Laxmi Vilas Ghimire (Division of Pediatric Cardiology, University of California, San Francisco, CA, USA) and Sameer Mani Dixit (Center for Molecular Dynamics Nepal, Kathmandu, Nepal).
World Malaria Day 2017—striving for malaria elimination is admirable but mind the (patient) gaps!

Bhargavi Rao

“I just don’t get it—don’t we have CRISP-R technology now? So why don’t you just eliminate all the mosquitoes?” asked a junior doctor at my recent lecture on a Global Health and Humanitarian Medicine course. Clearly my message about the complexities of malaria control and the critical role of primary health care had not got through.

Many fellow doctors often react in surprise that malaria is still a significant cause of morbidity and mortality—despite the fact there were an estimated 212 million cases in 2015. However, this attitude is also prevalent amongst the malaria community. The focus of much academic research for the past decade has been around the prospects for malaria elimination and potential tools for pre-elimination settings. In truth, there has been excellent progress since 2000 in decreasing the burden of *Plasmodium falciparum*, through investment in vector control, diagnostic-led case management, and chemoprevention.

However, it is sometimes hard to share in this optimism. In the contexts in which we at Médecins Sans Frontières (MSF) work—eg, Central African Republic or South Sudan—malaria is an ever-present problem, intimately bound with conflict, poverty, and the deprivation of health systems. Outbreaks of malaria are common in refugee camps; inadequate water and sanitation, lack of decent shelter, competing emergency health priorities, and infectious diseases such as malnutrition and measles form a potent environment to foment malaria transmission. This is often complicated by the displacement of people into areas of differing endemicity—ie, those from areas at low risk of malaria may flee to areas of high malaria burden and so are particularly vulnerable. In situations where rapid flight and uncertain futures are a feature of daily life, preventative strategies are difficult to implement—where do you hang a bed net in the bush?—and often not prioritised—would a bed net be the first thing you would carry when fleeing your home?

On this World Malaria Day, a new ultrasensitive malaria rapid diagnostic test (mRDT) is being released. This is a major advance for low-prevalence settings aiming for malaria elimination, enabling the identification of those who are asymptomatically infected or who have very few parasites in the blood, so that all potential reservoirs of infection may be treated. The test is ultrasensitive to avoid false-negative results when levels of parasitaemia are very low. It is a tool for the final push to find every possible parasite and then treat it.

MSF works in countries such as Nigeria and the Democratic Republic of Congo where the majority of the global burden of malaria exists. Yet the problem we often face is determining the ubiquity of the malaria parasite amongst the populations we serve. Recurrent infections...
in early life generate immunity, so asymptomatic parasitaemia is common amongst older children and adults. Even when a patient has a fever, the cause of their illness may not actually be the malaria parasite in their blood that is detected by an mRDT. In addition, the most widely used mRDT detects a *P. falciparum* specific antigen, histidine-rich protein 2 (HRP2), which persists in the blood following a treated infection. Thus, patients can remain mRDT positive for a median 42 days even if the parasite has been cleared. In areas of high transmission where repeated infections may occur within 6 weeks, our doctors cannot always trust that a positive mRDT in a patient with fever means a current malaria infection, rather than being a false-positive test following a previous malaria infection. It could be argued that there would be no harm in offering all mRDT-positive patients antimalarials, especially since modelling has suggested that treatment of asymptomatic infections may reduce transmission. However, aside from issues surrounding drug supply and possible resistance, there is the very real risk that patients with non-malarial febrile illness will go undiagnosed and untreated, which is associated with high mortality. The story is further complicated by the emergence of HRP2 deleted strains across Asia, South America and sub-Saharan Africa, which can lead to false negative tests using the current HRP2-based mRDT. Although it is still unclear at present whether this affects symptomatic patients, general awareness of HRP2-deletion strains may further erode trust in mRDTs. In summary, there is a concern that we may be in a position where we cannot always trust a positive/negative mRDT result, and that clinicians may be missing other diseases that actually cause fever.

There is an alternative mRDT that detects the antigen *Plasmodium* lactate dehydrogenase (pLDH), for which the time to become negative is a median of 2 days. However, there is only one version that is currently WHO prequalified, and stocks are likely to be overwhelmed by demand. Therefore, just as we support the development of new tools and strategies for elimination, we need appropriate alternative tools for high-transmission settings, both to be developed and pushed through the prequalification process. Our need is for models of care and point-of-care tests that allow for community-based management of fever, for both malaria and non-malarial febrile illness. With these, we can expand access and extend rational case management whilst avoiding overtreatment with antimalarials or antibiotics, especially for communities where repeat attendances and follow-up are unfeasible and for whom regular prevention activities may be impossible. I’m just hoping that I can convince those who attend my lectures that malaria still has a few more challenges yet to be solved.
The top five investments we should be making to tackle NTDs

Roy Anderson and Alison Bettis

Neglected tropical diseases (NTDs) are a group of infectious diseases that affect more than 1 billion people worldwide, causing disability, disfigurement, social exclusion, and death. To tackle this global problem, an international partnership of governments, WHO, the pharmaceutical industry, philanthropic donors, non-governmental organisations, and the research community was formed in 2012 in London. This collaboration sought to pool resources and expertise to meet an ambitious target of controlling and, where possible, eliminating NTDs by 2020. 5 years on, the NTD community reconvenes this week in Geneva to review their efforts and renew their commitments to realise the 2020 targets.

What will be evident from this review is that great advances have been made both in terms of the engagement of endemic countries to tackle these diseases but also in the free availability of drugs to treat them. For example, based on the latest WHO data, in the past 5 years, the number of people at risk of NTDs fell by 20%—from 2 billion to 1.6 billion. Analysis of this investment in NTD control shows that it is an extremely cost-effective intervention that improves the lives of millions. Building on this progress, we now have an incredible opportunity to eliminate many of these ancient diseases, lifting communities out of poverty and securing benefits for generations to come.

While these advances are very promising, it is vital that interest and funding be maintained on the global scale in order to continue progressing towards the control, and eventually elimination, of NTDs. Findings from the recently launched WHO NTD progress report show that 330 million people in sub-Saharan Africa could be covered by new investments of US$150 million per year to the year 2020. As such, one of the desired outcomes of the Geneva summit is to encourage and identify ongoing support to fill funding and capacity gaps. Ways in which current and future funding is invested will shape the success of the international efforts to control and eliminate these debilitating diseases. The following are investments worth making.

Research and innovation
Ongoing scientific and operational research activities are crucial to improving our tools and methods for NTD control. Investing in research can yield faster and more sensitive diagnostics, improved strategies for treatment and control, new and more efficient uses of technology for data collection, and much more. Challenges to NTD control are always shifting, and strong investment in research means
that the NTD community can innovate and adapt to this forever-changing environment.

**Capacity building**
In many endemic countries, the capacity of public health professionals is hindered by a lack of resources. This may result in a lack of necessary equipment, a shortage of workers, or inadequate training opportunities, all of which pose additional challenges to NTD control programmes. It is imperative that partnerships between endemic and non-endemic country institutions engage in training and knowledge exchange, to further build the capacity of health workers. Continuing to invest in public health professionals in endemic areas can have an enormous impact, and is important as government health systems take ownership of their disease control programmes.

**Consistent monitoring and evaluation and surveillance**
In order to effectively and efficiently treat NTDs, we have to know where infection is present. Regular surveillance activities in endemic areas can provide an accurate picture of where the diseases are (geographical location) as well as who is most likely to be infected (eg, different age groups, certain occupations with high risk factors). It is also vital to keep track of progress as treatment programmes continue, to understand the impact of interventions as well as tracking potential problems (such as any development of drug resistance). Investment in quality, regular surveillance is important on the local and international scale, and can also be a source of useful data for research activities.

**Integration**
A recent priority for many governments is the integration of NTD control programmes with other development initiatives. Research shows that combining treatment efforts for the same population (eg, deworming, water and sanitation facilities, and school feeding in schools) is much more efficient than conducting these initiatives separately. This concept can also be applied in the context of funding, where overlapping priorities could be seen as an opportunity for joint investment between sectors (eg, education and deworming in schools, or poverty reduction/microfinance and disease case management). Collective investment can greatly increase impact while decreasing costs to each individual donor.

**Logistical support for drug delivery**
Drugs can often be obtained for free in poor countries, but the logistics of delivery to remote areas is often costly and beyond the means of some governments and certainly poor communities in endemic areas. Support is needed in many regions of the world to provide the logistics of drug delivery to people in need.

Prioritising funding for these areas is an excellent return on investment in public health, and will have a very positive impact on the lives of millions of people. And while increased funding for NTDs will be helpful in the short term, sustained interest in funding these activities in the long term is vital if we are to realise the very achievable goal of protecting communities worldwide from the suffering caused by these diseases.
Refugee and migrant populations and the International Health Regulations

Richard Seifman

While disease knows no boundaries, we rely upon governance structures delineated by national borders to prevent, detect, and respond to epidemics and pandemics. But what happens in ungoverned spaces? Or geographical regions under the auspices of the UN, such as many refugee camps, refugee areas, or internally displaced persons’ camps? There is currently little to no policy guidance on how to govern infectious disease control in regions not under the aegis of a sovereign nation, nor in populations that are displaced in disputed areas or displaced as a result of destructive climatic conditions, nor is there a clear understanding of the obligations of the UN and other international organisations in protecting populations from disease events.

The WHO International Health Regulations (IHR) entered into force in 2007, and all 194 WHO Member States acceded. These Regulations consist of a comprehensive and tested set of rules and procedures designed to make the world more secure from threats to global health. The IHR establishes an agreed framework of commitments and responsibilities for Member States and for WHO to invest in limiting the international spread of epidemics and other public health emergencies while minimising disruption to travel, trade, and economies. Member States are, in principle, required to report all events that could result in public health emergencies of international concern, including those caused by chemical agents, radioactive materials, and contaminated food. The UN High Commissioner for Refugees (UNHCR) is the principal international operational entity responsible for the wellbeing of refugees. The 1951 Convention relating to the Status of Refugees and subsequent 1967 Protocol sets forth legal protections and assistance that States agree to provide. UNHCR has a 2014–2018 strategy for public health for populations in refugee camps, settlements, and rural and urban out-of-camp populations which does not mention the IHR. Nor does its “10 Point Plan on Refugee Protection and Mixed Migration”.

The International Organization for Migration (IOM), a related organisation of the UN since 2016, has as its mission, inter alia, to “Assist in meeting the growing operational challenges of migration management”, basing its actions on its Migration Governance Framework. This IOM Framework includes broad principles, such as “Adherence to international standards” as well as general references to health, without detailing IOM’s responsibilities with respect to the IHR. IOM has been the lead in producing the Migrants in Countries in Crisis Initiative (MICI) and a 2016...
set of guidelines for implementing the MICI, which again makes no reference to IHR obligations.

The growth, mobility, emigration, and immigration of populations—both lawful and otherwise—have substantially accelerated the risk of the spread of disease. We are now witnessing the highest levels of displacement on record, with an unprecedented 65.3 million people around the world considered in migrant status. Among them are nearly 21.3 million refugees, over half of whom are under the age of 18, and another 10 million are “stateless people” who have been denied a nationality and access to health care. These populations are spread throughout the world, some in stable settings over extended periods of time such as those in the Middle East, others in unsettled areas, in communities that are sizeable, more-or-less stable but are in “no man’s land” such as Darfur, and others are living in indeterminate circumstances, such as Syrian refugees in Turkey or Greece—likely to increase with the recent events inside Syria. Even beyond, these numbers will dramatically increase as a result of continuing unrest in the Middle East and changing attitudes towards such populations in Africa. Moreover, it is highly likely that there will be substantial population movements in many regions as a result of climate change and radically worsened living conditions or loss of livelihoods.

What all of these refugee, internally displaced persons, and climate-affected populations have in common is that they are equally as susceptible to communicable diseases and as likely to be either the epidemiological originator or adversely affected by a public health emergency of international concern, as citizens of any country. However, not the UNHCR, the IOM, nor WHO’s role with respect to the IHR address explicitly the challenge of dealing with these populations. In each case, this absence is partly due to the lack of an evidence base in understanding how the process is currently functioning, the IHR legal obligations of the host country, that of an originating country, and relevant organisations.

Before civil strife or worsening climatic conditions add large and new movement of populations, there is need to look at the existing authorities, obligations, and responsibilities of international entities including UNHCR, WHO, and the IOM. Existing platforms such as the UNHCR’s 10 Point Plan and the MICI guidelines could be used as platforms or modified to include IHR guidance. Combined with an effort to gather existing information on what is happening now in a variety of settings, coupled with an analysis of policy and operational gaps identified, possible courses of action would emerge. At global, regional, and country levels, we would be better able to provide more comprehensive coverage of infectious diseases, ones that could transit from an endemic to epidemic to pandemic dimensions. We need to start this process now.
Innovations in closing the global treatment gap for depression

Crick Lund

Currently there are more than 300 million people around the globe living with depression. The failure to deliver treatments to tackle depression is not because they don’t exist, but because our health systems and those at the coalface are not equipped to provide the treatment and care required.

This is despite the fact that there is growing understanding of the scale, causes and treatment for the so-called ‘black-dog’. As World Health Day makes the call to talk openly about this illness, the global community needs to find ways to close the ‘treatment gap’ for depression.

There is good evidence for cost-effective interventions such as cognitive behavior therapy and antidepressants, but in most countries these interventions are not being delivered. This is particularly pertinent in developing countries, where health systems are disproportionately struggling under the burden of infectious diseases and maternal and child health challenges, as well as the growing tide of chronic non-communicable diseases. In developing countries, where most of the world’s depressed individuals live, the treatment gap exceeds 75 per cent according to World Mental Health Survey.

Within the Programme for Improving Mental health care (PRIME), we have been working for 6 years to integrate mental health care into routine low resource care settings, for conditions like depression, alcohol use disorder, psychosis and epilepsy. PRIME focuses on establishing ongoing supervision and support systems, to supplement and sustain training of primary care workers; change management workshops to reorient primary care facilities to integrated chronic care; and improving information systems for better quality care.

In districts in Ethiopia, India, Nepal, South Africa and Uganda, we have worked with the Ministry of Health, the local district health management team, and local NGOs to develop a district mental healthcare plan. Through implementation of these plans we have seen a substantial increase in clinic attendance for these conditions, and in turn, improvements in patients’ mental health.

A case in point is PRIME’s work on improving community level demand for depression care through an innovative Community Informant Detection Tool (CIDT) in Nepal. The CIDT is administered by the Female Community Health Volunteers and members of local “mother groups”—known as ‘community health workers’ (CHWs). The tool includes case vignettes and illustrations which enable the CHWs to identify people in the local community living with depression and many other mental disorders.

The strength of this tool is that it is based on careful ethnographic and clinical research that has identified culturally
valid idioms of distress in the Nepali setting. Equipped with this tool, CHWs who are familiar with the local community are able to identify and approach individuals who may be suffering from these conditions and encourage them to attend the local clinic where they can receive support in the form of counselling or assessment for medication. These referrals to the clinic are made discreetly and are entirely voluntary. In using this tool we have seen that the CIDT has accuracy comparable to common screening instruments in primary care clinics, and preliminary findings indicate that it leads to a substantial increase in service use.

The CIDT addresses a common challenge in narrowing the treatment gap, namely that people who suffer from mental illness may not seek treatment because of the stigma associated with their condition, or a belief that they cannot be helped in local clinic settings.

Depression is a highly stigmatised and often hidden health condition. This is why initiatives such as PRIME, which aim to reduce stigma and increase access to care integrated into routine primary healthcare settings are so important. Addressing this massive treatment gap for depression is challenging, but it is possible. The failure to deliver treatments to tackle depression is not because they don’t exist, but because our health systems are not equipped to provide this care. We need to strengthen our health systems so they are fit for the times in which we live. As members of Health Systems Global, we participate within the network to discuss, debate and dissect the challenges facing health systems and how we can address them.

We need greater public awareness, health system strengthening activities, and investment in care. The World Health Organization has shown a $3–5 return for every dollar invested in care for depression and anxiety. In other words we know more than ever before about what needs to be done about depression, how much it costs and what the benefits are. So, on World Health Day, we celebrate the fact that the WHO and many others are working to raise awareness and remove the stigma of mental illness. In doing so, we must and can take action to close the treatment gap.
Students unite for open innovation and global access to tuberculosis drug sutezolid

Chloe Stone and Merith Basey

On January 25, 2017, after more than 2 years of advocacy by a student-driven coalition of global health advocates under the umbrella of Universities Allied for Essential Medicines (UAEM), Johns Hopkins University (JHU) and the Medicines Patent Pool (MPP) announced an agreement that sutezolid, a promising tuberculosis drug, would be licensed to the MPP, with potentially groundbreaking implications for global health.

However, this important agreement nearly did not come to fruition. JHU was on the verge of exclusively licensing its intellectual property around sutezolid to Sequella, a pharmaceutical company which already held some licensing rights. Sutezolid is an oxazolidinone antibiotic that has shown both superior efficacy and less toxicity for patients than the current commercially available drug, linezolid. It had shown promising results in phase 2a clinical trials, but since 2013, when Sequella acquired its license from Pfizer, no new studies of sutezolid have been successfully conducted.

As highlighted by a JHU alumna and UAEM advocate in The Lancet Global Health in 2016, an exclusive license for Sequella would limit innovation and potentially future access for those who need it most. Through a coalition of global health non-governmental organisations including UAEM, Doctors Without Borders/Médecins Sans Frontières’ (MSF) Access Campaign, Treatment Action Group, the Global TB Community Advisory Board, Public Citizen, and JHU alumni, increased pressure was put on the university to rethink their licensing strategy. Licensing to the Medicines Patent Pool (MPP), which is mandated to practise public-health-driven licensing, could help foster future clinical development and promote access to the promising drug.

Following the mobilisation of a petition, which led to the delivery of hundreds of signatures from around the world from people who recognised the potential of the drug and the need for a public health approach to its development, JHU President Ronald Daniels finally agreed to meet with UAEM students who shared a common goal of ensuring that the university would be accountable to its social mission “to foster independent and original research, and to bring the benefits of discovery to the world.” When the MPP opened up its mandate to include tuberculosis, the coalition, led by UAEM, urged JHU to license sutezolid to them due to their open and public health driven development model.

While the public-health-driven development of sutezolid is important for patients around the world, it also sets an important precedent. Sutezolid has the potential to be the first tuberculosis drug developed under the principles of the 3P Project, a new approach to drug development,
spearheaded by the International Union Against Tuberculosis and Lung Disease (The Union), MSF, and other tuberculosis public health groups, that aims to create a collaborative and open framework to improve R&D outcomes and ensure equitable access to tuberculosis treatment regimens. The agreement between JHU and the MPP is also an important model for other universities to seek licensing agreements in the pursuit of increased innovation and access to lifesaving medicines. As the first academic institution to contribute to the MPP under its new tuberculosis mandate, JHU is continuing to build its reputation as a global health leader, while setting precedent for other universities to follow suit, and living up to its first place position in the UAEM University Report Card project.

The coalition is now turning its focus to Pfizer and Sequella to request open access to the clinical data the pharmaceutical corporations continue to hold for sutezolid. Open access to this data would accelerate the development of the drug, helping to more expediently and efficiently bring it to market without unnecessarily duplicating clinical trials.

The sutezolid story is an example of how engaged students can instigate real world impact by holding their universities accountable to their social missions and advocating for equal access to health products. This student-led victory represents a significant step in tuberculosis research and hopefully for people living with the disease worldwide.
Accelerating progress to meet the goal of immunisation for all

Kirsten Mathieson

Decade of Vaccines (DoV) leaders recently published a Comment in The Lancet challenging countries and partners to do more to reach everyone, everywhere with life-saving vaccines. Governments have committed to achieve universal immunisation coverage by 2020 through the Global Vaccine Action Plan (GVAP) and recently again through the Addis Declaration on Immunisation, which was endorsed by African Heads of State at the 28th African Union Summit in January. With the adoption of the Sustainable Development Goals (SDGs) in 2015, governments also committed to achieving universal health coverage (under SDG 3), promising to “leave no one behind”. But Save the Children is concerned that, without accelerated action, these commitments will go unfulfilled.

There is wide consensus that immunisation saves lives and is one of the most successful and cost-effective health interventions, with far-reaching benefits. Increased coverage has contributed to a remarkable 50% drop in child deaths globally between 1990 and 2015, from 12·7 million deaths to 5·9 million. It is estimated that 6·4 million deaths could be averted by immunisation between 2011 and 2020. The impact will be greatest among excluded communities, which typically have low access to health care and high vulnerability to disease, and where the financial burden of illness has a greater impact on household poverty. Save the Children estimates that closing the immunisation equity gap could save 800 000 more lives between now and 2020. However, immunisation has even further reaching benefits—a mere $1 invested in immunisation is estimated to lead to a $44 return in wider economic and social impacts.

Taking stock at the midpoint of the GVAP

This year marks the midpoint of this ambitious plan. So where do we stand? There has been impressive progress in the coverage of immunisation services over the past decade, with 86% of children globally now receiving basic vaccination. But there is cause for concern. This progress has decelerated and, halfway through the 2011–2020 GVAP, targets are off track. Coverage has increased by only 1% since 2010 and 68 countries fall short of the 90% coverage target.

Last year, the Strategic Advisory Group of Experts on Immunization (SAGE) released their 2016 Midterm review of the GVAP. They expressed grave concern that progress toward the goals to eradicate polio, eliminate measles and rubella, eliminate maternal and neonatal tetanus, and increase equitable access to lifesaving vaccines is too slow.
Save the Children echoes these concerns. In their *Lancet* piece, DoV leaders remarked that while “there are bright spots in global immunisation efforts, the overall picture is sobering”. 19.4 million children under 1 year old globally are still missing out on immunisation—ie, one in seven children are excluded from this critical health intervention. To focus on the seventh child exposes the systematic exclusion that is going on within countries. Save the Children’s recent report, *Further, Faster, Fairer: Reaching every last child with immunisation*, shows that huge inequalities in coverage within countries lead to children from the poorest households, from certain ethnic groups, living in neglected areas of a country, and affected by conflict and emergencies being excluded from accessing basic immunisation. During the launch of our report last October, leading global immunisation experts agreed that addressing equity in coverage and reaching every last child is of critical importance.

**Turning rhetoric into action**

The consensus is clear—immunisation works, has far-reaching benefits, is a good buy for health, and most importantly is the right of every child, as part of their right to health. There is also expressed political will to make immunisation available for all children. So why has progress stagnated and why are targets off track?

High-level political commitment is essential: it’s a critical first step. But unless we do things differently and that commitment is followed by action, it will end there, as mere rhetoric. And by doing so, we will continue to fail that seventh child and further entrench systematic inequalities that leave him or her behind.

At the midpoint of the GVAP, we must turn that commitment into action and step up progress to deliver on the goal of universal immunisation coverage by 2020. As the SAGE report says, “The next four years present unprecedented opportunities for countries to leverage the attention and support that immunization receives and apply it for the benefit of people everywhere.” Save the Children urges countries to prioritise equity and strengthening health systems that can reach all children with immunisation and other essential health services, as part of universal health coverage. This will require political leadership, increased domestic investment, and concerted action. We must accelerate progress to make universal immunisation coverage a reality.
Making the Coalition for Epidemic Preparedness Innovations (CEPI) more effective

Richard Seifman

The emergence and spread of Ebola virus disease (EVD), Middle East respiratory syndrome (MERS), and Zika virus have focused global attention on epidemic and pandemic threats. Despite this, preventing the emergence of disease outbreaks has remained relatively underexplored, and the central role of zoonotic transmission in such diseases remains a neglected dimension of global health security.

The Coalition for Epidemic Preparedness Innovations (CEPI), a US$540 million fund announced at the World Economic Forum in Davos in January, provides a “push” mechanism for vaccine development for diseases of high potential to cause global health emergencies. It also seeks to remove barriers to vaccine access, promising support for safety and efficacy trials, licensing, and stockpiling. CEPI joins other innovative financing mechanisms such as the Pandemic Emergency Financing Facility (PEF) that seek to effectively mobilise public and private resources to contain epidemics. But the focus of these initiatives has not been on prevention.

The majority of human infectious pathogens have animal origins, mainly as a result of genetic similarity and animal-human contact opportunities that facilitate spillover. The rate of emergence of such disease events is increasing, and with global mobility, their spread potential and financial impact is also rising. Globally, zoonoses cause an estimated 2-4 billion infections and 2-2 million deaths annually. Most of these infections are caused by the 13 most prevalent endemic zoonotic diseases (including brucellosis, tuberculosis, and leptospirosis), which cause a persistent public health and economic burden primarily in developing countries, affecting both human health and agricultural productivity. Many are found in “hotspots” of emerging infectious diseases, typically areas that are biodiversity-rich, public health infrastructure-poor, with rising human colonisation and human-animal codensification.

Disrupting mechanisms of zoonotic transfer in emerging disease hotspots should be our first line of defence against the threat of infectious disease crises. A ‘One Health’ approach that integrates human, animal, and environmental perspectives remains our best chance of achieving such disruption by helping us better understand the nature of upstream risks to health and economic prosperity, and to design optimal mitigation approaches.

The economic case for taking a One Health approach to pandemic disease control is clear. World Bank estimates suggest that capacity investments in human and animal health services to bring low- and middle-income countries up to global standards to prevent pandemics would cost an average of $1.8-3.4 billion per year; far less than the...
$6.7 billion average annual cost from outbreaks of seven zoonotic diseases alone over the past decade (excluding the high cost of SARS) or the $60 billion expected annual loss from pandemic diseases. Preventing a portion of potential pandemics would yield high investment returns, resulting in widespread health benefits, food security and food safety gains, more stable livelihoods, and poverty alleviation, all whilst improving global health security.

A One Health approach can offer significant advantages to the field of vaccine development for pandemic preparedness by stemming zoonotic diseases at source. Indeed, almost all of CEPI’s initial disease targets for vaccination are zoonotic in origin, yet CEPI has not announced any plans to commit resources or attention towards the animal-human interface. Developing vaccines for animal targets presents a potentially high-yield strategy that should not be overlooked. Such vaccines can be designed and maximised for broad, cross-sectoral benefit; for example, livestock vaccination against Rift Valley fever virus can both reduce agricultural losses and protect public health in a cost-effective manner. Further, developing animal vaccines may in some cases be cheaper than development for human targets, due in part to lower costs of meeting regulatory and safety standards, resulting in higher rates of economic return to investment. Finally, many biopharmaceutical firms already have existing animal health divisions that may house promising but untranslated innovation: a potential market failure that might be addressed through a more integrated approach to human and animal health by initiatives such as CEPI.

Beyond vaccines, a One Health approach has much to offer efforts to reduce global pandemic risk. Harmonised animal and human health surveillance systems can provide a more flexible capability to identify and respond to emerging but as yet unprioritised pathogen threats. Additionally, coordinated policy action across health, agricultural, and environmental sectors can address problems of inactivity where economic losses and gains are conferred across different sectors. An intersectoral approach to infectious disease risk should appeal to political decision makers, with support from external actors, such as the new World Bank IDA18 pandemic preparedness commitments, the Global Health Security Agenda, and the related Joint External Evaluation for the World Health Organization’s International Health Regulations. It would also help in meeting World Animal Health Organisation standards. To achieve such change, however, developing countries will need dedicated resources to strengthen and sustain surveillance, laboratory and human capacity and preparedness, and institutional infrastructure, with international assistance shouldering its fair part of the technical and financial burden.

The interdependent nature of animal, human, and ecosystem health is becoming increasingly well recognised; however, key global health initiatives still fail to account for such dependencies. As it formulates its plans, CEPI has the opportunity to address such failure and maximise returns to global health by tackling zoonotic targets at their source. This is a path that other global health actors must now also walk.

Co-authors: Anas El Turabi and Olga Jonas (Harvard University); William B Karesh (EcoHealth Alliance and World Organisation for Animal Health [OIE]); Catherine Machalaba and Kristine Smith (EcoHealth Alliance); Franck Berthe, Timothy Bouley, and François Le Gall (World Bank).
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Setting the stage for improving childhood cancer outcomes: the Sickkids-Caribbean Initiative

Sumit Gupta and Tracey Gibson

In Small States and low/middle income countries, children’s death rates from communicable diseases continue to decrease and cancer accounts for an increasing proportion of childhood mortality, leading to calls for its inclusion in the global child health agenda.

While cure rates for children with cancer in high-income countries (HICs) have dramatically increased to over 80%, similar outcomes have not been achieved in Small States (SS), or low/middle income countries (LMICs), where the majority of children with cancer reside.

The SickKids-Caribbean Initiative (SCI), formed in 2013 to improve the diagnosis and management of paediatric cancer and blood disorders through capacity building, partners the Centre for Global Child Health at The Hospital for Sick Children (SickKids) in Toronto, Canada, the University of the West Indies, and seven hospitals in six Caribbean countries (The Bahamas, Barbados, Jamaica, St Lucia, St Vincent and the Grenadines and Trinidad and Tobago). While not all of these countries are LMIC, those which are not, are recognised by the World Bank as SS, experiencing challenges associated with small economies, remoteness, and isolation.

SCI identified the lack of detailed regional data on childhood cancer outcomes. While population-based cancer registries exist in the Caribbean region, more detailed data were required to inform interventions; without such data, blind interventions risked causing inadvertent harm. For example, investigators in the Dominican Republic, documenting an excessive rate of death secondary to treatment complications among local children with acute lymphoblastic leukemia (ALL), lowered treatment intensity. The result was a decrease in the rate of these deaths and an increase in two-year overall survival from 40% to 70%. Without considering cause of death data, investigators could have falsely concluded that treatment intensification was necessary, thereby worsening outcomes.

SCI established a Local Oncology Databases Working Group to create a series of hospital-based paediatric oncology registries in all seven SCI partner sites. We are describing our experience in order to encourage similar efforts in other LMICs and SS.

A series of meetings were held with key individuals from each site, including clinicians, academics, hospital administrators, government officials, and, where present, cancer registrars. These meetings introduced the aims and format of the proposed hospital-based registries and obtained buy-in from all stakeholders, whose input was continuously solicited throughout registry development. A key principle was ownership of local data remaining with each site, which could revoke access at any time. Through an iterative process with stakeholders, data variables for collection were identified. We deliberately prioritised data quality over quantity; therefore, only a limited number of variables, each with clear purpose, were included. Local ethics approval was obtained at each site where local personnel deemed it necessary. REDCap™ was selected as the data entry and storage platform as it offered several key advantages: secure online platform allowing for unique data entry at multiple sites while preventing one site from accessing data at another, protection of personal health information, and user-created algorithms to ensure data accuracy and completeness.

Given high clinical workloads, reliance upon clinicians for data entry was not feasible. Building upon a successful Central American model, dedicated data managers were hired at each site, with salaries funded through Canadian and Caribbean philanthropy. Significant variation in resources and patient volume between sites necessitated flexibility in data manager profiles and funding models. Intensive training was held in Toronto in 2014. Data
managers attended in person or via teleconference, and were introduced to principles of childhood cancer, data management, and confidentiality. In November 2014, the SCI Registry was launched, with both retrospective and prospective entry of all newly diagnosed patients, validated by local physicians and Working Group co-chairs prior to data entry. Regular online meetings of the Registry Working Group, comprised of physician co-chairs and data managers, are held during which difficult cases and issues pertaining to medical record access and infrastructure are discussed. These meetings serve to ensure data comparability across sites, as well as creating a sense of shared purpose among data managers.

All seven sites are actively registering cases prospectively, and have completed retrospective data collection to 2011. Once complete, baseline data on the treatment and cancer outcomes of these children will be disseminated to stakeholders, and will inform interventions aimed at increasing regional cure rates. Continued data collection will allow for evaluation and modification of these interventions, providing a mechanism for continuous outcome improvement. Additional future goals include achieving long-term registry sustainability and expansion to other childhood cancer treatment sites.

While childhood cancer has not occupied a prominent place on the global health agenda, epidemiologic transitions in LMIC and SS childhood mortality show this must change. Improvements in global childhood cancer outcomes will only occur when clinicians and policymakers are guided by robust data. The SCI Registry is a successful effort to provide such data, and may serve as a model for similar initiatives in other regions.
Gender and the future of global health

Austin Liu and Kelly Thompson

It is well-recognised that gender affects almost every aspect of health, but WHO still has a long way to go in integrating gender in its work and advancing gender equality in health and health leadership.

Ahead of the election of its next Director-General (DG) in May 2017, considered to be existential for the organisation, an examination of the priorities, pledges and responses of the three DG candidates nominated by the Executive Board of WHO will be an important indicator of the positioning of gender in this election and in the future of global health.

Among the three candidates, Dr Tedros Adhanom Ghebreyesus, the former Minister of Health & Foreign Affairs of Ethiopia, is the only one to include women’s health in his five leadership priorities for WHO. He is committed to place women’s, children’s, and adolescents’ health at the centre of the global development agenda as he pledges to champion WHO’s Global Strategy. To address gender inequality as a root cause and an important determinant of health, he promises to advocate for increased investments for the empowerment of women and girls and hold governments accountable for their commitments.

On the other hand, neither gender equality nor women’s health are one of the four priorities of Dr David Nabarro, nor are they listed in one of the ten pledges by Dr Sania Nishtar. Nonetheless, Dr Nabarro, the UN Special Adviser on 2030 Agenda for Sustainable Development does recognise the link between universal health coverage and women’s increased access to healthcare and the role of healthy women in development. Dr Nishtar, the founder of Heartfile, a Pakistan based health policy think-tank, also considers gender equality and poverty reduction as fundamental measures in order to achieve the Sustainable Development Goals (SDGs). Dr Nishtar plans to address gender equity at all levels of the WHO while Dr Nabarro has given an assurance to abide by the Gender Parity Pledge signed by current DG Margaret Chan. He calls for WHO to be a feminist organisation that addresses health issues from the perspective of the women that view them.

The issue of sexual and reproductive health (SRH) was addressed specifically by the three candidates (in this slightly more open election process) due to the strong advocacy efforts by activists for health rights. Dr Nishtar promised to take a proactive approach to strategise and advocate for SRH and ensure it remains a priority in national policies. Dr Nabarro highlights the importance of access to healthcare and health information for adolescents as an important way to prevent long-term negative health outcomes. Dr Tedros identified the unequal distribution of power as the origin of the contention surrounding SRH and suggested taking a country-by-country approach to improve access.
Many global health observers have called for a strong DG and recent developments in the US, including a reinstatement of the Mexico City Policy, prove this need. Previous incarnations of the “global gag rule” have shown negative impacts on the health of women and children. To realise their commitments the three DG candidates will need a strategy for resource mobilisation, and to capitalise on other Member States’ support such as through the She Decides Initiative and the 2017 Family Planning Summit. Therefore, the ability to form coalitions, resolve conflicts, and convince different stakeholders to cooperate becomes paramount in order to achieve target 3.7 of the SDGs—to “ensure universal access to sexual and reproductive healthcare services”.

Finally, it is essential for the next DG to embrace gender equality as both a policy priority and fundamental principle, including leading by example with a gender lens, and institutionalising gender equality in the work of WHO. Equally important is to integrate the gender equality agenda across different professional grades and levels of the organisation, as well as in its governing bodies. The next DG should continue the momentum from the recent call to action for gender equality in global health.

The United Nations Secretary-General (UNSG) Antonio Guterres made pledges about gender parity during his campaign and reassured all Member States that he will prioritise the empowerment of women and the promotion of gender equality within the UN Family when he was appointed. For WHO the next DG should work in coherence with the SG’s agenda and make public his or her plans in the promotion of gender equality at the beginning of office. Regardless of the gender of the next DG, gender must be placed prominently in the future of global health.

Roopa Dhatt (Founder/Director) and Desiree Lichtenstein (Founder/Gender Specialist) of Women in Global Health are the co-authors of this post. Women in Global Health is currently working together with the Global Health Centre and other key partners to advance the role of women in leadership at WHO.
Is a global shift developing to reduce penalties for violence against women?

Jennifer Wagman, Jay Silverman, and Anita Raj

One in three women globally has experienced violence from a male intimate partner (IPV) or sexual violence (SV) from a non-partner. Such violence is not only a human rights violation, it also creates a substantial health and economic impact on individuals and societies. In the USA alone, costs of IPV exceed $5·8 billion annually, and costs of SV exceed $3 trillion over victims’ lifetimes. Policies that prevent IPV and SV are important for health and human rights, as well as development. Accordingly, elimination of such violence was included as part of the UN Sustainable Development Goals (SDG) for 2030. Unfortunately, despite this suggested indicator of global progress, a worrisome trend is forming regarding a reduction in legal protections against IPV and SV in nations where such laws have existed for decades.

On Feb 7, Russian President Vladimir Putin signed into law the decriminalisation of some IPV offenses, including reducing the penalty for spousal battery to a civil rather than a criminal offense in cases without a prior IPV conviction or those cases determined to have not resulted in “substantial bodily harm”. Proponents of this change, which passed through Russia’s Parliament by a vote of 380–3, have argued that this will strengthen families and reduce the state’s meddling in family life. Data from the Russian Government document that violence occurs in 25% of Russian households, and 14 000 Russian women die from domestic homicides each year. While there are no data on police contacts among IPV victims, studies from elsewhere indicate that police calls typically occur only after multiple episodes and increasing severity (ie, a first conviction is very unlikely to be a first offense). Such policies not only go against the evidence on the scope and nature of violence against women, they are clearly designed to prioritize maintaining the social status and privileges of men over the safety of their victims.

Increasing concerns are also erupting in the USA regarding protections related to violence against women. On Jan 20, a new President was elected, with a demonstrated lack of understanding of the scope and nature of violence against women and an agenda to reduce Government spending towards its prevention. Proposed budget cuts include the dismantling and defunding of the Office on Violence Against Women (OVAW), which supports victim services, training for police and judges, and prevention programming nationally. OVAW was created by the
bipartisan Violence Against Women Act (VAWA), passed in 1994 and reauthorised in 2000 and 2013 under Republican and Democratic Presidents, respectively. Should OVAW survive, it will be under the direction of the newly appointed Attorney General Jeff Sessions, who was one of the minority of Senators that voted against VAWA reauthorisation in 2013. Betsy DeVos, confirmed as the new Education Secretary, has stated she will not commit to enforcing Title IX, which is instrumental to protecting the nation’s students against sex-based discrimination, sexual harassment, and SV. These significant shifts in federal priorities are definitely cause for alarm.

There is a long history of non-existent legal protections from IPV and SV under the law due to misguided beliefs that what occurs between intimate partners, including violence, is a cultural or private family issue. We have repeatedly observed state leaders showing inadequate understanding of what constitutes IPV and SV, blaming victims and, in some cases, even being perpetrators with impunity. Even after hard fought laws are passed, we too often see poor utilisation of these laws due to issues in the criminal justice system or victims’ fear of mistreatment or stigmatisation. More recently, we have even begun to witness gender neutralising of laws, despite ample evidence that IPV and SV are most often perpetrated by men against women. However, efforts to weaken or eliminate existing policies and protections related to violence against women are new, and may be part of a broad backlash compromising civil and human rights under the guise of supporting individual freedoms.

Make no mistake, undermining existing legislation against IPV and SV will yield an increase in the incidence and severity of these abuses. There is already some evidence that domestic violence against women in Russia has increased since policy changes were enacted in the country. Beyond the damage done by the regression of protective legislation within nations, in the cases of donor nations such as Russia and the USA, ripple effects may form and affect nations they support, impeding global progress against violence. More than one-third of nations continue to have no known law against IPV, and growing humanitarian crises are likely to elevate risks for both IPV and SV against women and girls. If we continue in this direction, global monitoring to track global IPV and SV rates as part of SDG efforts may document worsening rather than improving trends, led by some of the world’s richest nations.
Dr Mustapha Kaloko’s Opening Statement at the International Conference on Global Surgery 2017

Mustapha Kaloko and Kofi Herve Yangni-Angate

Africa has witnessed a tipping point in global surgery, anaesthesia and obstetric care. On February 1, 2017, His Excellency Dr Mustapha Kaloko, the Commissioner of Social Affairs for the African Union, gave his opening address to the Pan African Association of Surgeons in the African Union Commission Conference Center, Addis Ababa, Ethiopia. It was an address that would have been inconceivable just 2 years ago. For one reason, he commented on the findings of The Lancet Commission on Global Surgery, which had not yet been published. He recognised the pivotal, “indispensable” role of surgery in health-care delivery, and at the same time addressed the parallel imperative of providing financial risk protection for the poor. Most importantly, Commissioner Kaloko implored Africans to put “global surgery on the political and policy agenda of our governments”: a clear and unmistakable call to action for all stakeholders.

With this speech, Africa has thus added another voice to regions all over the world calling for better investment in surgical services. In less than 2 years, the global surgery narrative has gone from discussions of neglect, burden, and despair, to those of strategy, hope, and collaboration. This is encouraging to say the least; however, we can not rest yet. The positive rhetoric urgently needs to be translated into action to ensure delivery of universal access to safe, affordable surgical and anaesthesia care when needed. We present Dr Kaloko’s speech in full below.

“Excellences, Ladies and Gentlemen,

Let me take this opportunity to welcome you all to this 2017 International Conference on Global Surgery. It gives me great pleasure to see African surgeons and anaesthesiists taking leadership and setting the policy and political agenda for universal access to global surgery. Over the past two decades, significant strides have been made in global health leading to remarkable reductions in death and disability. However, significant challenges remain that includes inadequate investments in health systems, integration of services, and hospital-based care. It is also equally important that we move towards ensuring that global surgery is prioritised in our health systems. Universal access to surgery is an indispensable part of a functional health system.

Recently The Lancet Commission on Global Surgery highlighted the astounding challenges ahead of us:

- 5 billion people lack access to safe affordable surgical services when needed
- Nine out of ten people in developing countries cannot access basic surgical care
- 143 million additional surgical procedures are needed each year to save lives and prevent disability
- Only 6% of 313 million procedures that are undertaken worldwide annually, are performed in the poorest countries
- 33 million individuals face catastrophic health expenditure to pay for surgical services

In most of our countries access to safe and affordable surgical care remains out of reach for over 90% of the population. This results in loss of life and reduced welfare for millions of people, and affects the trajectory towards economic development. Our long-term development vision, Agenda 2063, cannot be achieved if the health of our human capital cannot be assured.

It is therefore imperative that our national governments begin to work on developing national health strategic frameworks that specifically address surgical care within the broader strategy for national health systems improvement. National surgical plans will play an essential role for the proper planning and delivery of services, training and research.

The use of surgical services can be impoverishing for households in the absence of effective financial risk protection measures. In order to improve access to surgical care and reduce the burden on households we must commit to the introduction of health financing mechanisms that
safeguard people from catastrophic health expenditure. This requires expanding the fiscal space for health through moving away from direct health financing mechanisms that rely on out-of-pocket expenditure. We should work to expand the fiscal space for health through indirect financing mechanisms such as general taxation and health insurance schemes.

The Africa Health Strategy (2016–2030) which is aligned to Agenda 2063 and Agenda 2030 provides a clear strategic direction to African Union Member States in their efforts to create better performing health sectors. As the primary consolidative document for all African commitments in the health sector, the added value of the strategy is its ability to inspire, guide and highlight strategic directions relevant to all Member States. It advocates for and promotes Member State action to prioritise and invest in social determinants of health through better inter-sectoral collaboration, highlights the central importance of health systems strengthening priorities and health financing, calls for better leveraging of community strengths and public-private partnerships, and recommends a paradigm shift that helps Member States more effectively manage the risks of disasters in a more systematic manner.

Let me end by reiterating the fundamental importance of putting global surgery on the political and policy agenda of our governments. There is a clear investment case for surgical and anaesthetic services, they save lives, can be affordable and contribute to economic growth and the achievement of Agenda 2063 aspirations. More importantly, surgery is an indispensable part of health care and should be an integral component of a national health system in countries at all levels of development. Surgical care plays a fundamental role in averting death and disability from injuries, maternal conditions such as obstructed labour, neonatal conditions such as cleft palate, and non-communicable diseases such as breast and cervical cancer. Governments must therefore ensure that health policies and services targeted to the prevention of maternal and child deaths, non-communicable diseases and injuries specifically make provision for surgical services in order for these policies to be effective.

I thank you for your attention.”

Opening paragraph written by Koffi Herve Yangni-Angate, with contributions from John Meara, Andy Leather, Lars Hagander, and Justine Davies.
Rebuilding health post-conflict: how and where should we start?

Shadi Saleh and Marilyne Menassa

Countries of the Middle East and North Africa (MENA) region have been ravaged by conflict for many decades, causing the loss of innocent lives and forcing people to displace internally and through borders in search of a safe haven. The health system in many of these countries where conflict has been occurring for the past few years has been rendered almost dysfunctional.

This is especially true with the destruction of the health infrastructures and introduced gaps in the health systems leaving the health needs of millions of people considerably unmet.

Amidst this ongoing regional turmoil, a much-needed plan for direct humanitarian assistance has been put in place to respond to the basic needs of displaced people and their host communities. Less attention has been given to establishing an efficient and sustainable framework that can initiate the process of rebuilding health once displaced people start returning to their homelands.

With this conviction, the Office of Strategic Health Initiatives at the American University of Beirut organised the first international forum in the MENA on “Rebuilding Health Post-Conflict: A Dialogue for the Future” in December 2016, to put forward the timely importance and relevance of starting the rebuilding health process, even before the conflict subsides.

Over the course of eight plenary sessions, national, regional, and international experts from academic institutions, the health-care sector, and non-governmental organisations critically discussed the rising needs of people living in conflict zones, challenges, and recommendations for the post-conflict era, summarised hereafter.

The forum opened with a discussion on the complexity of transitioning from humanitarian assistance to rebuilding health post-conflict. Some states might emerge from conflict with new political leaders who may be seeking power at the expense of reform. Additionally, multiple investors might surface with hidden political agendas, which in the presence of a dismantled response, can pave the way for parallel and inefficient rebuilding systems.

Therefore, a thorough assessment of the prevailing situation is fundamental to setting up a comprehensive, inclusive, and cost-effective scientific model for rebuilding health. The model would ensure active coordination between all health stakeholders and employ an efficient funding framework that can build capacity and expand access to health services. Supporting the stewardship of the
government and maximising the use of public institutional capacity in the model are key to preventing strategic errors such as investing in tertiary health care instead of primary and secondary health care.

Panellists discussed how protracted conflict has been a major driver of food insecurity in the Arab world. A paradigm of programmes that ensures nutrition security and environment sustainability should be developed and adapted to the local context. Programmes on conserving natural resources, addressing the agricultural sector, rehabilitating the market place, and offering food price stability are fundamental. Programmes should also target caregivers and women as the main contributors to restoring livelihoods in the post-conflict era.

Panellists raised concerns about the highly privatised health education systems in the rebuilding process and noted that conflict can often serve as a catalyst to further research and generate a good health education system. Revisiting certain archaic educational models that can no longer keep up with the evolving science is also primary. There is a pressing need to provide equity, stop the brain drain, and invest in local education and training capacities to form entrepreneurial health professionals. Medical education should involve training on treatment in emergencies and reconstructive surgery in trauma. There is also a surfacing need for capacity building in child psychiatry to tackle mental stressors, bullying, and anxiety in children post-conflict.

Social innovators are devising practical solutions to respond to the evolving health needs of people that need legal, financial, and technical support from experts to ensure their sustainability and resilience post-conflict. There is an immediate need to employ the increasing number of people with disabilities and to map the work of social enterprises so that underserved areas can be identified.

Thinking of ways to democratise health and provide everyone with access to the most advanced medical services is of utmost importance, particularly with the continuous brain drain that is changing the landscape of health care in the MENA region. Therefore, technology should be at the forefront of decision-making in health care. Digital health can help in capacity building, especially for the most secluded communities. There is a need to support healthcare providers and prioritise social over financial benefit.

Panellists also discussed the inertia of social systems that can resonate the psychosocial and medical impacts of war events across future generations. Challenges in managing non-infectious diseases such as cancer in refugee settings call for improved accessibility to resources and the development of shorter yet effective protocols. Additionally, the rise in infectious diseases in these settings necessitates proper surveillance methods, emphasised immunisation practices, and rapid response during outbreaks. With the migration of patients and the rise in antimicrobial drug resistance, standardised infection control practices and proper injury documentation are required. A basic package for health services to include family planning and screening for violence, as well as equity for antenatal care, is much needed with the rising fertility rates and maternal morbidity among Syrian refugees in Lebanon.

The Forum concluded with a consultation meeting during which participants from local and international key donor and relief agencies agreed on the necessity of establishing a platform for dialogue on resource mobilisation and donor strategies. Once initiated, such modality can lay the foundations for an effective financing framework that can mitigate the challenges intrinsic to the transition process and ensure a successful rebuilding of the health infrastructure post-conflict.
Cancer organisations must step up on tobacco tax to make progress on cancer prevention

Sally Cowal and Olga Santamaria de Fernández

On World Cancer Day, we mark the many ways we fight cancer and support cancer victims, but our progress seemingly remains outpaced by the growing burden of cancer. No health system and national economy can afford this, so we have a moral, professional, and economic responsibility to do more to reduce preventable cancer cases.

More than 20% of all global cancer deaths—more than 1.93 million avoidable cancer deaths each year—are related to tobacco.

The World Health Organization (WHO) target of reducing smoking prevalence by 30% by 2025 would result in at least 173 million fewer smokers by 2025 and at least 38 million fewer deaths. Health economists from the American Cancer Society have calculated that world average cigarette prices will need to quadruple by 2025 to deliver that reduction in smoking prevalence. In fact, it will require an average 7-fold excise tax increase. A side benefit will be an increase in global tobacco tax revenue, to an estimated 800 billion international dollars annually. These funds could be used to improve health systems and health care—including cancer care.

We believe that means cancer organisations cannot sit back and let tobacco taxes be someone else’s issue. Advocating for tobacco control—and, specifically, high tobacco taxes as a cancer prevention strategy—must be a priority. We are trusted experts in our countries, often with the ear of government, the media, and the public. We have a responsibility to present them with the evidence. Working with people harmed by tobacco is important, but we also need to engage with governments.

It won’t be easy. Tobacco tax increases are the most effective, yet the least utilised tobacco control measure. Sometimes, this is partly due to the finance ministry not realising the potential of tobacco taxation. But almost every time, it’s also thanks to active interference by the tobacco industry. Taking Colombia as an example, it has taken advocates 8 years to secure tobacco tax increases. The tobacco industry managed to derail progress at different stages of the legislative process on a number of occasions. By 2016, Colombia still had among the lowest
levels of tobacco taxes and prices in South America, and the tobacco industry was working with the government to increase Colombia’s tobacco growing areas. No single organisation could overcome this level of influence.

The Liga Colombiana Contra el Cáncer (Colombian League Against Cancer) is a national, non-profit organisation founded in 1960. It strives to contribute to comprehensive cancer control through education programmes that promote healthy lifestyles, implementing cancer prevention strategies, promoting early diagnosis, improving cancer patients’ quality of life—including psychological support—and by delivering specialised cancer care. In addition to the national organisation, the Liga has more than 30 sectional leagues and chapters across the country.

Tobacco control advocacy is a key component of the Liga’s cancer prevention strategy and it is a partner in the Veeduría Ciudadana para el Control del Tabaco (VCCT)—a coalition of citizens and civil society organisations that advocate for the implementation of a comprehensive, human rights to health policy approach to tobacco control. To secure progress on tobacco taxes, the Liga joined forces with other experts and advocates in the VCCT and sought the input of international experts. This coalition—with the Liga as a lead partner and Fundacion Anáas, a local think tank of economists and public health experts, as the technical lead—gathered the evidence, developed the materials, nurtured the relationships with government, and implemented a strategic plan of engagement to overcome the industry’s harmful influence and misleading messaging. The coalition also took advantage of its opportunities: when the Colombian government needed to reform the country’s tax structure, the Liga and its partners stepped up efforts to show the benefits of tobacco taxes. This included sending an infographic to every member of Congress.

It worked. At the end of 2016, Colombia’s parliament agreed to increase tobacco taxes for the next 3 years, potentially increasing the supermarket price of a typical packet of cigarettes from 2900 Colombian pesos (US$0.92) in 2016 to 4850 pesos (US$1.54) in 2019. As part of the plan, tax increases in subsequent years will correspond to the prevailing rate of inflation plus an additional 4%. It is anticipated that this will deliver a 20% decrease in cigarette sales in 2017 and 2018.

No one expects a cancer expert to become a tax expert overnight, but we have the skills to read and use data effectively. We can leverage the expertise and experience of other cancer organisations. As part of the Prevent20 initiative—a global coalition of cancer organisations committed to take action on tobacco taxes—the American Cancer Society’s Economic and Health Policy Research (EHPR) Program has developed fact sheets and tools, including a model that predicts the tax increase necessary for any country to reach the WHO target of a 30% reduction in smoking prevalence by 2025. These are available to cancer organisations and governments in every country. Experts who’ve been successful in increasing tobacco taxes in their own country are happy to provide advice and to act as expert witnesses before other governments. Experts from Uruguay presented evidence before Colombia’s Congress, as did experts from WHO and others.

On this issue, we can make a real difference. Cancer organisations and health advocates have a voice and influence that can help to counter the tobacco industry. We must use that voice on behalf of the millions of voiceless victims of tobacco-related cancer and seize every opportunity to prevent 20% of needless global cancer deaths. This World Cancer Day, we encourage every cancer expert to put tobacco taxes on their agenda and to join us in the Prevent20 campaign.
Global surgery in Latin America

Nivaldo Alonso and Vitor Moutinho

Latin America is joining the global surgery movement. Through strong representation in the Lancet Commission on Global Surgery (LCoGS) and advocacy from national champions, the African and South East Asian regions are redefining global surgery from a “neglected stepchild” to a major component of global health.

In Latin America, individual efforts towards understanding surgical care as a global health concern have been made, especially in Brazil, but the region’s collective voice has been less prominent. This inspired the congregation on 7 December 2016, of 55 surgeons, anaesthetists and policy-makers from nine Latin American countries in São Paulo to discuss how best to collaborate in implementing LCoGS findings.

The meeting recognised the many broad challenges in global surgery that are shared across continents. For example, delegates sympathised with realities of implementing global surgery scale up in India—a country that, like Brazil or Mexico, is a large and disparate emerging economy. However, group discussions identified issues specific to Latin America. Within the workforce, whilst much of Africa experiences a dearth of providers, in Latin America maldistribution was noted to be the main challenge. Similarly, within finance, Africa’s requirement for new infrastructure investment can be contrasted to declining public sector spending in Latin America, particularly in Brazil where a 20 year spending freeze recently passed. Delegates concluded that in Latin America, improved management and efficiency should be prioritised. To achieve this, delegates identified the need for improvement of data fidelity and analysis. Unlike some other contexts, in much of Latin America data is collected, but the quality is variable and it is rarely used to drive management decisions.

For the first time in Latin America, delegates from each participating country committed to expanding global surgery work. There was a resolution for continued regional collaboration, with regular opportunities to reconvene and share implementation solutions. For sustainability, the establishment of global surgery research hubs in two Brazilian universities were proposed. These would serve to build longitudinal careers in global surgery research and support surgeons working in the periphery. There was also a commitment to improve and share data collection in a number of countries through collection of the six indicators proposed by LCoGS.

Meetings such as this, the first of its kind in Latin America, take a step towards the unification and amplification of regional global surgery efforts and ensure systematic progress is made towards improving access and quality of surgical care.

Co-authors: Saurabh Saluja, Isabelle Citron, Julia Amundson.
Global health and Mr Trump’s “new world order”

Chris Simms

A recent study of 268 political parties in 31 European countries shows that a key factor explaining the rise in populism is the emergence of neoliberalism that began in the 1970s. The Brexit vote, the election of Donald Trump, and trends in European elections are described in multiple quarters as part of a new world order. Yet what passes for a “new world order” may in fact be no more than a continuation of the neoliberal juggernaut transiting from one era to another, to emerge stronger and more daunting than ever. Past experience suggests that this does not augur well for global health.

British Prime Minister Margaret Thatcher (1979–1990) and US President Ronald Reagan (1980–1988) sparked the rise of neoliberalism with their “conviction politics”; they eschewed various policy options derived from the post-war consensus and instead extolled unfettered competition and individualism. Thatcher’s notion that “there is no such thing as society” captured the sentiment. Over the ensuing decades, these ideas, values, and attitudes became institutionalized and helped usher in for example, Bill Clinton’s welfare reform and repeal of the Banking Act and Tony Blair’s deregulation of financial institutions (1997) while simultaneously evading serious environmental legislation. Today, deregulation is at the top of the Trump agenda (see figure).

The impact of neoliberalism on global health has been controversial. For example, commenting on the leverage used to implement structural adjustment in poor countries, a senior World Bank economist stated “policy-based lending is where the Bank really has power—I mean brute force. When countries really have their backs to the wall, they can be pushed into reforming things at a broad policy level that normally, in the context of policies, they can’t”.

An example of this is revealed by the World Bank’s response to Africa’s HIV crisis. The bank’s own documents show how, as lead donor in Africa’s health sector in the 1990s, it explicitly and repeatedly sought (and succeeded) to deprioritize AIDS in favour of its neoliberal health reform agenda. Although improvements in the way health care was financed and delivered were badly needed, HIV rates were soaring and called for immediate action. The World Bank warned that “an expanded role of the Bank in AIDS should not be allowed to overtake the critical agenda for strengthening health systems”. Bank documents show that as trends emerged in the 1990s, “AIDS was even less strategically prominent in the Bank’s health sector strategy” so that by 1997 a paltry US$3 was allocated for each infected African. Then, as if to underscore that the neoliberal juggernaut was oblivious to the plight of ordinary people, a World Bank report concludes “these allocations are remarkably large relative to national spending on the same problem and...
probably in comparison with current international spending on any other disease. Perhaps only the international campaign to eradicate smallpox in the 1970s benefited from such a large preponderance of donor funds.” By the end of the decade 30 million Africans were dead or dying.

Two financial crises exemplify deregulation’s impact on the wellbeing of ordinary people. The East Asian Financial Crisis (1997-98) and the Great Recession (2008) became bookends for a spate of aggressive deregulation initiatives taken over a 10 year period. In East Asia, the free-flow of capital and poorly regulated banks eventually led to taxpayers footing the bill to “right the ship”. In Indonesia for example, the International Monetary Fund (IMF) “persuaded” governments to cut spending in order to repay western banks, leading to a 25% cut in primary health-care spending, a decline of between 26% and 47% in the uptake of services such as clinics and health centres (used mainly by the poor), and a 25% fall in the percentage of children vaccinated. After decades of steady improvement in life expectancy, infant mortality increased in 22 of 26 provinces by an average of 14% between 1996 and 1999. The tragedy was worsened by the international financial institutions’ failure to select the best data available to describe health outcomes—choosing data that instead painted a rosier picture.

Indeed, a key feature of this rise of neoliberalism is the tendency to ignore or deny unwanted data or to cherry pick for those that suit the purpose—the so-called “post-truth”. For example, American government scientists are reported to be frantically copying climate data for fear they may be destroyed after Barack Obama leaves office—prompted perhaps by the nomination of the CEO of Exxon Mobile to head-up the State Department. This, the world’s largest oil company, is under investigation by 17 attorneys general in the USA for allegedly suppressing data on the risks of climate change. Other data that are being ignored by Trump and all his cabinet nominees are those that show that the percentage of Americans uninsured is now at historic lows. Under the Affordable Care Act, 13 million Americans now have health insurance through marketplace programmes and another 20 million have been added to insurance or expanded Medicaid role. The stated goals of the incoming government is to “repeal and replace” Obamacare.

The figure shows neoliberalism’s trajectory becoming more linear and focused and, perhaps, benefiting increasingly fewer. Indeed, the rising levels of inequalities since the 1970s, once framed in terms of the elite 10%, are now often cited as the top 1% or even the world’s 2500 billionaires. Many observers have noted that, despite Trump’s railing against Wall Street and elites, his nominees are now described as the “cabinet of billionaires”. Their wealth is estimated at US$14 billion—that is, 50 times greater than that of George W Bush’s cabinet. If this is a “new global order”, it is one marked by irony. The rise of “unfettered competition and individualism” and dramatic unravelling of regulations are a threat to the values and ideals of local and global health and to the wellbeing of many of those who supported Trump. For example Steven Mnuchin, the nominee for Secretary of the Treasury (which plays a dominant role in World Bank and IMF lending), a banker at the center of thousands of foreclosures of subprime mortgages, said his main focus is “making sure we scale back regulation”. A former bank executive noted that Mnuchin “is an ideal emissary of Wall Street”; in contrast, a retiree who voted for Trump, said upon learning of the nomination: “they all promise you the world at the end of a stick and take it away once they get in.”

At a time normally marked by a sense of hope and renewal, much of the global community feels uncertain and, in many quarters, trepidation about what lies ahead. A four-page memo circulated by Trump’s transition team to the State Department and reported in the New York Times this past week indicates an overall scepticism about foreign aid and humanitarian assistance and depicts a sharper focus on US business interests. It asks, for example, “Why should we spend these funds on Africa when we are suffering here in the US?” If the answers to this and related questions are unknown, then the next 4 years may indeed give new meaning to neoliberalism and perhaps conviction politics—both at home and abroad.

Reference

Expanding access to medicines and technologies by expanding the dialogue

David C Kaslow and Craig Friderichs

Over the past year, several international expert groups, including a UN panel and The Lancet Commission on Essential Medicines, have wrestled with the challenges of ensuring equitable access to medicines and health technologies. Expanding access is fundamental to achieving optimal health impact and reaching the goal of universal health coverage. But for all this high-level attention, the access conversation so far has been too narrowly focused.

To truly accomplish the goals of universal access, the world needs a more comprehensive and nuanced dialogue, to ensure that we are drawing upon the experiences of a wide range of contributors from all sectors and geographies, including those that have actually developed affordable innovations and created markets that incentivise taking them to scale. It will be essential for new leaders taking the helm this year at the UN and the US Government—one of the leading donors in global health—to carry forward this important issue and foster an inclusive dialogue that leads to meaningful action. Here are key steps that they should take:

Bring all relevant players to the table
Sometimes the best way to increase health access is to build a road or a hospital, sometimes it is training health-care workers, and other times it is changing incentives or policy. There is no single magical solution. Governments, the private sector, international partners, civil societies, and citizens themselves all can positively contribute to increasing access by improving availability, affordability, acceptability, and sustainability.

Low- and middle-income country governments must prioritise health, meet commitments they have made to strengthen their systems, and ensure existing health products reach all who need them, while at the same time fostering domestic innovation to create solutions to their unique health challenges.

Civil societies and communities should hold their governments accountable to these commitments. International organisations and donors should leverage their resources to work in partnership with country leaders and civil societies to ensure sufficient and robust health system and service capacity.

We must take a thoughtful approach to appropriately incentivise the private sector to come to the table and develop robust, long-term partnerships to innovate and invest in filling unmet needs, particularly in markets that are not inherently healthy.

Set priorities based on evidence
Too often past efforts to expand health access failed because the proposed solutions were not based on truly
understanding local needs. There is nothing more frustrating for anyone dedicated to meeting an unmet health need than seeing a new product that took years and millions of dollars to develop sit unused because the context where it will be used was not comprehensively considered (such as unreliable power sources, capacity of proper storage facilities, training requirements for providers, end-user demand, and so on). This is why many product developers, including PATH, now employ user-centred design, and work in close partnership with future users from the very beginning to plan for all aspects of access—from appropriateness of design to affordability, availability, acceptability, and sustainability.

In addition, government officials and health workers responsible for providing services, procuring medicines, and introducing new technologies should have both a line of sight on and input into which health innovations are prioritised for research and development. Local and regional manufacturers and distributors should be involved early to share their knowledge of the markets they serve and to ensure incentives are appropriately aligned for long-term engagement in markets with high need. Feedback is essential to ensure that policies and markets adapt to changing economic, social, and political realities.

**Strengthen systems and markets**

Much of the dialogue on access focuses on policies to get affordable, high-quality products through the development pipeline. However, changes in policy alone will not get the job done. Further, the overemphasis on development can lead to underinvestment in anticipating and addressing issues that will arise in delivery of these products—before these issues become insurmountable barriers.

Successful delivery at scale requires strong health systems, including well-functioning supply chains, together with a robust and well-trained health-care workforce that can use and distribute essential medicines and health technologies appropriately.

Weak markets are also significant barriers to access, as most commonly identified by stockouts or the circulation of poor-quality products. Addressing these and other market problems requires engaging all market actors and directly addressing the root causes that limit product introduction, procurement, distribution, and affordability. Governments and civil societies should engage the private sector—which is not only essential, but also generally more nimble and efficient in catalysing change—as a full partner in realising access.

**Invest in regulatory and in-country innovation**

Inefficient (or ill-defined) regulatory processes have been identified as a major roadblock to the development and delivery of quality-assured essential health technologies. To address this, *The Lancet* Commission proposes to expand WHO’s Prequalification Programme to regulate new essential medicines. We do not think this is the complete answer. While the prequalification process plays a vital role, expanding its mandate is not a long-term solution. Building local and regional regulatory capacity should be the ultimate goal, with WHO playing a strong supporting role.

In addition, prequalification in and of itself does not ensure access. Products from artesunate for severe malaria to zinc for diarrhoeal disease have been prequalified yet still are not optimally used in all settings. We must tackle the root problem of access in a particular context, recognising that there is no single solution to all access challenges.

The expectations and prospects for achieving universal access to essential medicines and health technologies are greater than ever. Yet changing disease burdens, evolving economies, and shifting demographics, particularly in low- and middle-income countries, require smarter and more flexible approaches that inclusively engage all key stakeholders primed to have impact—from across sectors and geographies.

We hope that new leaders will carry forward this important agenda and expand the dialogue to bring in voices and experiences that can contribute to overcoming barriers to access. Not doing so will take us backwards rather than forwards in meeting the challenges that low- and middle-income countries face in delivering on the promise of universal health coverage.
Treating undernutrition in Borno State, Nigeria: adapting strategy in emergencies

Kerstin Hanson

Crises with alarming levels of malnutrition-related child mortality are complicated contexts, given that the world’s most critically malnourished also often face conflict, displacement, and even famine. This has been the case in northern Nigeria’s Borno State, where Medécins Sans Frontières (MSF) has been responding to an unprecedented food crisis related to conflict between the Nigerian armed forces and the militant group Boko Haram. In Borno, well-established international malnutrition protocols may be ill-suited to realities on the ground. In extreme conditions such as these, how can organizations adapt established protocols to develop context-specific strategies and prevent malnutrition-related deaths?

Since 2015, MSF has opened both inpatient and ambulatory therapeutic feeding centres in the state capital, Maiduguri, and in towns and displaced person camps in surrounding areas. An influx of displaced persons has almost doubled the population of Maiduguri, now estimated to be nearly 2.5 million people, and entire rural villages have relocated to towns and camps around the state. In 2016, nutritional screenings in Borno revealed acute malnutrition levels of up to 50% among <5-year-olds, along with catastrophic child mortality rates, in some places as high as four times emergency thresholds.

Given the immense needs and complex environment—a vast population, few humanitarian actors, limited resources, and many extremely insecure or inaccessible areas—we at MSF have had to simplify our approach by deviating from certain elements of established community management of acute malnutrition (CMAM) protocols. These strategies build on prior experience from other countries, but have never been used in such a large-scale emergency. For instance, we screen for malnutrition by measuring children’s mid-upper-arm circumference (MUAC) using colour-coded paper bracelets, but eliminate weight-for-height Z-score calculations (the complex classification system used in international guidelines). These MUAC measurements alone (along with the presence of bilateral oedema) are used during outpatient consultations, for admission to and discharge from inpatient therapeutic feeding centres, and for following progress during treatment. In Borno we see many advantages to this approach. It allows us to screen and treat more children faster, and to better identify those most at risk of death. MUAC measurements are also simple enough to be used at a village level by community health workers, and MSF emergency teams can easily combine MUAC screenings with other...
interventions such as measles vaccination campaigns or food and bednet distributions.

Another adaptation in Borno has been to expand the admission criteria for our therapeutic feeding programmes to identify and treat patients before malnutrition becomes life-threatening. Traditional CMAM programs treat moderate acute malnutrition and severe acute malnutrition separately, requiring distinct patient flows that demand double the human resources, structures, and supplies. But in extremely resource-limited settings, treatment of more dangerous severe acute malnutrition is prioritized—with the unintended consequence that treatment of moderate acute malnutrition may be neglected. Our Borno teams avoid this by managing both categories of patient together, replacing the somewhat arbitrary standard diagnostic cut-off between moderate and severe cases with a “sliding scale” that adjusts MUAC admission criteria to an evolving context. Factors such as food security, overall levels of malnutrition, mortality and co-morbidity rates, and the local presence of other humanitarian actors and resources all help determine which children to include in treatment. As the context stabilizes and more resources become available to meet the needs, these criteria can be returned to traditional benchmarks.

Further, to increase overall access to treatment while still prioritizing the most vulnerable, all acutely malnourished children receive the same therapeutic food, but in doses adjusted to their severity. Giving children with moderate acute malnutrition half doses prevents their condition from deteriorating and, since they are often also immunocompromised, helps them fight infectious disease.

Finally, in the most dangerous and remote areas of Borno, we use a “one-shot” strategy (so-called because our team may only have one chance to reach a site or group of people). We have used “one-shot” teams in places such as in Bama, a town on the frontline of the conflict between the Nigerian army and Boko Haram, and continue to do so in other locations in the state. These teams can typically stay for only a few days, and do as much as possible while there to reduce morbidity and mortality. This includes MUAC screening, outpatient consultations, vaccination, seasonal malaria chemoprophylaxis, and distribution of both food and non-food items such as soap, blankets, and mosquito nets. Like the teams within Maiduguri, “one-shot” teams encounter huge malnutrition burdens and also diverge from established CMAM protocols. Under intense time constraints, they rapidly identify acutely malnourished children with MUAC and then give caregivers up to a 1-month supply of ready-to-use therapeutic food, plus instructions for its use and for monitoring their child. We also target standard food rations to these families, as well as to pregnant and lactating mothers. While providing more than the standard 1- to 2-week dose of ready-to-use therapeutic food may increase the possibility of some diversion or misuse, the alternative of not leaving therapeutic food behind would almost assure that these children deteriorate, and many would die.

These adaptations are not perfect. Some of these adjustments lack the solid evidence base that underpin traditional CMAM approaches, and monitoring is difficult with highly mobile populations and longer follow-up periods. To address these challenges, we are improving community surveillance models and increasing our overall data collection and analysis, continuing to adapt, improve, and learn as the crisis unfolds. Yet we also believe that flexibility is needed when lives are on the line. When working in some of the most acute emergencies, context-specific interventions allow us to intervene more effectively.
The digital health revolution: what does it mean for emerging markets?

Monique Mrazek and Xiaomin Mou

Improving access to quality and affordable health care is a challenge for every country. This is particularly so for emerging markets with scarce public resources, inadequate health care infrastructure, and shortages of trained health professionals. Digital health offers new ways to deliver health services, and could arguably bring the most benefit in addressing gaps where health care challenges are the most severe.

When we hear the term ‘digital health,’ it is sometimes used interchangeably with the terms ‘connected health,’ ‘e-health’ or ‘mobile health.’ These all refer to the ever-evolving concept that encompasses the harnessing of digital technologies, social networks, mobile solutions, data, the cloud, wireless sensors, and other health IT information solutions to deliver health care in a remote and virtually connected way. This is a rapidly growing segment: according to CB Insights, $5.8 billion was invested in it in 2015, a trend which continues in 2016.

The International Finance Corporation (IFC), the arm of the World Bank Group that invests in the private sector in emerging markets, is actively looking to support the evolving digital health trend. This year, IFC launched TechEmerge, a matchmaking program that aims to accelerate technology deployment in emerging markets. The first pilot of the program connected health sector innovators from India and abroad to leading health care providers in India. Many of the Indian health care providers prioritized digital health solutions, recognizing these could enable them to deliver care and reach underserved patients in a new way. As a result, a number of the solutions being piloted through the program have a digital health component.

IFC is also seeking investment opportunities that support the digital enablement of health care through its dedicated Venture Capital group that invests in technology-driven businesses around the world. One such example was IFC’s investment in Portea Medical, India’s leading home care provider that is highly digitally enabled. Portea leverages mobile apps, connected diagnostic tools and monitoring solutions that enable shared information to deliver care more efficiently and ultimately bring better outcomes to its patients.

Sub-Saharan Africa

In sub-Saharan Africa, the rapid mobile internet penetration, including increasingly smart-phones, has given a boost to the deployment of digital health. A variety of mobile health apps have been built with government and NGO support, particularly in the area of maternal and child health. Increasingly, commercial digital health solutions...
developed on the continent, and addressing pain points of health care delivery for patients in Africa, are starting to emerge. Beyond health services, digital health application in pharmaceutical distribution and supply chain could reduce counterfeits, and add transparency to drug pricing and utilization, all challenges that have been long overdue in being addressed.

Challenges remain on the infrastructure side to support wider deployment of these solutions in Africa, including the need for improved data network coverage. Nevertheless, entrepreneurs in Africa, as in other emerging markets, have a blue ocean to leapfrog Western health care models and build a new paradigm for health care delivery.

Encouragingly we are increasingly seeing innovative health service delivery models in Africa and many other emerging markets that leverage digital health to reach patients beyond the main cities, in lower income segments, and at a more affordable price point.

Challenges Remain
Looking to the future, if we wish to further realize the potential of digital health, global health researchers and practitioners will need to consider regulatory and policy frameworks. The right balance needs to be considered, for instance, between ensuring that an individual patient’s health data remains private and secure, while enabling its aggregation in a de-identified manner to support analytic tools that benefit the wider population. In some cases, existing patient data laws limit video or mobile consultations between patients and health providers. These restrictions may need to be reconsidered if allowing these services offers a net economic benefit to patients and health systems alike. Some regulatory reforms, such as allowing for electronic prescribing, seem like a clear opportunity to improve efficiency, transparency and most importantly patient outcomes.

While the private sector may be more nimble-footed to quickly take up digital health solutions, the benefits to the public sector are equally clear and global health researchers and practitioners should also be considering how governments can be preparing a path to integrate these solutions to the benefit of all. As more digital health solutions emerge and integrate in care settings, global health researchers and practitioners should evaluate the emerging models for impact, affordability and sustainability, amongst others.

As innovation continues to create new technologies, and obstacles to deploying them are overcome, the global health community should continue to embrace and promote digital health as a new pillar toward achieving pro-development health outcomes.
Doctors worldwide speak up for healthier energy choices

Vijoleta Gordeljevic

This year’s international climate negotiations in Marrakech (COP22) provided another opportunity to put health high on the climate agenda. Evidence linking fossil fuels to negative health impacts is plentiful with air pollution often cited as one of the most obvious and visible consequences of the world’s reliance on coal, oil and gas. The Health and Environment Alliance (HEAL) joined the discussions in Morocco to show examples of how doctors and other health and medical professionals can be highly effective in demanding better air quality and urging an end to fossil fuels.

During COP21 last December in Paris, more than 13 million doctors, nurses, and other health professionals issued a call to action expressing their concerns about the health risks arising from the world’s reliance on fossil fuels. They called for health to play a central role in climate change considerations. Just a year later, at COP22 in November 2016 in Marrakech, the global public health community showed that it is quickly moving ahead, having implemented various actions worldwide. These actions are aimed at climate adaptation and mitigation, and also specifically target the improvement of air quality to achieve a decrease in the seven million deaths worldwide from air pollution.

Health and medical professionals can play an extraordinarily significant role in the transition to a sustainable world: their voices are highly respected by politicians, the media and the general public, they have a good sense of their power to influence, the privilege and opportunities of their position, and the moral obligation that goes with their role.

There are multiple examples illustrating how doctors from general practitioners to specialists have helped change energy decisions by speaking to the right people, at the right time, on the health impacts of air pollution. For the first time in COP’s history, the health community had a chance to showcase this engagement during the Health Action Day on November 11. The event was organised under the leadership of climate champions Laurence Tubiana and Hakima El Haité in cooperation with WHO. HEAL was one of the organizations from many different parts of the world to share examples of health sector engagement for climate action.

HEAL’s contribution was to highlight the efforts of doctors who have become climate change warriors. The following examples illustrate the value of medical involvement in delaying the construction of new coal plants.

**Bursa in Turkey**

In 2015, the citizens of Bursa faced the prospect of a new coal power plant to be built very close to human settlements. Air pollution in the city was already above both WHO recommendations and the limits set in Turkish law. In response to this situation, various health actors, such
as the Turkish Medical Association, the Society of Public Health Specialists, the Turkish Thoracic Society and others, launched a platform to coordinate their efforts against the project. Medical doctors spoke to local politicians, residents and patients, and were involved in intense media work. The evidence of the likely health impacts of the project drew heavily on a report: *The Unpaid Health Bill: How Coal Power Plants in Turkey Make Us Sick*, published by HEAL, which estimated the health costs from coal combustion in Turkey at between 2.9 and 3.6 billion euros per year. After months of struggle, the platform succeeded in taking the management of this plant to court. The public health impacts of coal-fired power plants were among the key arguments of the court hearing, which resulted in the temporary cancellation of construction plans.

**Leczna in Poland**
Polish coal pollution kills around 3500 Poles every year. In 2015, a large new coal power plant was due to be constructed in Leczna, Poland, however, thanks to efforts of doctors and health evidence, the project is now on hold. First, local health professionals and others reviewed the potential health impact of the new plant. Its likely health costs were calculated at between 875,000 and 2.8 million euros in the Lublin region (100 km radius) each year. These costs stemmed from early deaths, an increase in chronic bronchitis in adults, additional cases of bronchitis in children, as well as productivity losses. The health evidence and health costs were presented to a public consultation. This medical input, among other considerations, resulted in the temporary shelving of construction plans for this power plant.

**Tamil Nadu in India**
When the residents of pollution-stricken Tamil Nadu were confronted with a very high energy coal-fired project back in 2007, they got together and managed to block the land acquisition for the project for almost nine years. They cited pollution and health effects along with other environmental concerns. Residents and key groups persistently showed up at all hearings. This included representatives from the Tamil Nadu Electricity Regulatory Commission who highlighted data from health experts and the results of environmental monitoring over a nine-year period. Eventually the proposal was shelved—but that was not until August 2016.

Bursa, Leczna and Tamil Nadu are just three examples of how doctors are successfully fighting for healthier energy and better air. While there is still much work to be done to ensure that “the right to health” becomes a core component of climate actions worldwide, the health sector is making its voice heard. As a result, they are benefiting the local population, contributing to climate action and taking us closer to the fulfilment of the Paris Agreement.
Tackling neglected tropical diseases through human security

Keizo Takemi and Mirta Roses Periago

“Fall down seven times, stand up eight.” This Japanese proverb encapsulates the many challenges on the road to achieving human security for all—life without want, without fear, and in dignity through the fulfilment of basic needs—and emphasizes the need for creativity, flexibility, and constant innovation to achieve this broad-ranging mandate. Such a creative focus on human security and people-centred development can help fast-track efforts to build healthy, resilient communities around the world.

Discussions on health and human security have evolved over many decades, with Japan leading conversations to shape the concept. Sadako Ogata—a prominent Japanese expert—co-chaired the groundbreaking 2001 UN Commission on Human Security with Nobel Prize Laureate Amartya Sen. The UN report urged the international community to secure a healthy future for individuals and communities and to build a strong foundation to confront new threats.

Importantly, the human security framework mandates that we must apply multifaceted and participatory approaches to secure security at the individual level. Tackling threats posed by pervasive diseases in this way not only improves health, but also acts as entry point to build resilience and capacity.

Since the initial UN report was released, we have worked together over the years to link health and human security for tangible change. In 2010, a PAHO resolution on “Health, Human Security and Well-being” was approved, encouraging member states to mainstream health security into country health plans. An operational framework, Health Security: Implications for Public Health followed in 2012. We developed these documents by reviewing lessons learned from previous pandemics, like cholera outbreaks in Peru in the 1990s and the emergence of HIV/AIDS as a global threat to human security. Those same lessons hold true for today’s threats like Ebola and Zika.

We are excited to see Japan and PAHO pool their expertise again with a recent 2016 joint report by PAHO and the Japan Center for International Exchange, Health, Resilience and Human Security: Moving Toward Health for All. That expertise is being applied in our collaborative efforts: Japan, through the Japan International Cooperation Agency, and PAHO member states have established an undeniable track record in addressing neglected tropical diseases (NTDs)—infectious diseases of poverty that affect one in six people worldwide—through the lens of human security.
The progress of joint Chagas disease elimination projects in Central America represent an excellent example of the multisectoral approach of human security to examine and address the complex factors and determinants of endemic diseases, such as housing, water and sanitation, access to information, and education. The Chagas project was customized to meet local needs, build capacity, empower people and communities, and ultimately help them become more resilient to the threats they face on a daily basis.

When people live with the risk of slipping into a devastating illness with no hope for care or support, entire communities are held back from reaching their potential. It is urgent that we close the books on lingering health problems and build resilience by giving the next generation a world free of NTDs.

Right now, we have an immediate opportunity to do so. Trachoma and onchocerciasis are on the verge of elimination. The treatments are available free of charge thanks to donations by major pharmaceutical companies. Elimination of NTDs will be a powerful measure of success in reaching the world’s most marginalized with basic health care, providing a litmus test for universal health coverage.

At the global level, Japan has set the pace to achieve the health-related Sustainable Development Goals, with a conference on universal health coverage taking place in Tokyo two weeks before opening the G7 Presidency. In May of this year, Prime Minister Shinzō Abe pledged a $11 billion package for the health sector to enhance emergency response capabilities, setting the stage for people to bounce back quickly from future health threats. This announcement adds to Japan’s ongoing efforts to boost research and innovation through the Global Health Innovative Technology Fund and UNITAID. More recently, Prime Minister Abe pledged $30 billion as part of a new African partnership—investments that will tackle neglected tropical diseases and unlock new education and vocational training opportunities.

If new actors follow Japan’s lead, we can free people from despair, replacing it with hope and a vision for the future. Together, we can share knowledge and take collective action to reach NTD elimination.

It is time for individual countries and high-level partnerships to galvanize their political leadership and set the pace by making concrete commitments to control NTDs through the human security approach. We can sustain many lives beyond survival—focusing on livelihoods, well-being, and dignity.
Expanding universal health coverage from the ground up

Stefan Nachuk and Nathaniel Otoo

Advocating for universal health coverage (UHC) is one thing; designing and implementing health system reforms to make it possible is another story. The Joint Learning Network for Universal Health Coverage (JLN) partners with countries to jointly develop resources, including DIY guides and interactive tools, that address the “how to” of everything from how governments can engage the private sector in primary health-care delivery to how governments can assess their provider payment systems. What have we learned since the initiative was launched in 2010?

In just over 6 years, the JLN has grown from an idea to a key global knowledge exchange platform for UHC. This growth—and the progress that’s been made since 2010—was evident at the network’s first global meeting, which was held in Malaysia earlier this year. Countries shared examples of how they had put JLN tools into practice and they co-developed an expanding technical agenda focused on both the financing and delivery of health care. With nearly 30 countries actively involved, the JLN is rapidly increasing the number of technical collaboratives and strengthening its partnership with other global networks, such as P4H and the new UHC 2030 Alliance, to expand its reach and help countries overcome persistent barriers to achieving UHC.

Co-creation of knowledge products and policies is key

Technical learning collaboratives are the heart of the network. Countries join and actively participate because they want to extract concrete value in terms of technical solutions and implementation insights for their own policy challenges and to co-develop new, practical knowledge that can help them improve their systems, and not because they need to be part of yet another community of practice or global entity. The process of co-producing products is as important as the final result—members consistently say that they value the opportunity to devote time to this kind of effort because the process and products help them succeed in their jobs at home, and offer them exposure to approaches and experiences that they would not otherwise have had. When structured well, this work feeds directly into urgent policy and practice challenges within member countries by producing products and findings that policymakers need to advance priority objectives. A recent JLN member survey found that 60% of members had adapted JLN knowledge products in their country context.

Stability of membership and quality of facilitation help determine success

Within these collaboratives, both the quality and stability of membership and the quality of facilitation are key to the success of the JLN. These collaboratives are more than just a meeting or webinar; they are a long-term commitment to learning and improvement. The JLN facilitates collaborative learning around five technical areas of focus:

- **Population Coverage**: Improves coverage across the population that requires it.
- **Primary Health Care**: Improves access to preventive and primary care health services.
- **Provider Payment**: Ensures that reforms are financially sustainable.
- **Information Technology**: Accelerates the development of national health information solutions.
- **Quality**: Ensures patient safety.

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factors in determining success. These collaboratives normally exist for about 2 years, time enough to plot out an analytic framework, review intermediate products, and co-produce final guides or tools. Thus, stable membership among country members is vital to the success of these efforts—getting value from the process requires the same people iteratively working together and jointly problem-solving over time.

**Facilitators are the “secret sauce”**
Facilitators must have a special set of skills that include both subject matter expertise and the ability to design and facilitate an “analytical journey” without overtly leading it. This expertise is often not immediately obvious or visible in most cases, but is vital to eliciting the tacit knowledge that JLN members possess. Thus, they must be able to help members surface and articulate their insights in a structured manner that keeps collaborative members highly enthused and which helps them collectively move towards the creation of high-quality, policy-relevant analytical products. It’s fair to say that we’ve learned that facilitators are the “secret sauce” of JLN—not always highly visible, but essential to its success.

**Put practitioners and policymakers in the driver’s seat**
It is not only the approach to developing, codifying, and using knowledge that differentiates the JLN from donor-led technical assistance. The network’s governance arrangements promote country ownership, placing practitioners and policymakers at the centre of its knowledge-generation efforts. The existence of a country-led JLN steering group dominated by country members is central to the legitimization of the network in the eyes of many existing or potential members. The steering group plays a dual role of both identifying priorities and of signalling to the world that the network is ultimately accountable to country members, not to donor agencies. This signal is important for many members, as one of the most consistent frustrations articulated by members focuses on trying to engage with a complex and at times contradictory set of interests and demands by external donors. By enabling members to take control of their own destiny, the JLN is trying to reverse the normal accountability arrangements that exist between donors and recipient countries without compromising the ability of donors to achieve their broad objectives.

At the foundation of the JLN are the member countries, which comprise highly committed policymakers and practitioners who bring their energy, expertise, and practical experience to the network. Increasingly, JLN members are forming country core groups to link the key government agencies responsible for UHC at the country level, cultivating a culture of continuous UHC learning and enabling the translation of knowledge between the country and global levels.

**Looking ahead**
Next year will be an exciting one as the JLN expands its technical programme of work and creates a renewed vision and strategic plan for the next 5 years. Through this joint learning approach, countries can accelerate progress toward strong, integrated health systems for UHC. UHC will continue to be a central global health priority, and JLN is one of the main enabling vehicles for countries to pursue this objective.

Additional contributors to this post are Amanda Folsom (program director, Results for Development); Somil Nagpal (senior health specialist, The World Bank); and Modupe Ogundimu (general manager, Nigeria National Health Insurance Scheme, and JLN Steering Group Co-Convener).
Understanding cultural female sex work in India and why tradition must be challenged

Abraar Karan

In the outskirts of New Delhi, India, live the women of the Perna, a nomadic tribe in which sex work is held steadfastly as tradition. Among Perna, girls are married only to families within their tribe, usually when they have reached menarche, and are subsequently forced into sex work by their husbands and in-laws. I lived with the Perna for several months as a researcher trying to understand how sex work in the context of cultural norms defined Perna girls’ perceptions of their lives within their communities and families. Furthermore, I was interested in how familial, communal, and cultural pressures led to the marginalization of health.

One of the main questions of my work was to dissect the following: was this something these women wanted to do? Through my interviews with Perna women who were only months into their lives as sex workers, as well as those who had not yet started, it was clear that there was an element of force behind their rhetoric of “tradition”. For the few women who tried to resist, they were raped by their husbands and beaten by their mothers-in-law. One woman told me that she ran away to return to her parents who, partly to her shock, also tried to explain to her that this was the work of their caste.

There were a handful of cases in which families left the tribe, but they were ostracized by the public, leaving them without a place to start anew. Because of community solidarity within the Perna, leaving is very difficult and becomes a permanent decision. Thus, most women don’t choose to do so. Moreover, there is no economic alternative that has quite the payout.

However, not all women shared disdain for their work. For some, the work was simply a part of their tribe’s history. “My mother did it. My grandmother did it. And now I will do it,” explained one young woman. Many men were quite casual on their views: “This is our work—we have always done this work.” Village elders were similarly matter-of-fact. For others, it was primarily a means to an end. A middle-aged woman, Salma, told me that if not for her work, her family would go unfed. Her children would not have clothes to wear to school. And that her husband would work if he could. As far as she was concerned, the responsibility fell on her.

Imagine being a Perna girl. From a young age, you see your older sisters, cousins, aunts, and mother leave with clients every night. You are bullied in school because of your background; your closest friends are all in the same boat as you are; you have been sold by your parents (the Perna use a bride price system, as opposed to the traditional Indian
dowry) for an amount of money; your community watches you closely; your in-laws will harm you if you try to resist. What are your options but to say, “This is my culture”?

While there are a number of “cultural” sex worker tribes in India, including Bedias, Kanjars, Devadasis, and the Nats, they all function on the same premise: women are meant to be sexually exploited. They thrive off of a power dynamic of misogyny. Men do not work, and often squander money on drugs and alcohol, while wives, sisters, and daughters are emotionally and physically sold for sex.

There is a strong movement in the trafficking world calling for a distinction to be drawn between “sex work” and “sex trafficking”. Traditionally, we think of trafficking as the movement of bodies through force and deceit to new locations, mainly in brothels, where they earn money for their pimps and madams. This is in contrast to autonomous sex work, through which the sex workers’ rights movement has grown.

I believe that those in “cultural” sex work are neither autonomous, nor happy. And they certainly are far from safe. In focus group discussions, Perna women were adamant about the need for services addressing sexually transmitted diseases, safe deliveries, protection from violence, family planning, and mental health. They were afraid of losing hope, as they claimed many of the older women already had. This may have explained why many times, when I asked if this was something they wanted to do, I was met with laughter.

For most of these tribes, sex work is not technically “tradition”. The British Criminal Tribes Act in 1871 forbid performing communities such as jesters, snake charmers, dancers, acrobats, and others from their traditional livelihoods. Many of them turned to sex work in subsequent years, and have since adopted it as their own.

In global health, we are often warned of the risk of paternalism and judgment on cultures different from our own. We are told that what is “wrong” in a Western context may be understood very differently elsewhere. And yet, in sitting across from these women and in hearing their stories, something just felt off at a very human common denominator. Suffering is suffering, whether it is in the USA or in a rural village in India. Traditions are meant to be broken with when they are exploiting our world’s most vulnerable.
Seasonal hunger and public policy: intersectoral solutions needed

Richard J Deckelbaum

While the ongoing effects of climate change are uncertain and will only be revealed over time, the vulnerability and compromised wellbeing of the world’s poor, who remain dependent on rain-fed agriculture, is likely to increase. A panel at the 2016 Consortium of Universities for Global Health (CUGH) meeting broke new ground in describing the intersectoral contributors to, and consequences of, seasonal hunger due to climate change at different levels, from biological implications to rural livelihoods to social unrest. This blog is a brief summary of those discussions and the novel interdisciplinary considerations that will be required to solve or diminish the risks of this pervasive problem.

In regions of the world where there is a marked dichotomy between wet and dry seasons caused by mono-modal rains, there can be a profound linkage between these environmental variations (“seasonality”) and numerous aspects of human biology and even survival. Some of these influences can persist for generations and bear down on the very process of human evolution through effects on fertility selection.

Fundamentally, seasonality affects the principle drivers of nutrition. Food access, along with nutritional quality, is highly dependent on the seasonal climate and is essential for good nutrition. Yet seasonal hunger is poorly understood. No estimates are compiled and limited evidence exists on prevalence, causes, and impacts. One study, however, which used recent data from the Malawi Integrated Household Panel Survey showed that over half of rural households and a third of urban households reported experiencing hunger in the pre-harvest months, with female-headed households more likely to suffer. In Malawi, the main maize harvest usually begins in late March or early April, with food stores lasting for most households through October. After this time food scarcity and rising prices affect both urban and rural households. Such circumstances can erode household resilience and lead to violence and conflict. Acting alone or together with other household characteristics, such as distance to the nearest road, household size, and age, gender, and education of the household head, these seasonal drivers are a significant cause of global hunger.

Hunger diminishes wellbeing directly, but coping responses such as skipping meals or eating less, acquiring debt through purchasing food on credit, borrowing money to buy food, or selling assets such as livestock, are likely to have both short- and longer-term consequences. For example, in Malawi, 1 month of seasonal hunger is associated with a household harvesting its crop approximately 7 days

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Hunger diminishes wellbeing directly, but coping responses such as skipping meals or eating less, acquiring debt through purchasing food on credit, borrowing money to buy food, or selling assets such as livestock, are likely to have both short- and longer-term consequences. For example, in Malawi, 1 month of seasonal hunger is associated with a household harvesting its crop approximately 7 days
earlier than a household experiencing no seasonal hunger. This finding has implications both for household nutrition and for household incomes. Interestingly, planting “off-season” or permanent crops that might be harvested during the lean months is associated with more months of seasonal hunger, suggesting this is a coping mechanism adopted by households more likely to experience seasonal hunger.

Child growth is also highly affected by seasonality, with very poor (sometimes null) growth in the rainy season. The result of this low growth rate and lack of nutrition is a rise in illnesses that in turn place a burden on health systems. In rural areas, these problems are compounded by seasonal effects on the work and social environment, which can affect time allocated to child care and infant feeding practices. Seasonality also affects disease prevention activities such as vector control as well as health care facilities, which may experience increased demand associated with an unusually wet or warm season. Furthermore, the living environment, including sanitation and safe drinking/cooking water, may be strongly influenced by seasonal floods or droughts.

Climate change is becoming prominent in the current development agenda, motivated by a community that seeks justice for those who are most vulnerable to its impact, yet who have contributed least to its cause. Understanding the current impact of seasonal climate is key to understanding what changes may be underway over longer time frames. Indeed seasonal hunger may be the primary indicator of population vulnerability to climate change. Once seasonal drivers are well understood then we can look at how seasons might vary from one year to another and then how they may shift over time.

Seasonal intervention points, year-to-year anomalies, and longer-term trends can be better identified using climate information. Recent advances in the development of high-resolution, quality-assured climate data from countries in Africa have opened the way to a better understanding of the local climate, its recent history, and its potential predictability. This kind of detailed knowledge is the key to a better understanding of current vulnerabilities to climate and provides the basis for future scenarios associated with preventing the adverse effects of climate change. Moving forward towards implementing successful policies and approaches to seasonal hunger, better matrices describing the interdependence of the multiple contributors need to be established, understood, and acted upon.

Contributors to this blog and to the 2016 CUGH session on seasonal hunger are: Andrew Prentice from the London School of Tropical Medicine and Hygiene; Leigh Anderson from the University of Washington; Jessica Fanzo from Johns Hopkins University; and Madeleine Thomson and Richard Deckelbaum from Columbia University.

All thank Mary Pasquince of Columbia University for helping coordinate the written summaries from each contributor into a single integrated paper.
The fatal omission of contraception

Ashley Wolfington

The recent Lancet Series on Maternal Health confirms a well-established reality: the majority of preventable maternal deaths continue to occur in areas affected by humanitarian crisis, largely as a result of poor maternal care. But this reminder is also accompanied by a chronic offense. Contraception, one of the most effective interventions to prevent maternal death and disability, is not given the spotlight it deserves.

There is no dispute, by authors or anyone, that contraception is critical. But overlooked is the fact that comprehensive contraception in crisis contexts can meaningfully reduce the immense burdens on strapped health systems over time. This will only happen if we conscientiously, significantly, and practically increase the attention paid to contraception now.

According to a global evaluation, the provision of comprehensive contraception in emergencies has only marginally improved over a decade. It remains one of the leading gaps in reproductive health services in emergencies. Consequently, it is out of the grips of millions who need it now. This includes, for example, women and girls mired in humanitarian crisis in northeast Nigeria, where estimated rates of modern contraceptive user can be as low as 3%.

This brings us to the critical question: how is it that one of the most cost-effective interventions to prevent maternal death remains absent to those who need it most?

The answer is not that the service is not desired by women in crisis settings. Before the IRC opened its reproductive health clinic in Borno State, Nigeria, women and girls were already asking for contraception. Most women were asking for implants, which can provide up to 5 years of protection from unintended pregnancy and can be removed at any point with a near immediate return to fertility.

In places as diverse as Khyber Pakhtunkhwa province in Pakistan, along the border between Myanmar and Thailand, and eastern Democratic Republic of Congo, women are choosing IUDs and implants even though those services were almost non-existent just a few years ago. As soon as contraception services were introduced, the latent demand became obvious.

So if it is not the fact that women will not use the service, what is it? In many countries, high rates of maternal mortality and low access to reproductive health services are often pre-existing symptoms that become exacerbated by conflict. But the unwelcomed reality is that the very people seeking to help are perpetuating these vulnerabilities.

Only 14% of funding appeals for reproductive health included family planning. The Inter-Agency Working Group for Reproductive Health found that long-acting or permanent methods of contraception were rarely mentioned. In
terms of funding, countries suffering from conflict tend to receive 57% less funding for reproductive health than non-conflict countries.

Inaction and lack of will is no doubt exacerbated by the fact that the minimum standards for reproductive health in emergencies, the international guidelines that outline the necessary package of basic services, exclude comprehensive contraception as a priority at the onset of emergencies. This omission has implications for what donors will fund and what supplies will make it into pre-packaged emergency kits. So despite the fact that women and girls in northeast Nigeria have a high demand for implants, no pre-packaged emergency reproductive health kit contains them. IUDs are provided in very limited quantities in these emergency response kits, based on forecasts that just 5% of clients will choose the method. This sets services behind the curve of what is possible, before we even try.

Contraceptive choice must be a priority at the onset of emergencies, including long-acting methods. Donors must demand that this life-saving intervention is included in any emergency reproductive health response, just as they would require bednets or malaria treatment in many of the countries suffering from the highest rates of child mortality. Implementing agencies must stop claiming to address the maternal health needs of women and girls in humanitarian crisis while neglecting contraception. As the minimum standards undergo revision, this fatal omission must be addressed.

And it is also worth noting again that the consequences of this omission are not limited to maternal health. We risk missing an opportunity to provide women with what they actually want, which is a transformative element of control over their life amidst chaos.

The international community must reposition contraception if it is to uphold its commitments to the health and wellbeing of women and girls affected by crisis. The time to provide contraception is not when situations stabilize, or when international guidelines catch up, or when contraception has a prominent enough spotlight in the next maternal health series. Everyone in these respective areas must do their part to reposition contraception and accelerate this process. But ultimately we should keep in mind that the women and girls that we serve don’t have the luxury to wait, and neither do we.

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Disease elimination and eradication: are our silos sustainable?

Richard Reithinger

Visionary goals to end diseases are all around us. Polio, Guinea worm, malaria, and a handful of other diseases have been identified as potentially eradicable—some as quickly as within a generation. Beyond optimistic goals, the day-to-day of disease elimination and eradication is complex and difficult: only one infectious disease that affects humans—smallpox—has ever even been eradicated. Progress has been made in every area that makes disease elimination and eradication possible—from diagnosis and treatment to mapping and modelling. Now, cross-disease discussions on the science, policy, and operational “must-haves” that have gotten us to this point are urgently needed.

A classic example is malaria and lymphatic filariasis (LF), two diseases both spread by the same group and—in some settings—the same species of mosquito.

The malaria community has long debated the use and effectiveness of mass drug administrations (MDA) among at-risk populations, particularly in pre-elimination settings. Meanwhile, the neglected tropical diseases (NTDs) community has been conducting MDAs for decades in its drive to eliminate LF by 2020. Supported by the RTI-led, USAID-funded ENVISION project, 272 million LF treatments have been distributed through large-scale annual treatment campaigns. As a result, 152 million people in 13 ENVISION-supported countries are no longer at risk for the disease.

Further, there could be rich lessons regarding the kind of impact that bednet distributions for malaria might have had on LF transmission in countries endemic for the two diseases.

We know we can’t be overly simplistic, given there are differences even at the basic level of how each disease defines elimination; for some diseases, it’s about reducing transmission to zero, and for others it’s about ensuring disease levels become so low that they are no longer public health problems.

But we can push ourselves to be thoughtful and focused. One opportunity will present itself at this week’s Annual Meeting for the American Society for Tropical Medicine and Hygiene (ASTMH), which will feature a cross-disease elimination and eradication discussion with polio, malaria, Guinea worm, and Chagas disease experts. We must ensure momentum carries from discussion to real-world collaboration on research and programming.
Integrating our efforts into wider health systems

In addition to increasing cross-disease learning, we should also discuss the integration of efforts into wider health systems. It’s a necessity that becomes more and more urgent as our progress continues.

In the fight against malaria, for example, large-scale national pushes supported by the Global Fund to Fight AIDS, Tuberculosis and Malaria and the President’s Malaria Initiative have led to historic gains. But as cases decrease, it becomes harder to keep up momentum for a vertical drive, and integrated approaches become more important.

Remaining cases also became more spotty, clustered, and located in hard-to-reach places and populations, with greater and greater geographic resolution needed to identify and respond to cases.

Through RTI’s decade-long support to Zanzibar’s malaria control programme, we learned that—besides political will, commitment, and financing—a strong surveillance system is the critical foundation for any push to elimination. In Zanzibar, a combination of interventions has reduced malaria prevalence to less than 1%, and state-of-the-art surveillance ensures that transmission remains at these low levels.

Nothing illustrates our continued tendency to talk past each other quite like the fact that two global health gatherings—the ASTMH annual meeting and the Global Symposium on Health Systems Research—are taking place this week. Separate streams of conversation, both in-person and online, are a missed opportunity for cross-disease and cross-sector conversations.

If there is broad agreement that disease elimination and eradication will only be possible if underpinned by strong health systems, we need to diligently make those links—like how elimination and eradication efforts could be integrated with wider health systems issues such as universal health care, decentralized health governance, or domestic resource mobilization.

Accelerating progress to build political will

Better collaboration between disease communities and more concerted linkages with health systems are critical to accelerate progress and to ensure funding and political will continues.

When the burden of a disease decreases in a given country, it’s certainly a cause for celebration, but it also becomes very difficult to maintain political will, commitment, and funding for vertical programming.

Thailand, for example, has made considerable progress against malaria, and international donors are now lessening support for malaria programming as a result. Current funding from the Thai government, however, is not sufficient to go the last mile. Thus, through the USAID-funded Inform Asia project, RTI is leading a cost-benefit analysis of malaria elimination in Thailand to help advocate for increased resources from the Thai government as well as non-government resources.

Globally, noble goals paired with tremendous progress have successfully rallied substantial commitments to finance disease control programmes. Just look at the Global Fund—its support has contributed to saving more than 20 million lives, and it recently raised $13 billion dollars to continue its work.

But if outcomes stagnate or stall, it will become increasingly difficult to preserve the attention of policymakers amidst other needs and emergencies also screaming for attention.

Caught in the day-to-day complexities of pushing for elimination and eradication of specific diseases, it can be hard to lift our head up, look around, and reach across our respective silos to ask thoughtful and tough questions, as well as get informed on how other disease communities tackle similar issues and challenges. However, it would benefit us all to do so, as it may well help us cross the finish line sooner, and reach the ambitious elimination and eradication goals that are—in some instances—at our fingertips.
How can we achieve health care beyond borders?

Azusa Sato

What governments and other actors are physically able to provide within their own borders is often of little use to mobile populations once they leave their home countries. It is natural for policy makers to provide for their citizens first before thinking of non-citizens, but how can countries provide health care to a migrant population? In an era of increasing mobility and economic integration, it is time to consider how to elevate the debate from universal health coverage (UHC) at the national level to the global level, and to providing health care to migrants. Not integrating migrant workers into existing national health insurance systems will lead to unequal health access, and ultimately outcomes, between natives and non-natives.

Many countries have been working hard to attain UHC so citizens can access good quality health care without financial hardship. Indeed, indicators relating to UHC, such as health insurance coverage, out-of-pocket payments for health, and human resources for health, undoubtedly show that countries are increasingly committed and are duly rewarded with better health outcomes.

In countries of the Association of Southeast Asian Nations (ASEAN), UHC has increased substantially and rapidly across their populations, services, and finances. Since 2002, Thailand has sustained coverage of all its citizens in three schemes; Vietnam similarly raised the proportion of the population with insurance from 16% in 2002 to 65% in 2011, with a view to reaching 90% by 2020; and in 2015, the Philippines covered 92% of its population, up from 39% in 2000.

In 2004, Cambodia reportedly had 0.1 hospital beds per 1000 people; this figure jumped to 0.7 by 2011, a dramatic rise in service coverage. Financial coverage, in relation to out-of-pocket payments has also improved: Thailand has seen decreases from 21% in 2005 to less than 8% in 2014; Vietnam has halved rates from 68% in 2005 to 37% in 2014.

While all these achievements do not mask the countless challenges countries still face, they do show that the efforts towards UHC have intensified, and have been highly successful. However, these statistics are nationally focused—and nationally bound. At the same time, there has been a phenomenal rise in the number of migrant workers, especially from the Asia Pacific region, largely owing to increased economic opportunities and policies that allow freedom of movement. According to the UN, over 95 million migrants in the world originate from Asia Pacific; there were 59.3 million international migrants in Asia Pacific in 2013.

Most migrants move from a country in the southern hemisphere to another country in the southern hemisphere (and are termed ‘south-south migrants’), while
others travel further afield, and are termed ‘south-north migrants’. The scale is so large that in Qatar, 87% of the population are migrants; in the United Arab Emirates, the figure is 70%, with the top five migrant nationalities being India, Bangladesh, Pakistan, Egypt, and the Philippines.

To what extent are these migrants accounted for within national-centric health systems and UHC agendas? Some predominantly migrant-sending countries like the Philippines have made their national health insurance portable, while other countries rely on other approaches, mandating migrants to enrol in health insurance for the sole purpose of use when abroad. Similarly, some countries that receive migrants also allow foreign workers into national insurance systems and treat them as equal to natives, while others make it compulsory for employers to provide separate health insurance coverage for their migrant employees.

Unfortunately, these different approaches give rise to a couple of shortcomings:

There are different laws of reference to which employers and employees must comply—some refer to health, while others refer to labour or social welfare. Often these laws are contradictory or are not aligned with each other. Without proper alignment, migrants will fall through loopholes.

Differentiating access by nationality and citizenship status, rather than by health needs, will create a two-tiered, inequitable system where access to services is limited or ‘second class’ for non-nationals. This would be particularly harmful for undocumented migrants who, by definition, do not reveal their nationality to authorities.

In this increasingly mobile world, the health issues of one country also quickly become health issues for its neighbours and beyond. As a result, policy makers at the highest level are beginning to act, and should continue to do so.

The Asian Development Bank has long supported countries on various aspects of migrant and regional health. In this vein, we are hosting a session on ‘Healthcare beyond borders’ at the 4th Global Symposium on Health Systems Research in Vancouver, on November 14. This is an opportunity for health systems policymakers, researchers, and practitioners to join our debate to reframe and elevate UHC to be global, and not constrained by national efforts bounded by borders.

This is a joint post with Soonman Kwon and Eduardo Banzon.
UN report on access to medicines is an opportunity for sustainable solutions

Sakiko Fukuda-Parr

September’s UN special session on antimicrobial resistance (AMR) was a vivid reminder of the shared responsibility of governments to promote research and development (R&D) combat global health threats. The complexity of the AMR threat made clear that a combination of market forces, policy incentives, and regulation, as well as norms and standards was needed to ensure innovation that would deliver accessible and affordable treatments.

The report of the UN Secretary-General’s High-Level Panel on Access to Medicines offers an important opportunity for national governments, UN organizations, philanthropies, civil society, and pharmaceutical manufacturers to move forward and address this challenge.

AMR is just the latest global health priority that cannot be resolved with the current incentive system for investing in medical R&D. AMR threatens to render a whole range of treatments ineffective and reverse 20th century advances in medicine. Numerous other health priorities are neglected because they do not present a business potential for investment, and millions of people lack access to medicines and treatments that are priced out of reach.

In a world of unprecedented medical advances, these unmet needs present a moral dilemma, and one of the most critical challenges for humanity. The Panel, on which I had the privilege to serve, makes a number of concrete proposals to promote needs-driven R&D financing and to expand access to medicines for people in need. As a whole, the report makes short-term and long-term recommendations towards introducing more systematic and sustainable approaches to meeting unmet needs in innovation and access.

Over the past two decades, enormous progress has been made to fill these gaps through initiatives that involve public, philanthropic, non-profit, and private sector actors. They include investment in R&D on neglected tropical diseases spearheaded by such programmes as the Drugs for Neglected Diseases Initiative (DNDi) and the Global Health Innovative Technology Fund (GHIT).

A major breakthrough in efforts to expand access was the generic manufacture of antiretroviral drugs to treat HIV/AIDS, price discounts and voluntary licences offered by pharmaceutical companies, and mobilization of large amounts of donor funding through the US President’s Emergency Plan for AIDS Relief (PEPFAR) and the Global Fund to Fight AIDS, Tuberculosis and Malaria. Access to effective HIV treatment has expanded dramatically since it was invented 20 years ago, and the price of the drugs has dropped from over US$10 000 a year in developing countries to around $100 today.

These are huge achievements but do not constitute a sustainable solution to the fundamental problem of misalignment between public health priorities and current market dynamics that drive innovation and shape access. The old problem of lack of access to existing life-saving drugs remains, and new challenges are emerging such as access to new lines of HIV antiretrovirals, new threats like Ebola and Zika viruses, and the rising price of life-saving treatments for diseases such as cancer and hepatitis C.

These new threats affect people worldwide, not just in low-income countries. Prices of these treatments have risen to levels that are increasingly unaffordable for household budgets and insurance schemes even in the
world’s wealthiest countries, such as the USA, Japan, and Switzerland. In the USA, 11 out of 12 cancer medicines approved in 2012 were priced above $100 000 per year and the cost of EpiPen dominates the front pages of daily newspapers.

This is why the Panel report recommends sustainable solutions through shifts in policy and their implementation. For example, we urge governments to consider the public health consequences of the intellectual property and other provisions included in trade agreements, such as the recently negotiated Trans Pacific Partnership agreement, that could lead to further raising prices of medicines, and further reduce the scope of policy choice for national governments in pursuing public health priorities.

We recommend stronger action against retaliatory action when national governments use the flexibilities in the World Trade Organization’s trade agreements that make life-saving medicines accessible. To facilitate decision making in both investors and governments, we propose greater transparency on pricing of medicines and the costs of R&D and manufacturing, as well as registry of patents. And we propose that countries create alternative incentives for R&D—“delinked” from having to charge high prices—that would build affordability of the medicines into the process from the start.

Taking action on these issues poses hard political choices. Critics have charged our report with undermining innovation by questioning the role of patents. This critique is wrong: in fact, our recommendations would deliver more innovation of public health value by addressing what the existing patent system does not. Critics have also attributed lack of access to poverty and inadequate health systems, denying the relevance of monopoly pricing under patents. What is at stake goes beyond the challenge of poverty to the health of all humanity.

According to international human rights law, access to health care is a human right that governments have an obligation to fulfil by taking necessary legislative and other policy measures. The misalignment between public health priorities and incentives cannot be addressed by charitable action of foundations and corporations alone. Nor can it be left to each government to cope with its own health emergencies. Unmet priorities in innovation and access are a global challenge and need an international response involving collaboration amongst governments, businesses, civil society, and patients.
Rethinking the role of culture in mental health after the Ebola epidemic

Neda Faregh, Soumaoro Kemo, and Alexis Tounkara

As with other similar major disease outbreaks, psychosocial consequences are most salient after the resolution of the crisis. The WHO’s mental health capacity building program for Ebola survivors led to a sizeable number of trained mental health workers in Guinea by early 2016. These efforts were promising but interruption in funding severely limited follow-up training and supervision that were essential to sustaining mental health work; hence the region remains deficient in mental health care provision. Furthermore, an emphasis on mental health and psychosocial work with survivors is inadequate given the extent of disruption and the resulting shock.

The Republic of Guinea is unique in its post-colonial history, having endured a religious campaign (1956–58) led by the Muslim cleric Asekou Sayon and 30 years of President Sekou Touré’s independent Socialist regime (1958–88), which imposed a brutal “demystification program” inspired by Maoist cultural revolution to destroy existing cultures and to create a new national identity. The iconoclastic thrust used violence to arrive at systematic destruction of traditional cultures and artifacts where traditional religious and indigenous rituals were forbidden, cultural institutions were ruined, sacred forests and man-groves were burnt or lost, and instrumental material arts were destroyed. Story telling practices central to Guinean culture, and a multitude of other traditions were banned. These events were successful at interrupting intergenerational cultural acquisition and transfers and subduing a
complex socio-religious system that relied on tradition to order and make sense of life affairs. It is important to note that prior to EVD crisis, the colonial and socialist regimes had brought on forces of dissolution to the mechanisms of cultural cohesion, including rites that provided strong social ties for the people of Guinea. The end of Touré’s violent regime gave way to political uncertainties and a nascent democracy within a legacy of fear and distrust. A renewed interest in ethnic kinship, cultural reclamation, and re-ethnicisation was confounded by poverty of the fragile state, and subsequently the devastations of an epidemic. The corollary of the EVD crisis in Guinea needs reframing to be understood within this particular socio-political landscape.

Although continuous funding of mental health programs is warranted, we suggest an additional often overlooked avenue for mental health and psychosocial capacity building. We call for a focus on investing in Guinean cultural heritage as sustainable community mental health capacity building and a viable option compared to indeterminate continuous international funding intended to rebuild a health system based on Western standards relegating local cultural understanding of health and healing to the sidelines (table).

<table>
<thead>
<tr>
<th>Period</th>
<th>Health system evolution</th>
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<tbody>
<tr>
<td>Colonial Period</td>
<td>Mobile teams concerned mainly with endemic diseases and the establishment of hospitals in major cities, mining and agricultural colonial outposts staffed by French military and missionaries.</td>
</tr>
<tr>
<td>1958-84</td>
<td>Socialist politics emphasized equity of access to care. A Socioeconomic development plan improved numbers and access to clinics, hospitals and medication. The welfare state provided free care.</td>
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<tr>
<td>1984-2000</td>
<td>Multitude of ineffective parallel projects and programs A National Health Plan was developed allowing for private health sector establishment which brought on improved health indicators.</td>
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<tr>
<td>2000-2014</td>
<td>A new National Health Policy attempted to address system inefficiencies, accompanied by a National Health Development Plan in 2010. Gradual decline in public funding resulting in increasing health insecurities and vulnerabilities.</td>
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Table: The four periods in the evolution of the health system in Guinea
Cultures of Guinea are rich in mythology, oral histories, connection to land, the supernatural, dreams and contracts with ancestral spirits. Guineans rely on and trust their traditional healers, elders as traditional custodians of culture, and the Griot (story tellers), to make meaning and develop knowledge and rules to live by. Weakened cultural practices and later attempts at cultural re-invention were interrupted with the emergence of EVD epidemic.

In societies where indigenous cultures have been historically challenged, renewed interest in autochthony has focused on revival of traditions, indigenous knowledge, and intergenerational transmission of knowledge. Revival efforts attempt to erect bridges to the past, ancestors and community, reinstating social wealth. Indigenous studies indicate cultural continuity is a protective factor in physical and mental health and social cohesion and that efforts aimed at preserving indigenous culture can result in improved health, higher quality of life, and wellbeing.

These results hold promise for the tragedies related to EVD pandemic experienced by the people of Guinea. The revival of material artworks and cultural activities are expressions of kinship, unity, respect and deference to ancestral spirits and constitute ways of knowing, meaning-making, and learning. Programs of cultural preservation, reinvention, and cultural capacity building to revive oral storytelling, traditional games, festivals and carnivals, rituals, and traditional practices can be catalysts toward renewal in grieving communities devastated by the EVD and for stigmatized families that continue to bear the brunt of EVD fallouts. These are generative activities that support the re-emergence of social networks and the possibility of community restoration.

International aid needs to consider investing in arts and culture for their integrative values and unique aptitude for emergence that are both sustainable and contextually relevant. The International Development community must invest in preservation and resurgence of Guinean cultural heritage as a way of alleviating mental illness and psychosocial ills.
The rise of walls and the decline of values: from Trump to Calais

Chris Simms

Breaking down walls, removing barriers, and opening pathways for cooperation and collaboration have long been at the core of international and global health—at least conceptually. Resistance to these goals and their underlying values has typically been ideologically or economically driven, reflecting the self-interest of powerful actors. However, the obstructions these actors create have never been as conspicuous, widespread, symbolic, or impactful as they are today.

The figure shows the number of walls and fences erected on national borders during the period 1945-2015. It depicts a modest increase from 1945 until 1989 when the Berlin Wall came down and then shows a sharp rise, especially over the last 15 years. Many of the nearly 70 walls have been built recently in Europe where countries are attempting to cope with a profound immigration crisis in which millions of people are on the move. Interestingly, the graphic representation of these trends actually conjures up the image of a bolstered wall.

The refugee crisis in Europe, the building of the wall in Calais, the dismantlement of the so-called “jungle” refugee camp, and the plight of its children have drawn global attention. Walls have become a metaphor for fear and resentment and for the overarching paradox that, while the global community is more interconnected than ever, it is becoming increasingly fragmented.

A particularly disturbing aspect of these trends is the anti-migrant, anti-Muslim, anti-ethnic rhetoric that accompanies them. This is perhaps epitomized in the speeches of Donald Trump (Republican nominee in the US presidential elections to be held November 8). A video shows Trump exhorting thousands of supporters with a refrain—“build that wall, build that wall”—evocative of scenes from the darkest days of 20th century Europe.

The plight of migrants and chaos along national borders appearing daily in the media is in sharp contrast to the vision and values of international and global health as originally conceived. For instance, Halfdan Mahler, Director-General of WHO during 1973–88 and who ushered in the Declaration of Alma Alta (1978) on primary health care (PHC), described the 1970s as a “warm decade of social justice”. PHC envisioned removal of the barriers between health facility and the populations it served by focusing on simple and inexpensive interventions at the village level (essentially patient- or family-centred care).

For Igogwe Hospital, a 100-bed facility in the southern highlands of Tanzania, the adoption of PHC in the 1980s literally meant the removal barriers from the hospital compound and sending health workers out into the villages where they developed and strengthened a network of rural health centres, maternal and child health clinics, and mobile services. When HIV/AIDS hit hard, Igogwe had a range of initiatives a full 10 years before the international donor community.

Yet rural hospitals like Igogwe were the exception. Halfdan Mahler, recalls that when the International Monetary Fund and World Bank interposed their policies of structural adjustment and health reform, they

created barriers to access as real as bricks and mortar. For
the world’s poorest, the 1990s became known as the lost
decade.

The Consortium of Universities for Global Health distinguishes global health from international health, stating that the former refers to “the scope of problems, not their location”, that it parallels a shift “in philosophy and attitude that stresses the mutuality of real partnership”, and aims for “health equity among nations and for all people”—that is, a more level playing field without barriers. While most donor countries embrace these values (including the European Union), it is typically left to the non-governmental organization community which, together with its southern partners, works with ordinary people, their families, and communities to address the detrimental impact of walls along borders. For example, Christian Aid issued “Breaking down the barriers”, Action Aid, “Protect people, not borders”, while Doctors without Borders’ vision and mission are self-evident.

Walls are often used as metaphor for the way they separate, for those they keep out or keep in, for the way they are built (perhaps representing the gradual accumulation of resentment) or suddenly rise up (flare-up) overnight, for the way they frighten, cause despair, or obstruct our view of deeper problems. Some of these metaphorical allusions ought to resonate with the global community. From a health systems point of view (or from a Donabedian analysis perspective) a wall—in that it exists at all—tends to imply inadequate inputs, poor process, poor outcomes, and generally mass failure—a scar on the global landscape. In his final address to the UN in September, US President Barack Obama stated that these walls paradoxically imprisoned those who build them.
Empowerment and sustainability: web-based technology for tuberculosis care

Niranjan Konduri

The 2016 World Health Assembly’s high-level inter-ministerial roundtable reported that digital health technologies such as e-health, m-health, and information communication technologies can help achieve global health goals and universal health coverage. At the upcoming Union World Conference on Lung Health in Liverpool, UK, WHO will host a workshop to discuss how digital health innovations are supporting global efforts to improve tuberculosis care and prevention, particularly in tackling the crisis of multidrug-resistant (MDR) tuberculosis. One such innovation is e-TB Manager, a web-based digital health technology for managing all the information needed for tuberculosis control.

Developed by USAID’s Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program, e-TB Manager enables providers to manage susceptible tuberculosis, MDR tuberculosis, tuberculosis-HIV, and pediatric tuberculosis cases from diagnosis to treatment outcome through WHO guidelines. It allows communicable disease teams at all levels, from health-care providers to government officials, to access individual and consolidated data for evaluating system performance across facilities and regions. Each user account is assigned a certain view by the National TB Program authority depending on the health system level of use. Usually a select handful of staff from the central level will have access to the entire country’s patient data. These are assigned “administrator view.” The vast majority of users in the country can see patient data only for those patients that they are serving, be it at a large city hospital or in a district health facility. Depending on the size of the country, certain doctors or nurses are designated “administrator view” for their responsible state or province.

We recently conducted an 18-point anonymous e-TB Manager user satisfaction survey in nine countries that covered more than 2000 users working in some 1500 health facilities (infographic). We had a high response rate of 76% and received more than 600 user comments. These were channelled back to respective country national decision makers to help with continuous quality improvement, thereby meeting some of the Principles for Digital Development. We also conducted in-depth interviews with key leaders and implementers and learned how e-TB Manager facilitated national, regional, and local health workers’ abilities to track and manage tuberculosis cases. Our findings have key implications for digital health technologies in general.
Digital health technologies can be empowering

Some 75% of users such as nurses, doctors, pharmacists, laboratory technicians, and health workers agreed that they have the capacity to use all e-TB Manager features. Our capacity-building paradigm focused on how e-TB Manager’s capabilities are linked to users’ specific responsibilities and job functions. Adult learning methodologies, on-the-job training, periodic refresher training, supportive supervision, and an enabling environment for continued usage of digital health technologies are key aspects of empowerment.

Technology should also make health workers’ jobs easier and more effective. In the case of e-TB Manager, 81% of users agreed that it helps improve patient care and nearly 70% of users find that e-TB Manager improves their workplace productivity. For example, doctors in Vietnam reported that the patient information transfer process from the national referral hospital to the district health facility took 1-2 weeks using paper-based systems. With e-TB Manager, this wait time dramatically shortened to less than 1 day, reduced back-and-forth phone calls, and allowed patients to continue their uninterrupted treatment at their preferred health facility.

With demonstrated value-added benefits, digital health technologies can be sustainable

Of all health workers using e-TB Manager, 77% say it helps track the information they need for patient care, and 80% find it reliable. I once encountered a situation in the office of a Ukrainian doctor who treats patients with MDR tuberculosis. The doctor had to provide approval to a hospital maternity ward for releasing a newborn to the tuberculosis patient who had recently delivered the baby. Instead of making time-consuming phone calls to the patient’s district health facility, the doctor was able to swiftly review her treatment history in e-TB Manager and discovered that she had developed MDR disease. That information had not been communicated to the maternity hospital. Eventually, the doctor decided to withhold releasing the newborn to the mother until she finished her treatment to protect the baby. Seeing such tangible benefits reduces any resistance doctors and health workers may have towards implementing digital health technology. Health workers start embracing it in their daily work.

That said, our research found that health workers in some countries still needed to be reminded of how e-TB Manager can be an integral part of patient care. And a digital health technology is only as good as its data quality. In Brazil, for example, certain state health officials often have to follow up with health facilities to correct or complete blank data fields related to laboratory results or medicines stock levels. Much work is needed to ensure that both decision makers and users continue to see how digital health technologies contribute to better patient care.

Further, health-care worker motivation alone is not enough to sustain technology use. It also needs basic infrastructure, periodic supervision, and dedicated information technology support. Poor internet connectivity, limited computer infrastructure, and intermittent electricity can be a major deterrent for digital health technologies, particularly at a district level. A good digital health solution has to consider workarounds. Our programme in Bangladesh, for instance, installed 24 solar power kits in 10 priority districts to power continued use of e-TB Manager. Otherwise, health workers easily lose interest. Yet there are motivated health workers such as Irina Chaban of Ukraine, who faced several infrastructure obstacles and overcame them.

Lessons learned in advancing digital health technologies

Over the past 5 years, the USAID SIAPS Program has worked side-by-side with country decision makers and various partners on the path to health systems sustainability. Country authorities steadily sought grants from the Global Fund to fight AIDS, Tuberculosis and Malaria as well as domestic resources from country health budgets. To date, the USAID SIAPS Program has handed over e-TB Manager to the local governments in 9 of 10 countries and scaled up use in at least 7 of 10 countries. We learned some of the crucial ingredients on the path to sustainability for digital health technologies: multistakeholder partnerships, strong leadership, a government champion, accessible technical expertise, a steady funding stream, and incorporating lessons learned from pilot before scale-up. Indeed, our experience feeds into the WHO’s digital health for the End TB Strategy to help advance patient care, improve surveillance, and engage communities.
Bridging policy and practice for effective control of tuberculosis in east Africa

Wilber Sabiiti

The words ‘policy’ and ‘practice’ are so often used in the same sentence that it is easy to assimilate the two as synonymous or assume that the former automatically leads to the latter. While policy refers to a framework of rules, guidelines, and procedures, practice drives implementation and is influenced by factors such as resource availability and allocation, system functionality, and political will. The Tuberculosis Working to Empower the Nations Diagnostic Effort (TWENDE) project aims to translate tuberculosis research innovations into policy and practice. We explore points raised at a recent TWENDE meeting on the need to better connect policy to practice in three TWENDE African countries.

At the Arusha conference on July 1, 2016, members of TWENDE explored the link between policy and practice in the context of the fight to eliminate tuberculosis (TB) in East Africa and the world at large. Uganda, Kenya, and Tanzania are high TB burden countries that are the focus of the TWENDE project. Within a combined population of 138 million, the total TB burden is around 450,000, 30–50% of which are co-infected with HIV. The urgency for better TB control strategies is not debatable.

Over 5 years ago the WHO issued policy guidance for the use of rapid and more accurate diagnostic Xpert MTB/RIF and line probe assay (LPA) in high burden countries to shorten time to diagnosis and initiation of treatment as well as detection of drug resistant TB. The recommendation was that that Xpert MTB/RIF should be implemented at district level hospital and regional hospital level for LPA. The policy was adopted in Uganda, Kenya, and Tanzania but are those principles really applied in practice? There are 313 Xpert MTB/RIF machines in total in the three countries, which translates into a ratio of one machine per 440,895 people at risk of contracting TB. Only special cases, such as HIV-positive patients or contacts of patients with a history of multidrug resistant TB are able to access Xpert diagnosis. The situation is even worse for LPA implementation: this assay, which is meant to offer rapid drug sensitivity testing so that patients with resistant TB get appropriate treatment in the shortest possible time, is available in only three centres in Tanzania, and one each in Uganda and Kenya. Time to diagnosis and initiation of treatment is 2–3 months, which inhibits the expected benefits that these advanced diagnostic technologies are expected to deliver. In
situations such as these, it is not surprising that only 50% of notified TB cases are confirmed by laboratory. Without laboratory confirmation, resistant TB goes undetected, as it is difficult to distinguish resistant from susceptible TB by visual clinical symptoms.

Anti-TB therapy is, by policy, free in all three countries and indeed more patients have been treated successfully in the last 10 years. However, drug shortages coupled with systemic procurement difficulties to restock on time, long distance to treatment centres, and patient care costs compromise the success of this policy. Poor patients living in rural areas find it unaffordable to travel to treatment centres and later on to cover the costs of treatment. Further, the typical treatment period for TB—a minimum of 6 months, which can extend for much longer periods for resistant cases—is a timeframe some patients are unable to adhere to. Apart from financial challenges, health-seeking behaviours also influence where patients are treated first. In most cases, patients start with traditional healers and report to formal health-care facilities too late for therapeutic intervention to be beneficial.

Finally, national TB control programmes are statutory in the three countries. These programmes are entitled to annual budgetary allocation, which ideally means they are well resourced. The reverse is true. The Tanzanian TB control budget remained unfunded in 2014 and in Uganda and Kenya, where external donors typically fund more than half of TB activities, there was a 20–30% gap that same year. The TB control programmes exist as a matter of policy but they are under-resourced and unable to implement all the necessary diseases control activities successfully.

These realities clearly show that putting policy into practice is the weak link for TB control and the realisation of WHO’s 2035 vision for elimination in the three TWENDE countries. To achieve sustainable policy practice, TWENDE recommends the following:

- Bold investment of financial resources. Policy implementation thrives in strong and functioning health systems. Adopting and religiously implementing the African Union Scorecard policy to ensure domestic investment into health care is a great step forward for TB control in Africa.
- Deliberate community socioeconomic strengthening. Poverty limits accessibility to health care, aggravates morbidity, and leads to death. It must be fought at all costs.
- Fostering of public-private partnerships, which should be vigorously pursued to help scale up diagnosis and treatment of TB. The reality is that the first point of call for the majority of patients in most of sub-Saharan Africa is a privately owned clinic or neighbourhood drug shop.
- Investment in translating research into policy and practice. Good research yields evidence for policy making, which in turn delivers services to society through policy implementation and vice versa. Good policies reduce inefficiency and wastage, thus saving resources to reinvest in more services.

Putting policy into practice is essential to reach the 2035 WHO TB elimination target. TWENDE strongly believes that in the context of the fight against TB, the problem is not absence of policy but deficiencies in the application of available policies.

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How adolescent girls can champion social change

Priya Shankar and Ricky Sharma

India’s over 112 million adolescent girls are on the cusp of womanhood, yet they go through the transformations of this important phase of life having to face India’s deeply entrenched gender inequality. Unfortunately, due to a variety of social, cultural, and religious factors, information on coping with gender-related difficulties is often poorly taught or completely neglected during a girl’s education in India. We describe a project that aims to develop adolescent girls into central actors in their own education.

56% of Indian adolescent girls are undernourished and anaemic, almost twice the rate of their male counterparts; 25% will drop out of school due to inadequate menstrual preparedness; over 30% will face sexual violence; nearly 50% will become mothers while still teenagers; and many will face increasing mental health struggles, with suicide having become the leading cause of death among adolescent girls. Studies have already demonstrated the impact of health and rights education in improving long-term outcomes for adolescent girls. As a result, many organisations use health workers to reach adolescents. Others disseminate health information through educational materials and booklets. While the issues facing adolescent girls are complex, one key piece of the solution has consistently been missing: the voices of girls themselves and a focus on building their own health leadership.

Our organisation, Girls Health Champions, aims to train adolescent girls in critical health topics and cultivate peer health educators who become health leaders in their schools and communities. Our hope is to nurture girls during this transformative period and enable them to recognise their potential as health communicators and change agents. We incorporate adolescent girls as central actors in their own education through our girl-to-girl health education model which involves a research-board-approved curriculum covering topics such as nutrition, anaemia, mental health, gender-based violence, menstruation, and reproductive health. Our focused, context-sensitive curriculum was created in partnership with leading paediatricians, psychiatrists, obstetricians and gynaecologists, educational specialists, and school teachers in both the USA and India. Additionally, given the sensitive nature of our curricula and the topics covered, we obtain parental consent, child assent, and school approval before delivering them.

We chose to work with adolescent girls specifically because adolescence is a period of life that is often neglected by health organisations. We selected a peer-to-peer approach because it is one of the most cost-effective, context-sensitive ways to deliver health training. As we have seen time and time again, many young girls will first turn to their peers for sensitive health information rather than to their teachers, parents, or even doctors. Additionally, our peer education model nurtures the voice and leadership potential in every girl through an iterative,
sustainable model that works in partnership with schools. Ultimately, through Girls Health Champions, we want every young girl to possess the knowledge she needs to take ownership over her own health.

Many of our Champions have already proven the efficacy of this model and their potential for health leadership. For instance, on India's Daughters Day, one 15-year old described the impact of being a Champion. She wrote, "I have always wanted to be a strong and independent girl, and now I know that it is possible. I want girls to be able to follow their dreams and reach the same place as boys in society. One day, I hope to make an impact." Another ninth grade Champion, who volunteered to teach the reproductive health module, described how she had never spoken in front of her classmates, let alone in front of students who were older than her. In addition, a set of six Champions in Mumbai who taught a module on mental health demonstrated their leadership and unique voice by creating a short play about depression, stress, and body image which supplemented our curricula. Beyond these voices, through a rigorous research design, we have already begun to see a demonstrable impact of the Champions model on the health knowledge, leadership, and self-esteem of peer-trainers and their classmates.

Through a Champion named Rupa*, we were reminded of the hope and possibility in working with adolescent girls. Standing in front of her class of over 200 students, she likened the impact of teaching a girl to the planting of a seed. While it may be difficult for a girl to single-handedly change some recalcitrant social norms, she hoped she might be able to spread the message, sharing what she has learned with her mother, brothers, or daughters someday. Through elevating adolescent girls, we have the opportunity to form a trail of seeds, with roots that spread, and branches that extend throughout the world.

*Name changed to protect identity
Women’s bodily integrity: linking criminalisation of abortion and criminalisation of HIV

Susana Fried

This past Wednesday, September 28, was the Global Day of Action for Access to Safe and Legal Abortion. This day was declared by the women’s health movement in 1990, and attention to the lack of access to safe and legal abortion has remained at the forefront of debate worldwide. From attempts to deny access in the US state of Texas to the pressing need for abortion reform in Zika-affected countries, the urgency to decriminalise abortion, and remove the stigma associated with it, is fundamental to women’s rights and women’s health globally.

To force women to have children they do not wish to have is a form of violence against women. Similarly, there are strong linkages between HIV and violence and more broadly to the denial of women’s control over their bodies. Lack of access to quality sexual and reproductive health and lack of ability to exercise rights, mixed with gender inequality, stigma, and discrimination, plague women living with and at risk of HIV as well as women with unwanted pregnancies. Today, despite decades of advances in treatment, care, and support, HIV is the leading cause of death among women of reproductive age in the developing world. Maternal death is the second biggest killer of such women. Complications related to pregnancy and childbearing among 15-19-year-old young women, including from an estimated 3 million unsafe abortions each year, contribute significantly to maternal mortality and morbidity.

Deaths of women from HIV and unsafe abortion aren’t simply biomedical problems. The science and technology of preventing and treating HIV, and the technical capacity to provide safe abortions, are well established. Safe and legal abortion and HIV prevention are relatively inexpensive to deliver. Moreover, there is a wealth of experience with successful pregnancy and HIV prevention programming. However, the criminalisation of abortion, along with the criminalisation of non-heteronormative sexuality, sexual conduct, and sexual and reproductive health choices, continues to circumscribe the lives of many women, men, and trans people.

A number of factors contribute to the higher HIV risk experienced by girls and young women, including harmful gender norms resulting in early marriage, intimate partner violence, early pregnancy, and discriminatory laws and practices. These factors combine to prevent girls from being able to stay in school and become economically independent, and impede access to social and health services. Even when health services are accessible, they are...
rarely designed for, and often unfriendly to, adolescents. In sub-Saharan Africa, for instance, only 15% of adolescent girls and young women aged 15–24 are aware of their HIV status. For those who have tested positive for HIV, a lack of youth-friendly HIV treatment and insufficient linkages between sexual and reproductive health services and HIV testing, treatment, support and care services prevents many young women from accessing antiretroviral therapy (ART) and from accessing sexual and reproductive health services more generally.

The same structural drivers that increase young women’s vulnerability to HIV also lead them to seek unsafe abortions. The same systems of discrimination and gender inequality that directly and indirectly increase diverse women’s and girls’ HIV risk also increase the likelihood that adolescent girls and young women will turn to unsafe abortion. These structural and political drivers include poverty, gender inequality, sexual violence, and a lack of education. They combine with other factors of marginalisation (for example based on race, ethnicity, language, migrant status, disability, sexual orientation, gender identity, engagement in sex work, health status, use of drugs, etc) to create toxic conditions for the lives of adolescent girls and young women worldwide.

The past decade has seen increasing linkages across movements in the HIV orbit—linking decriminalisation of sex work, same sex conduct, non-binary gender identity, and of HIV itself. These links are based, first and foremost, on the common experience of vulnerability to, and risk of, HIV. Another commonality is the experience of being the target of stigma, discrimination, and violence. Such human rights violations put the victims’ health at risk. Criminalisation of abortion puts women with unwanted pregnancies at a similar risk.

In some cases, the connections are even more direct. Sex workers, for example, may find themselves turned away from clinics where legal abortions are performed. Indeed, it may well be as difficult to find sex-worker-friendly sexual and reproductive health services as it is to find adolescent-friendly health services or for a gender-non-conforming woman to find lesbian-friendly health services, even in countries where same sex conduct is not criminalised. Transmen may have as much difficulty accessing safe abortion services as adolescents. And across the board, it is those with the fewest resources who face the most arduous barriers to HIV and abortion prevention, services, care, and support.

Despite these linkages and common sources, movements to address the various forms of criminalisation of sexuality and sexual and reproductive health remain, for the most part, disconnected. Yet even some campaign slogans lend themselves powerfully to the linkages. For instance, the International Campaign for Women’s Right to Safe Abortion claims that “Consent to sex is not consent to pregnancy”—nor is it consent to be put at risk of HIV. Given these common experiences of criminalisation, stigma, and discrimination, it is time to construct a larger umbrella to contest these human rights violations. This is, then, a call for groups representing HIV, sexual orientation and gender identity, and sex worker rights to join with women’s health and rights organisations to demand action on access to safe and legal abortions.
Water, sanitation, and hygiene must be the first lines of defence against antimicrobial resistance

Yael Velleman

As world leaders meet at the UN General Assembly to discuss the rise of drug-resistant microorganisms globally, they would do well to consider the experience of the midwives at Kiomboi hospital, in the Iramba district of Tanzania.

Before a WaterAid intervention earlier this year, Kiomboi’s taps were dry for 23 hours per day, leaving medical professionals faced with a difficult choice: risk the transmission of infection during childbirth because the delivery room and instruments could not be properly cleaned, or prescribe precious antibiotics as a preventive measure, possibly contributing to the emerging problem of drug-resistant infections.

It is difficult to describe what it is like for medical professionals like these, delivering babies and caring for patients in a hospital without adequate access to clean water or proper sanitation. The water supply to the wards runs for just 1 hour per day, medical equipment is washed in the same sink that waste from the maternity ward is disposed into, and expectant mothers wash their babies’ clothes in the dirty water of a nearby river. The only toilet is fetid and dank and the shower is next to an open sewer. Dirty hands and dirty water mean that pathogens spread quickly and babies and their mothers risk infections like sepsis.

In March, when Kiomboi was without water for 3 consecutive weeks, staff told WaterAid they had to turn first to unpredictable collection of rainwater, and then had to send a car to collect water from a river. Without readily available clean water, midwives were not able to do their jobs safely. At least 12 babies developed sepsis during this period, and two of them died. Midwives were then faced with the torturous question of whether those babies’ deaths were their fault: were those infections transmitted in the delivery process?

The experience of Kiomboi is not an isolated one, and although the hospital now has access to clean water, 42% of health-care facilities across Africa do not. It is estimated that one in five deaths among newborns in sub-Saharan Africa and South Asia are caused by sepsis, meningitis, and tetanus. Of these, sepsis is the most dangerous, leading to 18-20% of neonatal deaths.

Many of these infections could have been prevented and babies’ and mothers’ lives saved, had there been clean water, proper sanitation, rigorous hand and environmental hygiene, and infection prevention and control practices—critical to delivering quality health care. Using antibiotics to do the job of clean water, good sanitation, and good hygiene runs counter to good public health practice, and contributes to the global rise in drug-resistant infections.

Antimicrobial resistance crosses all boundaries—be they geographic or socioeconomic—and is a serious threat to
public health globally. According to the UK Government’s *Review on Antimicrobial Resistance* published earlier this year, by 2050 up to 10 million people may die every year from drug-resistant infections. This is not just a health problem, but an economic one too. It is thought that growing resistance to antibiotics could not only cost us enormously in loss of lives but could also cost the global economy up to £70 trillion by 2050.

Sustainable water and sanitation infrastructure and services and good hygiene practices that prevent infection in the first place should be part of the fight against antimicrobial resistance. This, along with prudent use of antibiotics and further development of drugs and vaccines, is essential. As an organisation, WaterAid has joined a public pledge to champion the delivery of quality health care as critical to tackling antimicrobial resistance. Along with raising public awareness, we have promised to push national governments, donors, and international organisations on the need for prevention strategies for addressing this emerging crisis.

We do so while continuing to work on the ground to ensure that midwives like those at Kiomboi now have access to clean water, the infrastructure to ensure that they are able to protect mothers and their babies from infection and care for them safely, and the awareness and training to prioritise prevention of infection and reduce reliance on antibiotics. Water, sanitation, and good hygiene are the first line of defence in combating infection and the rise of drug-resistant micro-organisms.
How we can hold leaders accountable for the health of women, children, and adolescents everywhere

Carmen Barroso

At the adoption of the Sustainable Development Goals (SDGs) this time last year, UN Secretary-General Ban Ki-moon understood that if the health-related targets are to be reached, two things had to happen: (1) we must focus specifically on the health outcomes of society’s more vulnerable citizens—women, children, and adolescents; and (2) a panel of experts must be convened to ensure accountability for these commitments. Thus, the eight-member Independent Accountability Panel (IAP) was formed. Our charge is to assess implementation of the UN Global Strategy for Women’s, Children’s and Adolescents’ Health 2016–2030. As the panel’s acting chair, I am pleased to announce the launch of our inaugural report, titled 2016: Old Challenges, New Hopes.

The report’s framework is grounded on human rights, and its overarching message is the urgency of actions to give every woman, every adolescent, and every child the opportunity to survive and thrive.

More specifically, we need to accelerate these outcomes:

• Maternal mortality must be reduced at triple the current rate
• 47 countries must accelerate their reduction in under-5 mortality
• The current trend in overweight children must be reversed
• Stillbirths must be recognised as a fundamental marker of inequity
• Efforts must be scaled up and new approaches are needed to reduce adolescent pregnancy, prevent violence, and provide services for women experiencing violence

The IAP calls inequality “a scourge of the modern world”, and has made it the centrepiece of its review of results. We note that while there has been some progress in closing gaps between the richest and the poorest groups within countries—especially in neonatal and under-5 mortality—such progress is slow in stunted growth among children and in the demand for family planning satisfied. In other areas, the gaps are increasing, such as in the adolescent birth rates, which have decreased among the wealthiest groups but not among the poorest.
Inequalities are exacerbated in humanitarian crises, where women, children, and adolescents are less able to flee and access resources and are most susceptible to violence. Today, 60% of preventable maternal deaths and 53% of child deaths take place in settings of conflict, displacement, and natural disaster, and the number of displaced people is at an all-time high.

Despite this situation, I remain optimistic. The IAP’s report outlines numerous areas of promise. For example, today’s generation of adolescents is the largest in history, with 1.2 billion people aged 10–19 years worldwide. They will be a key driver in the effort to advance the SDGs.

The report also names the health sector as a critical pathway to progress. Expected to create about 40 million new jobs by 2030 (mostly in middle- and high-income countries), the sector is a growing source of employment, especially for women.

Our report identifies three major areas where further action is required to implement the Global Strategy:

1. **Leadership** by the UN Secretary-General and Director-General of WHO
2. **Resources**, including a clear plan from world leaders and UN agencies to tap additional funding, new expectations for tax collection and evasion, and a reassessment of eligibility criteria from donor countries to include two-thirds of the world’s poor who live in middle-income countries
3. **Institutional engagement and strengthening**, particularly across data collection entities, judiciaries, human rights bodies and civil society

This is just the beginning for the IAP. We will release additional reports each year. Through these and studies, the IAP will work to hold the global community accountable for the health commitments it has made to women, children, and adolescents. We welcome your comments on this report—now and in the future.
Fiscal space analysis for health: friend or foe?

Adrian Gheorghe

A buzz phrase for the Sustainable Development Goal era, universal health coverage (UHC) has become the goal that government policy, donor programmes, and aid agency proposals all now lean towards. While few would deny the manifold social and economic benefits of good quality, affordable health care for all, how to get there—and specifically, how to finance a shift to UHC—is far less clear cut.

There are a number of ways that governments can create room within national budgets for additional spending on health. Doing this in such a way that doesn’t jeopardise the stability of a country’s economy can be classed as successfully increasing fiscal space for health. This in turn, relies on robust and accurate assessments of those options available—fiscal space analysis.

Completing such analyses is no straightforward task, however. A lack of agreed guidelines on when, how, and why fiscal space analysis should be applied is compounded by the difficulty of contextualising a primarily theoretical concept. At its simplest, the options available to governments can be distilled down to four corners of a fiscal space ‘diamond’: receiving overseas development assistance (in the form of aid and/or debt relief); mobilising more domestic resources (for example through budget reprioritisation or tax policies); increasing debt through borrowing; and increasing the efficiency of expenditure (achieving more with the same amount).

Out of touch?

There’s an increasing recognition, however, that considering the diamond in isolation of a specific country context makes fiscal space analyses meaningless at best, and detrimental at worst. For a start, the diamond model simplifies reality with its implicit assumption of equal importance to both internal and external sources of revenue. For any given country, how realistic each option is will actually depend on a host of different political economic factors—not least the macroeconomic climate and institutions within that country. These factors are also subject to change over space and time—today’s aid landscape, for example, looks very different to that of the Millennium Development Goals era, while recent economic shocks are still being played out in many low-income countries.

What’s more, some argue that by highlighting a country’s funding ‘gap’, fiscal space analysis actually paints too bleak a picture to be helpful, acting to demoralise, rather than spur on well-meaning policymakers. The 2010 World Health Report first floated the widely-cited target of spending 5% of gross domestic product (GDP) on health in order to ensure advancement towards UHC. It’s since become clear, however, that for many low income countries, 5% of GDP would not raise the minimum $86 per capita required for UHC. Our own analysis of WHO data has shown that, despite growth in health expenditure over time, most...
low-income countries are underspending in relation to estimated requirements for UHC and as a result, will likely remain dependent on foreign aid for some time.

A force for good?
Given all this, it’s no wonder that some see fiscal space analysis as an unnecessary evil that should never be the starting point for health policy reforms. Approached cautiously and coherently, however, it can be a driver of transformative policymaking.

For one, it can be a powerful negotiating tool. Too often, fiscal space analyses are completed in isolation of the annual budgetary, and medium-term public financial management, planning processes within a country. As a result, the ministries of finance who typically set budgets are not aware of, or do not fully appreciate, the importance of allocating budgetary resources to the health sector. Our analyses for countries including Sierra Leone, Benin, and Tanzania have shown that increasing the government budget to health through reallocation of domestic resources would have the largest impact on health expenditures in most cases. Given this, it’s crucial that ministries of health have robust evidence they can use during budget negotiations with ministries of finance: the results of fiscal space analyses can be the basis of this evidence.

Secondly, fiscal space analysis can be a useful reminder of often overlooked financing options that are close to home and have a potentially large impact. Improving efficiency in the health sector can be a ‘quick win’ for many governments, but only if approached in the right way: it’s not enough to simply use fiscal space analysis as a means of pointing out systemic inefficiencies without identifying relevant and politically actionable areas for improvement. In Morocco, we were able to work with the government to identify specific savings areas—namely pharmaceuticals and human resources for health—and design plans for reforming each. More generally, by laying out all the options available to policymakers, fiscal space analyses can help ‘uncover’ additional resources within a country. In Ethiopia, for example, we were able to demonstrate that gradually increasing health prioritisation budgetary allocations coupled with an increase in mandatory insurance contributions could help cover up to a third of country’s estimated financing gap.

No silver bullet
This isn’t to imply of course that fiscal space analysis in itself is a solution to health financing shortfalls—it’s simply a tool to identify options and structure pragmatic decision-making. What’s more, to be able to measure the success of health financing policies, practitioners need to bear in mind a number of considerations—not least what constitutes impact in a particular place: is health judged against its contribution to the economy or lives saved, for example? While it’s no silver bullet, fiscal space analysis can be an important tool in the arsenal of governments and donors alike as they embark on the advance towards UHC.
We won’t achieve sustainable development goals for NCDs or other targets without tobacco taxes

José Luis Castro

WHO’s recent report on non-communicable diseases (NCDs) reveals a distressing gap in our ability to achieve our Sustainable Development Goals. Outlining the disparities in progress on preventing NCDs worldwide, Assistant Director-General Oleg Chestnov’s statements on July 18 underscore the need to approach all sustainable development goals resourcefully: “If countries continue on this trajectory, there is no way they will all meet the 2030 Sustainable Development Goals (SDG) target of reducing, by one-third, premature deaths from NCDs.”

To change the trajectory for NCD prevention, strengthened health programmes, surveillance, and systems, as well as increased access to health care, are required. With so many of the SDGs designed to improve health, as well as protect our planet and guarantee the dignified existence that all the world’s people deserve, building and fortifying the means is a central pillar of success.

One obvious and strong solution for reducing NCDs and meeting our SDGs lies in tobacco taxation. WHO reports that 87% of countries have established some kind of taxation on tobacco products. This is encouraging. However, we know that only a handful of countries have established government-imposed taxes on tobacco products that are straightforward and sufficiently high. The global reach of this solution falls far short of what is needed as most countries still have high levels of tobacco consumption, low rates of tobacco tax, and under-funded health systems and programmes.

In fact, tobacco taxes are the least well-implemented aspect of the Framework Convention on Tobacco Control (FCTC). Global, best practice implementation of high tobacco taxes would not only strengthen the FCTC, the implementation of which is itself one of the health targets of the 2030 Global Goals, it would also significantly reduce NCDs. This would be achieved first through reduced tobacco use and subsequent illness, and second, by offering a ready funding source for proven public health strategies for preventing NCDs, improving health systems, and increasing access to health care.

This model of taxing unhealthy products is already working in the Philippines. In 2012, the government passed its “Sin Tax Reform Law,” simplifying what had been a complex tobacco tax structure and increasing rates by as much as 341% (for low-priced brands). The new law earmarked revenues as a sustainable source of financing for the country’s Universal Health Care Program. In just 2 years, the new
taxes subsidised insurance premiums for 14.7 million families—roughly 45 million people—approximately half of the Philippines’ population. This policy change supports many of the SDGs’ health objectives, using a proportion of overall tobacco product taxes on much-needed medical services. (The rest goes to programmes for tobacco farmers and workers to help them find other livelihoods.)

This positive impact would not have happened without the alignment of interests between the country’s Ministry of Finance and Ministry of Health. Jeramias Paul, then Undersecretary of Finance, helped reform the Philippines’ tax laws that allowed the recent gains in access to health care. Advocates in finance and trade ministries like Paul are needed in more countries to bridge the mind or policy gap between health, finance, and trade sectors of government.

Failing to tap such a ready source of development funding as tobacco taxes sets us all up for failure in meeting the SDGs. The 33 countries with sufficiently high taxes on tobacco products comprise a total population of just 690 million people of the world’s 7.4 billion. Among those countries, few have significantly dedicated tobacco tax revenues for health care and disease prevention.

This situation is a major threat that could be prevented, since the importance of tobacco taxes are well established and agreed upon, with WHO identifying them as a “best buy.” The FCTC, which was signed more than 10 years ago by 168 countries and is now legally binding in 180 ratifying countries, provides the foundation and rationale for reforming tobacco taxation. Last year’s Addis Ababa Accord cites tobacco taxes as a pillar of its action agenda for improving the world’s sustainable health goals through appropriate domestic financing. Finally, in the EU where surveys have been conducted, tobacco taxes are overwhelmingly supported by a majority of non-smokers and a substantial percentage of smokers.

With such widespread support, why is implementation of tobacco taxation so faulty?

The gaps in coordination and alignment of vision among government representatives—namely those in health, trade, and finance—are one reason for poor implementation. The tobacco industry also works aggressively to prevent taxation and keep tobacco prices low to attract children and adolescents who are the new users they wish to recruit to replace those that have died or quit. Along with their influential industry allies (such as the International Tax and Investment Center [ITIC], a known tobacco industry lobbying group), they systematically pressure ministries of trade and finance, arguing that taxes on their products will penalise the poor, or that if effective, will eventually reduce government revenues from sheer drop-off in consumption. This is the “logic” of corporate self-interest. It disregards the health and wellbeing of millions of people.

Common tactics used by the tobacco industry to oppose tobacco tax increases and earmarking include arguments that these reforms will harm the poor, stimulate illicit trade and crime, cause job losses, and reduce government revenue. History and evidence, however, shows that these claims are flawed and that declines in demand do not exceed gains in revenue. Thailand, for example, under its Health Promotion Foundation Act of 2001 established a small, 2% surcharge on tobacco and alcohol products, and earmarked the revenue to fund ThaiHealth, a state-run health promotion foundation. In 2014 ThaiHealth garnered the equivalent of US$125 million from the surcharge, a figure consistent since inception of the tax in 2001. The foundation provides programming including tobacco and alcohol control, traffic injury reduction, endorsement of physical exercise and sports for health, as well as promoting healthy eating.

Tobacco taxes can be used immediately to fund all SDGs, not just health-related targets, giving countries an opportunity to develop their economies so that their overall revenue streams are diversified and increased. These strengthened sources of revenue can replace tobacco taxes over time. In addition, by raising taxes on tobacco to sufficiently high levels, as outlined in the 2015 WHO Report On The Global Tobacco Epidemic, governments will continue to receive greater revenue even as sales taper down from reduced use—certainly in time to implement the 2030 Agenda.

This is significant, because the health and economic gains from tobacco taxes would be greatest in low- and middle-income countries. Currently, the differences are stark. Price and tax levels for cigarettes are highest in high-income countries, even when adjusting for purchasing power. Low- and middle-income countries should increase tobacco taxes through specific taxation to effectively make tobacco products less affordable, to raise revenue, and to expedite relevant progress on sustainable development. High-income countries should take note, consider more substantive or symbolic earmarking of tobacco taxes for their own SDGs, and assist where they can to encourage their low- and middle-income allies to do the same to create more sustainable economies.

It is important that leaders of nations stand up to the corporate interests that would derail government responsibility and dilute the urgency of fulfilling the 2030 Agenda for Sustainable Development. Implementing greater tobacco taxation worldwide and designating part of the revenue to public health programmes and accessible health care could help save more than 16 million lives annually in NCD prevention alone. All countries, even the poorest, have both the power and the means to increase tobacco taxes and at same time reduce tobacco use and raise much needed government revenue to fund development.
With such a powerful tool for change at our disposal, we must push government leaders to work more closely with one another to reform tax laws, establish sufficient tobacco taxation, and provide revenues for the SDGs, especially those related to health. There are compelling reasons to act now as this one fundamental change can pave the way to greater health and prosperity for the entire world.
Young midwife leaders speak: a declaration of commitment and global call for action

Our commitment

We will continue to be champions for sexual, reproductive, maternal, newborn, and adolescent health and will work to reduce cultural, gender-related, and age-related barriers to accessing quality services. We are committed to providing every woman, newborn, and her family with the respectful, high quality midwifery care needed to end preventable maternal and newborn deaths. We pledge to do so regardless of the status, location, or age of the women we serve, including in humanitarian and fragile settings. We will strive to inform our decisions with evidence and will continue to develop our leadership and management expertise. We will engage in conversations to combine our perspective with those of our senior colleagues, and to strengthen a multisectoral approach to improving health outcomes. We will contribute to high quality midwifery education that results in fully competent midwives entering the workforce. We pledge to shape our national regulatory frameworks to ensure that midwives can practice to their full scope and potential. We will champion creative ways to network with colleagues locally, regionally, nationally, and globally. We will be advocates in our institutions and our countries for achievement of the Sustainable Development Goals, specifically to achieve the objectives and targets of the Global Strategy for Women’s, Children’s and Adolescents’ Health 2016–30.

This declaration of commitment and global call for action was borne out of a series of questions put to us by the International Confederation of Midwives’ Young Midwifery Leaders programme on our perceived abilities, empowerment, and challenges; what we saw as opportunities for improved access to high quality midwifery care in our communities and countries; and the challenges associated with seizing those opportunities. As we endeavour to adopt best practices from across regions, we invite midwives and colleagues to join with us in enabling all women, newborns, and their families to not only survive, but to thrive and transform.
Our challenges
We need to collectively find ways of overcoming the gender-based sociocultural, economic, and professional barriers to the provision of quality midwifery care. To do this we need to gain leadership, management, and research skills needed to fully integrate midwifery into the health system. We appreciate investments made to increase the number of midwives in our countries through expansion of pre-service education, yet many graduates lack jobs. Our diploma-level programmes do not provide career ladders to higher education. Many of us work in resource-constrained environments that lack the equipment and supplies needed to consistently provide high quality midwifery care. Midwives often work long hours and may receive unfair or inconsistent wages. We require safe, secure work environments that protect us from infectious disease, injury, or violence. Many of us live and work in areas that do not have ready access to information and communication technologies needed to connect us to colleagues and evidence-based practice recommendations. Our countries must develop the policies needed to create, manage, and support human resources within our health systems.

Our call to action
We call for a unified voice and collaborative action on midwifery to ensure all women, newborns, and their families have access to the best possible quality of respectful midwifery care. To enable this we call for legal recognition in our countries that promotes a full scope of practice consistent with the International Confederation of Midwives essential competencies and standards. Midwives must be positioned to influence policies affecting care for the women and families we serve. We expect gender equality for all midwives and the women we serve. We call for an end to all forms of discrimination to ensure all women, newborns, and their families achieve their right to equitable quality care. We pledge our commitment to emerging regions where the economic transition has had no positive effect on maternity services and women’s health is not a national priority. We require resources to ensure that midwives are prepared to provide this care for all, including those in the most vulnerable and underserved communities. We challenge all members of our health care teams to work as equal partners to build systems that provide evidence-based and respectful care to all women.

This declaration was recited at the symposium Young Midwives in the Lead, May 15–16, 2016, ahead of Women Deliver 2016 in Copenhagen, Denmark.
Health and climate: the road of opportunity

Nick Watts and Hugh Montgomery

Six months after the international climate agreement was reached in Paris at the 21st Conference of the Parties (COP21) to the UN Framework Convention on Climate Change, the World Health Organization returned to the French capital on July 7–8 to host the second Global Conference on Health and Climate. Here, a mixture of policy makers, technical experts from development agencies, and non-governmental and civil society organisations gathered to discuss how to build healthier societies through the COP21 agreement. How can we turn its expansive global objectives into tangible outcomes that improve the health of our people and our planet?

The evidence is clear—climate change is fundamentally harmful for our health and our climate. Atmospheric energy gain is resulting in more severe storms, heatwaves, floods, droughts, and fires, all of which lead to widespread disruption of water and food supplies. Climate change is also changing the distribution of vector-, food-, and water-borne infectious diseases.

The good news is that, as stated by the 2015 Lancet Commission, “tackling climate change could be the greatest global health opportunity in the 21st century”. This isn’t just through averting the health impacts of climate change—it is also because action on the drivers of climate change happens to be very directly beneficial to health. However, to make our societies healthier and more sustainable, we need a plan of action for those changes to be implemented. The following four action points are proposed for success in this road of opportunity:

1. Capitalising on the co-benefits of reducing air pollution: Combustion of fossil fuels releases ‘greenhouse gases’ that drive climate change while also polluting air with particles and gases that are directly damaging to human health. Indeed, such air pollution caused 3.7 million deaths in 2012 worldwide. By promoting more sustainable and greener transport systems, alongside active transport like cycling and walking, we can reduce outdoor air pollution and increase both physical activity, which itself improves health, and health equity.

2. Building adaptable and resilient health systems: Health systems that are climate resilient are able to better cope with the challenges faced when climate-related disasters strike. Such disasters can include failure of sanitation, power, and water supplies during extreme weather events, and could have catastrophic, and even fatal, consequences for the patient. Meanwhile, extreme weather events driven by climate change, such as heatwaves or flooding, have immediate impacts on population health. Already, many countries struggle in their current climate and weather conditions, raising great concern surrounding the risks of further projected impacts of climate change. Yet, only 1.5% of international climate change adaptation finance...
is currently allocated to health projects. Financial support should be scaled up to ensure health system resilience to extreme weather events.

Counting the cost: The direct health costs of climate change are likely to reach US$2–4 billion per year by 2030. The indirect costs are likely to be greater, with the poorest first, and initially worst, affected. Avoiding such costs makes economic sense. Short-term measures such as placing a price on polluting fuels could cut outdoor air pollution by half, reduce carbon dioxide by more than 20%, and accumulate $3 trillion USD per year in revenue. The long-term case is also strong, with the financial savings and economic gains from health improvements vastly outweighing the costs of global mitigation efforts to stabilise global warming.

Tracking the progress: A number of international processes track elements of action on health and climate change. These include the 2030 Sustainable Development Agenda, national reporting to various mechanisms of the UN Framework Convention on Climate Change, and progress reports to the World Health Assembly. However, a comprehensive and integrated approach is required so as to collate all action on climate change mitigation and adaptation as well as its observed and projected impacts on health.

As the global health community awakens to the immediate and grave threat posed by climate change, it is essential that action agendas are continually revised and monitored to ensure that countries meet their national and global commitments. As part of this process, a new Lancet Commission, ‘Lancet Countdown: Tracking Progress on Health and Climate Change’ will track the world’s response to climate change. Reporting annually in The Lancet, and with quarterly case histories, it will follow a series of indicators of action and outcome.

It is hoped that such efforts to monitor international action to protect human health from climate change will help keep us all on the right road to 2030—one that ends with the planet and its people in good health.
The Global Fund replenishment 2016: a chance to tip the balance

Saira O’Mallie

A major event in global health will take place in September when governments convene in Montreal to replenish the Global Fund to Fight AIDS, Tuberculosis and Malaria—a multilateral public-private partnership tackling preventable diseases.

The Global Fund has set a target of $13 billion to continue its work for the coming years. But why should donors—governments and organisations whose budgets are already stretched by humanitarian crises such as those in Syria and neighbouring countries—pledge money to the Fund? The answer is simple: the Global Fund works. It helps to provide affordable and effective treatment and supports prevention health programs run by local experts in the countries and communities most in need. Without investment in the Fund, eight million lives would be at stake.

Since its founding in 2002, the Global Fund has helped save 17 million lives and has invested in scientific advances that have brought victory against AIDS, tuberculosis, and malaria within reach. This success is largely thanks to the Fund’s targeting of expert resources on those groups who are most affected by deadly disease and whose health is vital to secure stable, productive communities in which quality of life can prosper.

The Fund recognizes that poverty and deadly infections are sexist: girls and women in developing countries suffer the most. This gender blight is starkest in sub-Saharan Africa, where young women are twice as likely as young men to be living with HIV, and where 857 young women aged between 15-24 are infected with HIV each day.

This is why the Global Fund allocates the majority of its spending—between 55 and 60%—on girls and women. Statistics aside, the Fund has a powerful focus on gender, emphasising the human rights of girls and women, funding programmes which address challenges that predispose women and girls to disease, and systematically incorporating gender analysis into their work.

In addition to focusing on hard to reach groups, the Global Fund operates in some of the world’s most vulnerable areas. It has programmes in nearly 80% of ‘Fragile and Conflict Affected States’ (FCS). FCS account for just under one third of all people living in extreme poverty, one third of HIV related deaths in developing countries, and half of children who die before their fifth birthday.

Disease doesn’t respect borders, and the sudden or unexpected movement of large numbers of people can cause other challenges. Highly contagious diseases such as TB can spread quickly in these scenarios, overwhelming the...
system. The refugee crisis of people fleeing the Middle East and North Africa is one such case where a rapid and devastating outbreak could occur. To address this, the Global Fund has stepped up its response in treating Syrian refugees in Jordan and Lebanon.

The rationale for donors to make ambitious pledges in support of the Global Fund could not be more clear. Some have already committed: the French Government pledged €1 billion, and Canada and Japan have increased their previous commitment by 20%.

Now all eyes turn to the UK. The UK Government has been asked to commit £1.2 billion—a 20% increase on its previous donation. This amount alone would help save 1.1 million* lives. Without a bold commitment from the UK, the Global Fund will miss its target and its work will need to be scaled back.

As it recalibrates its place on the global stage, the UK must now be seen to be leading, offering, as it frequently has, inspiration, hope, and leadership through bold and dynamic example.

Improving the health of those in developing countries is vital for all our futures. Answering Civil Society’s call to provide the Global Fund with the full £1.2 billion is, then, an opportunity that cannot be passed up.

* From ONE calculation based on a UK contribution that is equivalent to 14% of the 8 million lives the Global Fund expects to save in the 2017–2019 replenishment.
Rethinking undergraduate global health education: the Bellagio Global Health Education Initiative

The Bellagio Global Health Education Initiative

Global health clinical electives provide international clinical experiences that are transformative for medical students across the globe. Despite the popularity and impact of these courses, however, questions remain regarding the student populations for whom these courses are most beneficial and the appropriate ways to assess their learning. In June 2015, experts in global health education gathered at the Bellagio Conference Center to discuss these outstanding questions.

Every faculty member responsible for students participating in global health clinical electives has heard a student say, “That experience changed my life!” However, despite the transformative impact of global health clinical electives on some medical students and the popularity of global health education (GHE) in high-income country medical schools, one can ask: should GHE be part of the curriculum for students in every country, or is it of use only for students from high-income countries who intend to practise outside their own country? Other fundamental questions include: Can global health be learned in the classroom, or does it require an experience in a culturally foreign setting? How can we assess a student who is learning on a distant global health clinical elective under the supervision of a faculty member who may have only a tenuous connection to the student’s home institution?

These key questions motivated our discussions in June 2015, at the Rockefeller Foundation’s Bellagio Conference Center. 19 GHE faculty, administrators, policy makers, and trainees from ten high-income, low-income, and middle-income countries participated in a conference entitled “Towards a universal medical student curriculum for global health.” A combination of formal debate, brief talks, nominal group process, and group discussion began to answer these questions.

Deliberations were guided by two main principles. First, we aimed to use work that has already been published, including work defining global health competencies, the biosocial approach to managing global health problems, and the epidemiology of global health problems. This was done while recognising, however, that limited input by low- and middle-income countries (LMICs) may limit the universal applicability of some of this work. Second, deliberations aimed to focus on what is unique to GHE that all students need to learn while defining the learning needs of students who are interested in global health careers. For example, all students need to learn principles of cross-cultural medicine to be competent to practise medicine in cross-cultural environments within their own country. However, only students who are especially interested in...
global health need to learn about evidence-based emerging health priorities for specific global regions.

Five key curricular recommendations resulted from deliberations at the conference. First, we advise that all students will benefit from GHE in their core curriculum. Conference members identified eight GHE themes that all students should learn, including communication, culture, healthcare delivery, social determinants of health, burden of disease, ethics in global clinical practice, using clinical skills in a limited-resource environment, and basic management skills. An ‘away’ experience, defined as one in which the student lives in an unfamiliar culture, is preferred but not required. Global health clinical electives are increasingly popular ‘away’ experiences for students from LMICs. There is a growing awareness that global health concepts apply to underserved populations in high-income countries, and a growing appreciation that high-income countries may have less to teach LMICs than to learn from them.

Second, we recommend involvement of students and faculty from both the home and the ‘away’ institution. For example, the LMIC student’s cross-cultural experience at an ‘away’ site may be just as surprising and transformative as a high-income country student’s. For LMIC students, emphasising experience at in-country ‘away’ sites would enable learning academic and affective skills appropriate for low-resource settings while avoiding idealising high-income country technological advances.

Third, we emphasise the uniqueness of the experience at the ‘away’ site. Currently, there is only one medical school we know of that has incorporated a required global health clinical elective into the curriculum. Principles and skills relevant to GHE can be effectively taught in the classroom, but a transformative global health educational experience is facilitated by experience outside a student’s comfort zone.

Fourth, we recommend that the design and implementation of global health clinical elective experiences promote transformative learning. Defined as a change in a student’s understanding of the internal structures used to organise their experience of the world, we believe transformative learning is facilitated in global health clinical elective settings. For example, a US medical student sent a series of emails home to his wife explaining how working in a limited-resource environment in Kenya was similar for him to experiencing grief. In addition, an African student completing an elective in the USA realised that her rich clinical exposure at home had included exposure to teachers who relied more confidently on their clinical skills than did many US clinicians.

Fifth, while evaluation of coursework in global health at a student’s home medical school could involve multiple-choice exams, essays, or problem solving exercises, ‘away’ experiences should emphasise the use of reflective practice skills. These might include reflection papers, journals, and blogs that map a student’s experience and enable formative review with an experienced tutor.

On the last day of the conference, we formed the Bellagio Global Health Education Initiative (BGHEI), which, over 2 years, aims to reframe the discussion about GHE goals, teaching, and assessment methods, and the necessity for all medical students, regardless of their country of origin, to be exposed to the principles and experience of global health.

BGHEI members and institutions: Timothy Brewer (University of California–Los Angeles, USA), A Mark Clarfield (Ben Gurion University Medical School for International Health, Israel), David Davies (Warwick Medical School, UK), Bishan Garg (Dr Sushila Nayar School of Public Health, India), Tobin Greensweig (Indiana University, USA), Janet Hafler (Yale School of Medicine, USA), Jianlin Hou (Peking University, China), Anne Kellett (Yale School of Medicine, USA), Moira Maley (The Rural Clinical School of Western Australia, Australia), Carmi Z Margolis, Editor (Prywes Center for Medical Education, Ben Gurion University Faculty of Health Sciences, Israel), Harriet Mayanja-Kizza (Makerere University, Uganda), Michael Peluso (Brigham and Women’s Hospital, USA), Senga Pemba (St Francis University College of Health, Tanzania), Robert Rohrbaugh (Yale School of Medicine, USA), Jenny Samaan (Global Health Learning Opportunities, USA), Stephen Schoenbaum (Josiah Macy Jr Foundation, USA), Babulal Sethia (Royal Society of Medicine, UK), Juan Pablo Uribe (Fundacion Santa Fe de Bogota, Colombia), Susan van Schalkwyk (Stellenbosch University, South Africa).
End coal not lives

Sophia David

A major contributor to both air pollution and climate change, the burning of coal has dire consequences for our health and our environment. The UK Health Alliance on Climate Change highlights the importance of the phase-out of coal, supporting replacement by clean, renewable energy.

The UK Health Alliance on Climate Change was launched this year. Bringing together major medical organisations, including the Royal Colleges of General Practitioners, Nursing, Physicians, and Paediatrics, the Alliance advocates for stronger solutions to climate change and calls for health to be placed firmly at the centre of climate and energy policies.

An initial focus for the Alliance is air pollution, given its dire impact upon health. WHO estimates that air pollution contributes to 7 million deaths each year. Coal plants contribute substantially to air pollution. They also happen to be one of the most carbon-intensive energy sources—the primary cause of climate change.

Burning coal produces a number of air pollutants that are harmful to health, including sulphur dioxide, nitrogen oxides, and particulate matter. Sulphur and nitrogen oxides react further in ambient air forming secondary fine particulate, whilst nitrogen oxides also contribute indirectly to the formation of ozone. Fine particulate matter and ozone are the most concerning for health. Heavy metals, such as mercury and persistence organic pollutants, are also emitted from the smokestack of coal power plants. They can also be taken up through food and water. There is particular concern around the mercury emissions since these can impair cognitive development of children. Short- and long-term exposure to these air pollutants affects the lungs and the heart. Exposure is linked to cardiovascular diseases, such as such as myocardial infarction, congestive heart failure, ischaemic heart disease and heart arrhythmias, and respiratory disease, such as chronic bronchitis, emphysema, and lung cancer. Phasing out coal plants in favour of clean, renewable sources of electricity simultaneously slows climate change and improves health, and it has a key third benefit of being hugely cost-effective.

Pollutants can travel over long distances and across borders. A report entitled Europe’s Dark Cloud released this week reveals that, in 2013, emissions for European coal plants were responsible for over 22,900 premature deaths, tens of thousands of cases of ill-health from heart disease to bronchitis, and up to €62.3 billion in health costs. It finds that the harmful dust caused by coal plants travels far beyond borders—eg, coal plants in Poland were estimated to cause 4690 deaths in other countries.

In Ontario, Canada, 7560 megawatts of coal electricity were completely phased out in 2014, delivering savings worth approximately US$3 billion per year from...
avoided health impacts. UK Secretary of State Amber Rudd announced in November 2015, that it would phase out coal power by 2025, while Scotland has already closed its last coal-fired plant. In the USA, New York state announced in January, 2016, that it would phase out coal power by 2020, and the state of Oregon passed legislation in March, 2016, to phase out coal power by 2040. Europe’s Dark Cloud shows that each coal power plant closed provides a major boost for the health not only of those living nearby, but also for those in other countries: the UK’s planned phase-out of coal by 2025 could save up to 2870 lives every year—more than 1300 of them in continental Europe. If Germany decides to phase out coal, it could avoid more than 1860 premature deaths domestically and almost 2500 abroad every year.

The UK Health Alliance supports the phase-out of coal, to be replaced by a clean, renewable energy. We will be advocating for policies that promote clean energy and achieve health co-benefits, and are calling on the UK Government to bring forward legislation to follow through on its promise.
Global risks and consilience: mapping a way forward

Chris Simms

Along with good intentions, fear and anxiety pervade the agendas of recent world community gatherings such as the World Humanitarian Summit that took place in May 2016, the High-Level Signing Ceremony of the Paris Agreement on Climate Change in April of the same year, the High Level Conference on Global Health Security in March 2016, and the World Economic Forum in January. World leaders as well as ordinary people are increasingly worried about rising numbers of catastrophic events, including those related to climate change, migration, global health security, and social instability.

Concurrently, there is a broadening and deepening of public awareness of conspicuous inequalities, plummeting social trust, and failure by the global community to mitigate and adapt to risks even as they cascade into one another. Over the last two decades, the global community has sought to address risk, for example, by reducing relative and absolute poverty. The evolution of international health into global health, and its introduction into foreign affairs, diplomacy, and international relations are part of this trend. However, with global warming, terrorism, and migration now at the fore, other efforts to understand and deal with new and existing risks have emerged. For example, public and private sectors (as well as academics) are turning to so-called superforecasters to predict near-term social and political events. With a record of consistently outperforming the experts, superforecasters use statistics and systematic analysis to synthesize material from diverse fields of investigation; although they make predictions with precision, they keep an open mind and are prepared to adjust and readjust their predictions as they learn from mistakes and take into account new data. Other efforts have built on research into social networks (which suggest that we are led by people around us) that may help predict major events such as epidemics. Elsewhere, there is a focus on connectography which claims that connectivity not geography will map out destiny and integration and globality will be our new morality.

Another means of understanding anxiety-producing global risk is by looking at historical events and the maps that described them. For example, the public health and epidemiological factors underlying the Black Death in 14th Century England that killed more than one third of the population are today well understood. Recent research and mapping of the epidemic reveal a country living “in constant fear of God’s wrath and the end of the world”. This is captured in what today might pass for a blog post or a tweet: scratched into the stone of St. Mary’s Church (north wall of the nave) in Ashwell, Hertfordshire in 1361 is the following—“There was a plague 1000, three times 100,
five times 10, a pitiable, fierce violent [plague departed]; a wretched populace survives”.

In contrast, when cholera hit a district of London known as “the Golden Square” centuries on (1854), it elicited a different response; this time maps were not drawn retrospectively by historians but rather by a local physician, Dr. John Snow. He is described as a consilient thinker, that is, he drew on different disciplines (including bacteriology, medicine, statistics and what would be, epidemiology) to plot out cholera cases and a map of the epidemic. With the help of a clergyman who provided local knowledge he identified the neighbourhood water pump as the source of the outbreak and then acted as an advocate to persuade authorities to close the pump, thus ending the epidemic.

This notion of consilience (a term resurrected by E O Wilson) is discernible in the Global Risk Report’s interconnected maps, global health (as defined by the Consortium of Universities for Global Health), superforecasting, and connectography all of which draw on many disciplines. Global health bolsters its consilient profile by drawing on knowledge and experience from developed and developing countries, by using quantitative, qualitative, perception data (from ordinary people as well as specialists) and, by stressing partnerships and collaboration to bring these worlds together. If “consilience” evokes the notion of reform of global learning in order to tackle global risk, it is relevant to this discussion.

However, despite E O Wilson’s “noble and unifying vision” of consilience and its embrace by parts of the global community, the community itself is not unified. Many observers are disconcerted by the great divide between the development and humanitarian communities as well as between the global health and humanitarian communities. For example, the scheduling conflict between the World Humanitarian Summit and the World Health Assembly (in May 2016), and the notable absence from the Summit of high-level support, Ministers of Health and other stakeholders seem to underscore this divide—one which makes any significant decisions less likely, especially as they relate to resource allocation—leaving ordinary people vulnerable to catastrophic events still vulnerable.

In a recent BBC interview, Peter Piot reached back 20 years ago to when, as Executive Director of UNAIDS, he witnessed up-close a fractured global community as it sought to deny antiretroviral therapy (ARVs) to Africans—when the science and opportunity existed to save lives. He was surprised and angered by this ignoble undertaking. Yet it’s unclear how much has changed over the last two decades. Despite the science and mapped predictions, the global community has failed to deal effectively with climate change. With consilience as a backdrop, perhaps the way forward is to examine the fracture itself and the handful of stakeholders that direct it through opaque negotiations and decisions typically unmoved by science, peers, or victims. In the meantime, it appears that the global community has not yet the capacity to deal with the overarching paradox—that while we are more hyperconnected than ever, we are increasingly fractured.
Universal health coverage: an imperative for the health of women, children, and adolescents

Giorgiana Rosa

While it may not be immediately obvious to everyone, the growing movement for universal health care (UHC) offers significant opportunities for faster and more equitable progress on reducing maternal and child deaths. The Ebola crisis, and now the Zika outbreak, demonstrate what happens when health systems are weak and under-resourced, and when women and girls do not have access to comprehensive sexual and reproductive health services.

We know that ongoing preventable mortality in pregnancy and childbirth and deaths of newborns and children under 5 occur mainly among the poorest and most disadvantaged groups and, increasingly, in humanitarian crises and fragile contexts. UHC is critical if we want to address persistent and growing health inequities in women’s, children’s, and adolescents’ health. That fact is highlighted in Save the Children’s new report, *A common cause: reaching every woman and child through universal health coverage*, co-published with the Partnership for Maternal, Newborn and Child Health (PMNCH).

The data show the extent to which income levels, where people live and—perhaps most strikingly—women’s level of education, largely determine access to the essential health services that can prevent women dying in childbirth and newborns and children not surviving infancy and childhood. It is also clear that there has been slower progress in reducing maternal and newborn deaths, compared to deaths of children under 5. Some interventions in the ‘continuum of care’ of sexual, reproductive, maternal, newborn, and child health—particularly access to skilled care during childbirth and post-natal care for both mothers and babies—have lower coverage rates overall and access is highly unequal. Interventions that require well-functioning health systems that are available and accessible to everyone, around the clock, have not seen as much progress as is needed.

While we know that education and other social factors are strong determinants of access to health care and of health outcomes, it is also clear that under-financed and under-staffed health systems, and out-of-pocket spending, remain key barriers to access to essential health care. And these barriers have a particularly devastating effect on women and children, with horrific cases of pregnant women being denied life-saving care because they cannot pay for it, or being detained in health facilities until money can be found to pay for their health care. Fragmented and poor quality health care also deters women from seeking the services they need, with adolescents facing barriers due to stigma, costs, and services which are not youth-friendly or suited to their needs.

Jane Hahn/Panos for Save the Children
Fortunately some countries show signs of progress. Burkina Faso, where Save the Children has been campaigning for UHC, has committed to free health care for pregnant women and children under 5, as well as free screening for breast and uterine cancer. The challenge now is to ensure that free health care for these vital services is backed up by the necessary investment in health systems, including medicine supplies.

UHC—the principle that everyone should have access to essential, quality care without financial hardship—is a fundamental human right and public health imperative. To end preventable maternal and child deaths and implement the Global Strategy on Women’s, Children’s and Adolescents’ Health, countries must commit to UHC in a way that guarantees this essential health care, free at the point of use. These services are universally needed, by all families and communities everywhere, and they form the basis for an effective, equitable, and comprehensive health system.

In support of this sentiment, the Elders recently launched a new initiative on UHC, as part of their work on social justice and human rights. Their championing of women, children, and adolescents to be a UHC priority; of the need to strengthen primary health care; and of public financing and services which are free at the point of delivery should resonate with all maternal and child health advocates, nationally and globally.

The G7 also strongly endorsed UHC at their summit in Ise-Shima, with a welcome focus on universal access to sexual and reproductive health services. UHC is indeed an inherently political process, grounded in human rights, and therefore not straightforward. It requires sustained political and financial commitment and investment by governments and development partners. It also requires scrutiny, participation, and activism by communities and civil society, holding governments to account to do all they can to ensure access to essential health care for all their people.

If UHC means anything, surely it means that vital health services, needed by everyone from birth to survive and grow, should be accessible to every woman and every child everywhere.
The Expanded Special Project for Elimination of Neglected Tropical Diseases (ESPEN): new directions, new opportunities

Sally Theobald and Ifeoma Anagbogu

The African Programme for Onchocerciasis Control (APOC), a key actor in the fight against the disease responsible for a high burden of disability in Africa, closed in December 2015. Under the leadership of the WHO/AFRO Regional Director Matshidiso Rebecca Moeti, a robust consultation process led to the creation of the Expanded Special Project for Elimination of Neglected Tropical Diseases (ESPEN), which was launched on day 1 of the 69th World Health Assembly in Geneva on May 23. We detail here the principles underlying the new approach.

The launch of Expanded Special Project for Elimination of Neglected Tropical Disease (ESPEN) highlights a desire and opportunity for change within the neglected tropical disease (NTD) community. For academics, advocates, and implementers, it is a chance to make change happen and to ensure that no one is left behind in achieving the control and elimination of ESPEN's five priority NTDs. Here is what ESPEN embodies:

1. A move from a single disease to addressing multiple NTDs through a coordinated health systems approach

ESPEN represents a paradigm shift from a vertical programme focusing on one disease to an expanded focus that also targets other NTDs amendable to preventive chemotherapy approaches: lymphatic filariasis, trachoma, soil transmitted helminths, and schistosomiasis. The ESPEN logo cleverly illustrates this with 5 bars making the shape of Africa representing the new expanded focus. At the launch, Dr Moeti explained how this integrated approach focusing on strengthening health systems will reduce transactional costs, enable programmes to work in stronger partnership, align goals, and promote efficiency. In response Isaac Adewole, Federal Minister of Health Nigeria, referred to the need to address “the neglected” in NTDs and make sure they are included in a basic package of health care services. This is a critical step to promoting universal health coverage.

2. Strategic partnerships amongst multiple stakeholders

In her address at the ESPEN launch, Dr Moeti explained how the project has been “achieved through consensus and will be executed through partnership” and called on all in the room to join forces to nurture ESPEN and eliminate NTDs. ESPEN embodies country ownership and there were strong calls for enhancing domestic funding as a way to
strengthen ownership as well as the need to better recognise the range of in-country support that underpins actions to address NTDs. The partnerships forged in the creation of AFRO were evident in the panel with representation from WHO, several Ministers of health, government, donors, drug companies, and academia. But further partnerships are also required:

**Partnerships within and beyond the health sector**

The need for NTD programmes to strengthen health systems was laid out in the Addis Ababa NTD commitment in 2014 and further endorsed in the ESPEN launch. Critical too is multisectoral action, as clearly articulated by Minister Kesete from Ethiopia, who talked about the need to build links with different sectors, including water, nutrition, sanitation, and education. NTDs are inextricably linked to social development and inclusion, and making an impact on NTDs requires action against all the Sustainable Development Goals. The inclusion of NTDs in SDG3, “Ensure healthy lives and promote the well-being for all at all ages”, should help facilitate cross-sectoral partnerships.

**Partnerships with community-based structures and affected individuals, households and communities**

APOC pioneered work on community-directed treatment with ivermectin—through partnership with community-selected drug distributors (CDDs)—by delivering ivermectin once a year to affected and at-risk communities. Although affected communities and CDDs were sadly not represented at the launch, their partnerships will be critical to ESPEN’s success and should be consulted in the future. New challenges will include appropriately supporting, sustaining, and remunerating CDDs in efforts to work across the new expanded portfolio of ESPEN diseases; and appropriate engagement and support of communities for treatment, disease management, disability and inclusion.

**3. Robust and appropriate data for evidence-based action**

The ESPEN logo also demonstrates the need for approaches to be underpinned by evidence. At the ESPEN launch, under questioning from Richard Horton from The Lancet about where we need to improve, Ken Gustaven, Senior Vice President from Merck, highlighted the need for better data. The selected country profiles (2016) distributed at the launch were certainly data-heavy, with comprehensive country profiles and figures on preventive chemotherapy. These do not, however, capture the challenges and opportunities for health systems strengthening, or the voices, realities, and experiences of community-based drug distributors and affected communities. Complementary social science research will be important to underpin a robust, people-centred health-systems approach. Also, there is a need to translate evidence for improved or alternative strategies more rapidly and efficiently into existing programmes to facilitate the scale-up required to meet the rapidly approaching targets of the WHO NTD roadmap.

**4. A strong equity stance and focus on addressing poverty and achieving universal health coverage**

Margaret Chan famously described NTDs as the litmus test for universal health coverage. At the ESPEN launch, the need for new expanded approaches to eliminate diseases that still affect the poorest, most vulnerable and marginalised individuals, households, and communities was discussed. Mwele Malecela, Chair of the regional Programme Review Group, explained how NTDs impact most profoundly on women and girls, while Isaac Adewole, Federal Minister of Health Nigeria, stated how NTDs are both diseases of poverty and causes of poverty. He challenged the health sector to create a platform for eliminating poverty and promoting employment in order to share prosperity and eliminate NTDs.

**5. Strong women’s leadership**

Promoting equity and gender equity is central to the SDGs; but SDG5—the goal committing countries to achieve gender equality and empower all women and girls—is, as argued by Richard Horton, the neglected SDG for health. Increasing women’s leadership in global health will support more responsive and equitable approaches. Women’s leadership was encouragingly loud and clear in the formation of ESPEN and in the launch. Engaging women at all levels of the health system will be critical as we move forward to meet the 2020 targets and the Sustainable Development Goals.
Growth rates and aggregates: bringing data to the soda wars

Rajeev Cherukupalli

A 2013 public health initiative in Mexico introduced a tax on sugar-sweetened beverages (soda) of one peso a litre, resulting in soda prices rising when compared to bottled water and other untaxed beverages. While that much is clear, the effectiveness of the tax on reducing consumption is hotly debated in what is the second largest soda market by volumes sold in the world, with implications for other countries, large and small.

Market watchers, policymakers, public health advocates, and economists often look at the same piece of data and end up with wildly differing conclusions. Setting aside professional allegiances, at least some of the differences in conclusions arise simply from interpreting the same metrics differently, from looking at different time windows, or simply from focusing on very different metrics when assessing impact. This seems to be happening in Mexico as well.

Soda purchases happen at the individual and household level, and a policy change that makes soda more expensive should show up in per capita consumption. That is indeed what happened in Mexico—per capita consumption fell by over 5 litres in 2014, and by an additional 1 litre in 2015 (figure 1A). This 6-litre decline also differs from what happened in countries in the Americas with comparable per capita consumption over the same two years (figure 1B). While the USA has seen a continuing decline for some time now, Chile has seen a continued increase in soda drunk per capita.

Empirically-minded economists and public health researchers, however, avoid inferring causality from looking at graphs of raw trends and trend changes. They instead focus on whether an observed change in consumer behaviour of the sort seen in Mexico can indeed be attributed to policy changes rather than other, unrelated trends affecting consumer behaviour. This includes finding the right data set—ideally consumer or store-level panel data, positing plausible control groups, quantifying whether taxes get passed on to final retail price, and examining whether prices change in similar or heterogeneous ways across different brands of soda, different types of retailers, and over the months after a tax change.

More than one research study confirms that product prices of sugar sweetened beverages rose in Mexico by more than the amount of the tax increase, and that consumption fell per capita for sugary drinks while it rose for unsweetened beverages. The policy-attributable decline in per capita consumption between 2013 and 2014 was about 6%, or 4 litres in 2014, which ties up nicely with the observed 6 litre decline in the raw data in figure 1A. Overall, this points to a change in Mexico that did not happen in other countries.

Some observers have looked at aggregate rather than per capita soda consumption and the fact that total volumes rose slightly in Mexico in 2015 (the positive growth rate in...
figure 2), to suggest that the tax has lost its effect. Year-on-year growth rates, tracked closely by beverage manufacturers, by investors, and by the market analysts who follow firms and industries through quarterly company calls and annual reports, are marshalled to make this argument. But this line of reasoning doesn’t really hold up to scrutiny.

Total volume sales can be calculated by multiplying population by consumption per capita. Mexico has a growing population (1.2% annual growth), so that, even if each person drank the same amount of soda from one year to the next, total sales levels should rise in any given year, and total sales growth should be positive. Any annual change in total soda volumes that is below 1.2% essentially implies Mexicans are drinking less soda on a per capita basis.

Of the ten largest markets for soda (figure 3), Mexico has the highest population growth rate after the Philippines and India (1.7% and 1.2%). Growing populations explain why total soda consumption would be expected to grow in any of these countries. Changes in consumer behaviour explain why per capita consumption has declined in Mexico for two years running.

Perhaps the more striking story globally is how different per capita volumes are, even across these ten large markets. The world average of soda consumption has stayed at about 30 litres per capita for several years. China (9.6 litres) and India (3.6 litres) fall well below this average. By contrast, parts of the world exceed 100 litres of soda per capita in a year, and many other countries outside this group are approaching a 100 litres a year. This certainly matters for obesity—the average Mexican, while earning about 30% more than the average Chinese adjusted for purchasing power differences, essentially drinks 40 times as much soda.

One line of criticism of Mexico’s experience with its sugar-sweetened beverage tax was the focus on the magnitude of policy effects rather than the statistical significance of them. Given the sheer volume of sugar in the diets of many populations of the world, it is tempting to...
dismiss a tax-induced decline in soda consumption of the sort seen in Mexico as being insignificant for obesity. But put in perspective, the per capita consumption of soda fell over 2 years by nearly the amount that the average Indian drinks in the same 2 years. And that is a data point that that policymakers with the long game in mind should be able to toast to, with bottomless glasses of sparkling water.
Co-payments and user fees: are they compatible with universal health care?

Naveen Tenneti

Universal health care (UHC) aims to ensure that all people can access the health services they need without suffering from financial hardship. UHC, by its all-encompassing nature, is necessarily an expensive endeavour. The long-term benefits that accrue from healthier populations, however, far outweigh the short-term costs. Yet this doesn’t stop the foundations of UHC being targeted by the short-termism implicit in 24-hour media cycles and political turbulence. Particularly in higher-income countries, the moral panic of ageing populations and the burden of chronic disease have led to much hand-wringing and short-sighted proposals to reduce spending.

Australia, one of the first countries to institute an effective UHC system, is going to the polls on July 2 to elect a new government. The current conservative liberal government released its budget proposal with a raft of health measures that have created unease in the health-care community.

The structure of the Australian health-care system is complex with a “web of services, providers, recipients and organizational structures” cutting across both private and public mechanisms. All Australians are covered by Medicare, which is a universal public health insurance scheme covering treatment in public hospitals, part payment (rebate) for certain professional health services, and a number of subsidised medications. The Medicare rebate—ie, the amount the government will cover for a service—has been frozen since 2012 (2014 for general practitioner consultations) with respect to the consumer price index. The government’s budget proposal would extend this freeze until July 1, 2018. By not increasing the rebate with the consumer price index, the rising costs of wages, utilities, and health-care material are left with the service provider. Many general practitioners who currently accept full payment via Medicare argue that this will give them no choice but to charge an out-of-pocket co-payment to the patient.

The impetus behind these new measures, unsurprisingly, is the rise in global health-care costs. In 2011–2012, Australia spent AU$140.2 billion on health, around 1.7 times more in real terms than in 2001–2002 and corresponding to approximately 9.5% of GDP. This expenditure has outstripped population growth, with per person expenditure rising by almost $2000 to $6230.

The economic rationale for co-payments is based on the utility maximising consumer reducing their demand due to rising prices. The consumer begins to weigh up the decision of attending the doctor more carefully and thus “unnecessary visits” decrease. This premise was borne out in the RAND Health Insurance experiment which found a price
elasticity of demand for health services of between –0·1 and –0·2 (ie, a 10% increase in price leading to a 1–2% drop in use). The Australian Department of Health advised that it expected to see a reduction of 1% in the growth of general practitioner consultations, leading to 1 million fewer consultations. A crude estimate based on the Medicare schedule fee of $36·30 would suggest savings of approximately $36 million.

There are a number of questions, however, that the above statistics do not explain:
- How does this elasticity vary based on level of income?
- Do reduced health-care attendances result in better downstream health outcomes from a reallocation of resources?
- Do we trust health consumers to make decisions about what constitutes a necessary consultation?

Whilst there are few data on income and the elasticity of demand for health services, we do know that cost prevents people from accessing health services. Australian Bureau of Statistics data from 2010–2011 identified 1·8 million Australians who delayed or avoided seeing their general practitioner because of cost. The situation is worse in rural and regional areas, with an almost doubling in rates compared to urban areas for Aboriginal and Torres Strait Islanders.

Reducing government spending on one aspect of the health system might have the potential for improving health outcomes through better allocation of resources. Any reduction in health-care costs could allow for the redistribution of funds to improve primary care and increase public health interventions, which currently account for $2·2 billion or 1·6% of costs. Whilst co-payments may reduce the cost of community medical services, we have no information on the economic implications of more patients delaying attendance due to cost, or the possible diversion of patients to Emergency Departments. In the absence of any clear data, it is not possible to make any firm conclusions that a co-payment would be good for the long-term health of Australians.

Health care is not like most other services or goods. There is a stark information asymmetry between the provider and consumer. Whilst the digital era has seen a wealth of useful health information flood the internet, it cannot do justice to the subjective experience of the patient. People see their doctor to be advised on what further health-care services they need to consume, if any. Delays to this presentation could result in serious future consequences. It is not up to the consumer to decide if their chest pain is simple indigestion, or the beginnings of heart disease.

Data from other countries, particularly low-income and middle-income countries, is scarce but seems to corroborate the above findings. A Cochrane review found that removing user fees increased the use of certain health-care services. Interestingly, however, there was some evidence of increased use of services with fees when they were combined with quality improvement, perhaps suggesting that the fees created a sense of value for consumers. The review’s conclusions are tempered by the poor quality of the evidence and suggest that more rigorous evidence is required. In high-income nations, there is a scarcity of data on the impact of user fees or co-payments on service use, but some high-quality evidence for the effect of co-payment on prescription drug use. Another RAND report states that doubling co-payments for drugs can reduce use of common medications by 25–45% and those who are chronically ill and receiving routine care cut their use by 8–23%. The lack of data undoubtedly links to the difficulty in measuring the true impact of health policies. Vaccines provide an immediate binary outcome; however, measuring the long-term impact of health-service underuse, particularly amongst those most vulnerable, is a different beast.

Australia has historically been a world leader in health, both in terms of its health-care system, as well as its scientific innovations. It is important that it finds effective methods to rationalise health spending and ensure cost-effectiveness. However, shortsighted napkin economics that seek to raise out-of-pocket costs are fundamentally inequitable and strike at the heart of conceptions of universal health care. Every effort should be made to incentivise attendance at the primary care level. The forthcoming election will reveal a great deal about the direction that Australian health care will take.
The Free Health Care Initiative in Sierra Leone: six years on, six lessons

Sophie Witter

Most countries want to move towards universal health coverage—people being able to access quality essential health care without financial barriers or adverse consequences. If you can’t provide the full range of services to all—which is the case for all low income countries—then one approach is to offer free care for high priority users. This is what was done in Sierra Leone in 2010, when the Free Health Care Initiative (FHCI) was launched, offering free care in public facilities for pregnant and lactating women and under-fives, in a context of one of the highest maternal mortality ratios in the world. Six years on, we report on how that policy was implemented, what it achieved, and what we can learn from it.

The FHCI in Sierra Leone stood out for taking a broad approach. Although the focus was on making mother and child health services free, the Government and its partners realised that in a weak, post-conflict health system this could only be done if all of the main health system elements were improved: availability of staff, structures for managing the sector, monitoring and evaluation, drugs and supplies, health facilities, and communication, all of these needed to work better if free care was to be meaningful. For fee removal, this is lesson number one: take a systemic approach.

Our review found that the FHCI brought funds and momentum through, crucially, concerted political will and development partners coming together behind the Government plan, which translated into some significant improvements in how the health system functioned. Was it enough? No—there were outstanding areas, like drug supply, which were never properly functional. However, it did bring real gains, for example in terms of the number of staff on payroll and upgrading of health facilities, with some innovative features like civil society monitors to provide accountability for FHCI implementation. Over time, though, momentum was lost and Ebola struck a major blow to coverage of essential services. Lesson number two: in countries like Sierra Leone, shocks are not ‘unexpected’, they are to be expected, and the system needs to be built with predictable shocks in mind.

The evidence does not allow us to make conclusions about maternal mortality, but we did find that the FHCI was associated with a sharp drop in under-five mortality.

Sophie Witter is an associate with Oxford Policy Management and led the OPM evaluation of the Free Health Care Initiative. She is also Professor of International Health Systems at Queen Margaret University, Edinburgh, UK, and part of the ReBUILD Research Consortium (research for stronger health systems post-conflict).
Annual estimates from the 2013 Demographic and Health Survey show a gradual decline in under-five mortality between 1997 and 2009, then a pronounced reduction from 187 deaths per 1000 livebirths in 2009 to 147 per 1000 live births in 2010. The declines continued, reaching 126 deaths per 1000 live births in 2012.

Modelled cost-effectiveness was also high—in the region of US$420–444 per life-year saved (for mothers and children). In addition, most mother and child health indicators showed a closing of gaps between richer and poorer households, and between well and less well performing regions over the period. We conclude that the FHCI contributed to these gains, alongside other investments which would probably have occurred even without this high level political initiative. Lesson number three (self-interested one): make life easier for evaluators—plan and collect data for your assessment framework in advance.

Looking ahead, it is important that efforts are made to monitor and improve the quality of care provided in public facilities. Quality of care not only drives whether people use services but also whether services work. Sometimes, however, the most important elements (like staff/client interactions) are the hardest to track and therefore the most ignored. This is lesson number four: focus on quality, quality, quality. In addition, there need to be continued efforts to overcome residual barriers, including lack of transport and sociocultural barriers, to ensure gains are fairly distributed.

On the health-system side, efforts to improve the economy and efficiency of key resources—especially staffing and drugs, the biggest items of expenditure—will be critical, as will addressing some of the harder-to-reach underlying institutional challenges, such as strengthening the Ministry of Health and Sanitation, the devolved health functions at district level, and improving public financial management. Institutions, like quality of care, are a critical but intangible element—hard to measure but you know it when they are weak! Lesson number five is this: keep your eye on the prize of building long-term functional institutions.

The sustainability of the FHCI—and the post-Ebola investments now flowing into Sierra Leone—is not assured without such a focus and increased public investment in health care in general. This requires the efforts of all to enhance performance and accountability in the sector. This is the final lesson: from health staff through to managers, non-governmental organisations, civil servants, and donors, there has to be clarity of functions, a supportive environment, and responsibility taken for performance (or lack of it). Much has been achieved—but how much more could have been, and could now be, with new windows of opportunity?

The evaluation was commissioned by the Ministry of Health and Sanitation in Sierra Leone and UK Aid. It was conducted by an OPM team led by Sophie Witter, Nouria Brikci, Tim Harris, Richard Williams, Sarah Keen, Ana Mujica, Alex Jones, Alex Murray-Zmijewski, Barbara Bale, Bailah Leigh and Ade Renner. We would like to thank all who contributed their insights and evidence.
Debating evidence and innovation in humanitarian assistance: a conference without borders

Sarah Venis

How strong is the evidence base underlying humanitarian medical assistance? How do you innovate safely to overcome the obstacles inherent in delivering care in conflict settings or to regions where no direct access to the population is possible, such as the besieged areas of Syria?

Médecins Sans Frontières (MSF) attempts to answer some of these questions in a round of conferences, the MSF Scientific Days, held in London, UK (May 20, medical research; May 21, innovation), south Asia (May 28), and southern Africa (June 9). These conferences, livestreamed (except southern Africa) and free to attend and access, were watched last year by over 5200 people in 115 countries. The events are intended to catalyse debate on the state of humanitarian medical aid, to challenge MSF and other organisations to improve the quality of their work, and to ensure that discussion of humanitarian research and innovation in new models of care and technology is accessible for anyone with an internet-enabled device.

Determining the impact of research and innovation is a growing area in MSF. From surveying 30 presenters from the 2015 MSF Scientific Days in London, we know that their research and projects: had an impact on MSF programs (63%); were widely disseminated (80% research, 71% innovation); were more likely to have an impact on MSF and external policies if they were research studies (47%) rather than innovation projects (17%); and were more likely to receive media coverage if they were innovation projects (60%) rather than research (13%).

And most importantly, we learnt that most innovation projects reached their aims or had fed into new projects.

This year, the MSF Scientific Days will feature a strong focus on the effects of the Syrian conflict, both directly and in the resultant refugee and migration crisis. The past year has seen the increasing frequency of deliberate targeting of hospitals by warring parties, a strategy that has become appallingly common in Syria. In his keynote speech in London on May 20, Zaher Sahloul, the past-President and current Head of the Syrian American Medical Society (SAMS) Global Response, will give his personal reflection on the Syrian crisis and address the challenges of providing health-care in such extreme circumstances. The ensuing session on migration and mental health will follow migrants from camps in Iraq and on their journey across Europe, ending at the notorious ‘jungle’ camp in Calais, France. On May 21, Kilian Kleinschmidt, Chairman of Switxboard and former head of Zaatari camp, Jordan, will look, from a different angle, at the need for innovation in...
traditional humanitarian responses to refugee and migrant populations, followed by a session on MSF attempts to innovate on data acquisition and management in the context of besieged populations in Syria.

One of the themes of the Innovation Day is how to use technology to help and not hinder medical care. This is the focus of our second Keynote speaker on the May 21, Zubin Damania, aka ZDoggMD, CEO of Turntable Health, a doctor who creates viral music videos to highlight issues in health-care and the perils of ill-thought out technology. The session following his talk examines MSF efforts to introduce technology that is beneficial for our populations, ranging from electronic algorithms to help tackle antibiotic overprescribing to using state of the art technology in assessing damage to the eye caused by malaria.

The MSF Scientific Days have been held since 2004, and in that time much has changed. For instance, there are now well established ethics frameworks for research in humanitarian settings, a welcome development. However, ethics was one of the many issues that became prominent in the west Africa Ebola outbreak last year, and on May 20 we will host a debate centring on whether the current system for ethics overview is fit for purpose for research in such emergencies. In addition, how we think about ethics in early innovation projects that don’t fit within standard medical research frameworks has been a notable gap. In response to a question raised at the Scientific Days last year, MSF has developed a (draft) Ethics Framework for Medical Humanitarian Innovation. The framework has been used to help guide innovation day presenters and will feature in the responses of a panel voting on pitches of innovative projects on the May 21.

We hope you will be able to join us either in person or online. Our online audience is a hugely important part of the day; please join them and share your thoughts on the conference using the Twitter hashtag #MSFSci. By doing so, you can help make this truly a conference without borders, a place to debate and further innovation and evidence in humanitarian medicine.

For the MSF Scientific Day agendas and to watch the conference free live online visit: http://www.msf.org.uk/msf-scientific-days
Does “global” have to mean abroad? Perspectives of surgical trainees worldwide

Issy Marks

In 2016, twenty-somethings want to travel the world. This wanderlust has led to an explosion in academic “global” programmes in many countries. For surgeons, global surgery is a fast growing and exciting new career choice. It allows flexibility and the opportunity to broaden surgical skills while contributing to a global effort to improve surgical care. In this initial phase of global surgery, we recommend caution and careful consideration in the growth of academic programmes, with quality and equity as essential guiding principles. An emphasis on skills building amongst local trainees will empower this growing discipline to best implement what a global approach can offer to vulnerable populations worldwide.

We would like to make two recommendations: that global should not be abroad, and that experiential learning is not enough.

As an international collaborative of students, global surgery is, for us, local, and it is as local in rural Kenya as it is in downtown Detroit or rural USA. As medical students, we know that passion for improving health exists in every community, and that facilitating and enabling grass roots programmes is extremely important. Furthermore, we cannot ignore the problems of our own communities. “Global” does not have to translate to ‘abroad’. Global is a state of mind; a way of looking at the bigger picture from social determinants to government and policy structures and how these factors may affect health outcomes. This is as relevant to surgical care in high-income countries as it is to any other place in the world. ‘Home country’ experiences may also aid poorer trainees to pursue this interest without having to invest in expensive foreign travel, and would go some way to remove the subtle selection bias in global surgery opportunities for high-income countries or high-income individuals.

To date, experiential learning in a foreign setting has been a central tenet of global surgery programmes in the USA. However, overreliance on field experience to provide quality training vastly underestimates the variability between personal experiences in the field and underemphasises how to approach elevating the quality of care in these settings (ie, the importance of engaging stakeholders or considering systems-level changes that would improve or expand care). To send trainees abroad without proper training is inappropriate and unfair to both trainees and patients. Trainees attempting to improve their skills may
detract from the experiences of local doctors, further burdening hospitals where resources are limited. Although we acknowledge that field experience remains an important teacher we argue that whilst this can be part of a global surgery programme, it cannot be all of it. Just as medical school has preclinical and clinical components, we need both experiential and taught components in our global surgery programmes. Maximal impact may be achieved by ensuring travel is within a long-term partnership between institutions, lessening the amount of ‘reinventing the wheel’ on trips to a wide range of locations. Standardised predeparture training in personal safety, travel safety, cultural awareness, language competencies, and ethics are critical for travelling trainees, as well as debriefing upon return. The outcomes we monitor need to reflect the quality of the experience for all parties involved, and not the experience of the high-income country trainee.

If done correctly, global surgery gives us the opportunity to critically re-examine the relationship of surgeon and patient, integrating the skills, supplies, and systems of the world into our practice. Wherever there exists inequality in access and quality of surgical care, there also exists a mandate for global surgery research, education, and advocacy. As surgeons of the future, we are passionately committed to creating an equitable system of health development, in which high income countries accept local leadership in projects abroad, and reflect on the problems within their own communities.
Afghanistan’s tobacco problem

Mohammad Razai

Afghanistan is home to one of the world’s highest death rates due to non-communicable diseases (NCDs), according to the World Health Organization. The leading attributable risk factor for NCDs—chronic respiratory diseases, cancer, diabetes and cardiovascular diseases—is tobacco use.

A staggering 80% of the world’s tobacco consumption now happens in low- and middle-income countries and it continues to increase. A recent survey in Kabul estimated that 35.2% of men 15 years or older smoked and that 85.4% had been at some time in their lives exposed to second-hand cigarette smoke. The Global Youth Tobacco Survey (2010) found 90% of those who smoked started as teens, becoming smokers as early as 13 years old. Across the population, 82% of men and 17% of women have tried tobacco. Tobacco is big business in most developing countries, and in Afghanistan it is booming: the country imports 44 tons of cigarettes a day, and the import value is estimated at over US$2 billion. It is no wonder, considering the wide availability of cigarettes and that a packet costs just US$0.30 in Afghanistan, compared to the average cost of $5–$6 per pack in the USA. The numbers are as sobering as they are alarming but they may prove to be the tip of the iceberg. Manufactured cigarette smoking is the dominant form of smoking in Afghanistan, but it is not the only method. Traditional ways of tobacco use in Afghanistan include naswar (moist snuff) and one of the most potent forms of tobacco chelam (hookah), both of which remain popular. A traditional hour of smoking hookah is equivalent to 100 cigarettes.

Unfortunately, at the age smoking begins, education about its adverse health effects, and even which types of tobacco use represent the greatest hazards to health, are non-existent in Afghanistan. While the twentieth century brought a boom to the tobacco industry in the West, the millennium brought with it lawsuits and penalties in the billions of US dollars, with one law suit reaching $10 billion against one company alone for deceptive tobacco advertising. Part of the restitution included...
funding for anti-smoking campaigns, so companies turned their massive advertising dollars instead towards developing nations where there were no such advertising campaigns to warn the public, particularly the youth. Should the tobacco industry’s insidious and highly developed multi-billion marketing strategies continue to go unchecked, young Afghan men and women, unlike their western counterparts, would face “a perfect storm” of poverty and potentially irreversible health consequences before reaching adulthood.

These grim statistics persuaded the Afghan government to sign and ratify WHO’s Framework Convention on Tobacco Control (FCTC). The country’s parliament has also passed legislations including ban on smoking in public places, increasing tariff on tobacco imports and a ban on tobacco advertising. Although anti-smoking laws are significant steps in the right direction in terms of public health policy, they have yet to be enforced effectively. The ongoing conflict and political instability, along with corruption have made national strategies against all forms of addiction, including tobacco use, nearly ineffectual. Two years have passed, yet smoking in public buildings is still a common sight. An additional tariff on imports, even if implemented, could be easily circumvented by existing drug smuggling routes.

It is easy to despair. But there is still time to act. A concerted effort to strengthen institutions that enforce statutory regulations, particularly marketing restrictions, is needed. Introducing plain, standardised, cigarette packaging with only graphic health-warning images will inform consumers of health risks and reduce its appeal. Conscientious television and film industry professionals can be used to debunk the hype that big tobacco advertising dollars helped create, and refuse such advertising sponsorship. Anti-tobacco awareness campaigns should be targeted to reach out to those most at risk: young people. The easiest place to publicly educate about the harmful effects of smoking is at schools. Nonprofit and religious organisations also have a strong voice to influence their communities’ social and personal behaviours, and this influence can also be harnessed to take a stand against smoking.
Getting to universal health coverage: the importance of deep politics

Edward Laws

Since ratification of Sustainable Development Goal 3.8, momentum has been building for a big global push towards universal health coverage. Whilst this widespread support for access to health care for all is encouraging, it is important to be aware that reforming how health care is financed poses not only a technical challenge, but also political one.

The World Health Organization implicitly recognises these challenges, but what is less clear is what universal health coverage (UHC) actually means in practice for those working to achieve health reform in low- and middle-income countries.

With this in mind, research published by the Overseas Development Institute looks at six case studies to examine whether the underlying power relationships between elites in a country—or its ‘political settlement’—has any bearing on how UHC is achieved. We found some cautious support for the hypothesis that progress is likely to be optimised when advocates for UHC choose a strategy that ‘fits’ the political settlement.

Our case studies suggest that countries with a politically dominant elite (in the sense of having a very firm grasp on power) tend to make better progress towards UHC than countries where there is a greater degree of political competition.

Our research indicated that Vietnam, Kyrgyzstan and the Democratic Republic of Congo have made progress towards achieving UHC

Firstly, Vietnam has made strong progress on service coverage and quite strong progress on reducing out-of-pocket expenditures, especially since 2000, thanks to strong national ownership and sustained political commitment and leadership.

Similarly, Kyrgyzstan is a strong performer for its level of income, thanks to consistent presidential commitment, strong leadership in the health sector, and supportive multi-stakeholder partnerships.

The Democratic Republic of Congo, while still performing poorly on most health outcomes, has actually made rapid progress since 2003 in service coverage and reducing out-of-pocket expenditure, thanks mainly to a large injection of donor funds and some innovative development partner and non-state initiatives.

Since ratification of Sustainable Development Goal 3.8, momentum has been building for a big global push towards universal health coverage. Whilst this widespread support for access to health care for all is encouraging, it is important to be aware that reforming how health care is financed poses not only a technical challenge, but also political one.

The World Health Organization implicitly recognises these challenges, but what is less clear is what universal health coverage (UHC) actually means in practice for those working to achieve health reform in low- and middle-income countries.

With this in mind, research published by the Overseas Development Institute looks at six case studies to examine whether the underlying power relationships between elites in a country—or its ‘political settlement’—has any bearing on how UHC is achieved. We found some cautious support for the hypothesis that progress is likely to be optimised when advocates for UHC choose a strategy that ‘fits’ the political settlement.

Our case studies suggest that countries with a politically dominant elite (in the sense of having a very firm grasp on power) tend to make better progress towards UHC than countries where there is a greater degree of political competition.

Our research indicated that Vietnam, Kyrgyzstan and the Democratic Republic of Congo have made progress towards achieving UHC

Firstly, Vietnam has made strong progress on service coverage and quite strong progress on reducing out-of-pocket expenditures, especially since 2000, thanks to strong national ownership and sustained political commitment and leadership.

Similarly, Kyrgyzstan is a strong performer for its level of income, thanks to consistent presidential commitment, strong leadership in the health sector, and supportive multi-stakeholder partnerships.

The Democratic Republic of Congo, while still performing poorly on most health outcomes, has actually made rapid progress since 2003 in service coverage and reducing out-of-pocket expenditure, thanks mainly to a large injection of donor funds and some innovative development partner and non-state initiatives.
In contrast, Myanmar, Bangladesh and Indonesia present a different picture

Myanmar presents a more mixed case. Having neglected health provision and financing for the majority of its independent existence, the country has, since transitioning to a nominally civilian government, committed to UHC and made rapid progress on service coverage indicators, with signs that out-of-pocket expenditures are also coming down.

Bangladesh has a highly competitive political environment. Despite achieving quite good health outcomes for its income level, it performs poorly on certain service coverage indicators, and on out-of-pocket expenditures, thanks partly to the inability of government to follow through on commitments in a health sector riven with patronage and interest group politics.

Likewise, Indonesia, for its income level, is a relatively poor performer, having been slow to pass UHC legislation and with progress varying considerably according to the nature of ‘local’, decentralised political settlements.

Progress can happen in unlikely circumstances, as we found with the Democratic Republic of Congo. Once considered a model for the African continent, its health system suffered near total collapse during the protracted civil war between 1995 and 2001. This deterioration has been compounded by years of government mismanagement and neglect. In spite of this, the Democratic Republic of Congo has made the most progress of all the countries we looked at—but largely as a result of increased donor assistance. This suggests it may be easier to make rapid progress, at least at lower levels of UHC, in a country with a strong ruling elite that has surrendered its health sector to donors, than it is in a more competitive political context.

Our research points to some broad conclusions about the politics of UHC:

- The nature of the political settlement in a country is likely to affect the desire and ability of governments to commit to UHC, and, perhaps more importantly, to implement it.
- UHC advocates need to start with a detailed analysis of a country’s underlying politics, at both the national and more local levels, and understand how these arrangements might determine more and less feasible pathways to reform.
- Armed with this understanding, advocates for UHC should structure their efforts accordingly. For example, in countries like the Democratic Republic of Congo, which has a dominant, highly predatory ruling elite, it may be sensible to look for non-state and market solutions to provide the essentials of a public health bureaucracy.
- In more competitive political environments like Bangladesh and Indonesia, policy design and adoption can be frustrated by vigorous interest-group politics. In this context, UHC champions may need to focus more on connecting the more effective parts of the state and policy with the more effective elements of the market and civil society.
- In countries like Vietnam and Kyrgyzstan, where the dominant ruling elite is prepared to take the lead in designing and implement UHC policies, the best-fit strategy is likely to involve providing technical support and funding for a predominantly state-centred pathway.

What is clear is that, as a growing number of low- and middle-income countries set out to make quality health care universally available, UHC advocates cannot afford to ignore politics when designing their programmes.

This was a joint post, with Tim Kelsall and Tom Hart from the Overseas Development Institute.
Thousands of Ebola survivors are still in need of support

Elijah Ongeri

The news that Pauline Cafferkey continues to suffer after-effects from her Ebola infection in 2014 again raises the issue of the seriousness of Ebola and the long-term effects on those who have been infected. The vast majority of survivors are in the three most affected countries, Sierra Leone, Guinea and Liberia.

In Sierra Leone, there are thousands of men, women and children who live every day with the effects and stigma of their status as survivors of Ebola. Many of these individuals were still recovering from the decade long civil war where 70,000 lives were lost and 2.6 million people were displaced. Added to this, many were living in poverty, on the margins of society prior to their illness, and they have become all the more vulnerable.

There is much we still do not know about the long term effects of Ebola from a medical standpoint, but from what we have seen through interaction with the Survivor Network in Sierra Leone, three highly interlinked lessons to be learnt for future outbreaks.

Firstly, survivors need ongoing specialised health care. At present, the only real health care available is in major cities, with orphaned children and those who are based in rural locations struggling to pay for the transport to the facility to access services. Some of the known health concerns facing survivors include cataracts and joint pain, however, there has been little movement in creating guidelines to ensure the higher level of care needed (including surgery) to minimise these effects.

Secondly, stigma continues long after the epidemic ends. People will refuse to trade with survivors, or to share a meal. It is unknown how long male survivors may carry the virus in their semen, limiting their return to a full sexual life. Most health-care workers have not been provided with training on the health needs of survivors, and they may refuse to treat these patients out of concern that they are still infectious. This ongoing stigma reminds survivors daily of the traumatising experience of their Ebola infection.

Thirdly, livelihood opportunities for survivors are needed to be able to reintegrate into society. During the epidemic, there was significant positive attention paid to survivors, and many livelihood opportunities created for them in hospitals and isolation centres. Now that the epidemic has passed, opportunities have dried up, and the long term health effects and stigma reduce the options survivors have to earn a living. Cataracts and joint pain severely limit the ability of people to perform manual labour, including farming, and trading is made difficult due to stigma.

While new information and knowledge about the virus is coming out on a regular basis, this knowledge is not circulated to those who truly need it, the citizens of the most
affected countries. To reduce the long term effects on survivors, this new learning must be distributed widely, through community engagement methods proven in the Ebola response, to reach those in need. There is no risk of infection when sharing plates with, purchasing goods from, or providing non-invasive health care to survivors, and this information must be communicated and promoted.

The legacy of Ebola will be felt for many years to come, not only in West Africa, but across the world, as the global health community faces challenges in dealing with infectious diseases that cross borders. These challenges do not only concern a brief outbreak, but also our understanding, our ability and our will to ensure we are prepared to deal with these outbreaks and their aftermath in the future.

GOAL will host an Ebola Lesson Learning Conference on April 20 and 21. The conference will include key personnel from the emergency response who will share and document lessons learned on emerging and promising practices to contribute to the development of new service standards and protocols for infectious disease outbreaks. To find out more go to goalglobal.org

This blog was a joint post with Mohammad Eisa and Gillian McKay from GOAL Global.
Life-saving instruction for emergencies (LIFE): saving the lives of newborns and mothers through serious games

Mike English

Medical emergencies are major causes of death globally, but any one health-care worker, especially in primary care or community settings, will rarely provide an emergency response. At present, frequent face-to-face training for health-care workers is prohibitively expensive and difficult to access, meaning that many in remote settings are not using up to date practices. An online simulation called Life-saving Instruction For Emergencies (LIFE) may provide some of the solutions to combat these issues.

About LIFE
In Africa, 470 000 babies die each year on the day they are born, and this figure increases to 1 million deaths within the first 28 days, the neonatal period. The World Health Organization (WHO) estimates that over two-thirds of these newborn deaths could be avoided through existing maternal and child healthcare programmes, if they were taught and implemented effectively. We think we can help—LIFE is a serious game that will train health-care workers in Africa to act correctly in emergency scenarios and save lives.

We developed the ETAT+ course in 2006 specifically for implementing in facility-based care in east Africa, to ensure sick newborns and children from even the poorest families receive high quality, effective care wherever they seek medical attention. ETAT+ is a comprehensive and proven intervention that has trained over 5000 health-care workers and 3000 students in Kenya, Uganda, Rwanda, Tanzania, Zambia, Zimbabwe, Malawi, and most recently Myanmar. It has benefited hundreds of thousands of children in the 10 years since the programme was started.

However, this isn’t enough.

ETAT+ gained the important support of the UK’s Royal College of Paediatrics and Child Health and several east African paediatric associations and universities, yet only a small fraction of health-care workers have been trained.

Our Oxford-Kenyan team is now building ETAT+ into a digital platform based on the concept of serious gaming. LIFE will deliver interactive, instructional emergency care training using a 3D virtual hospital via mobile phones. We are also excited to announce a partnership with the technology brand HTC, who will help us to develop a low-cost virtual reality scenario using their new HTC Vive headsets. This will enhance user immersion with the possibility of making high quality simulation training available at low cost within facilities and training centres.

We are raising £100,000 through crowdfunding to develop our first scenario, focusing on neonatal resuscitation for low-resource settings, and conduct extensive user testing in Oxford and Kenya.

We will develop and test the LIFE platform in trials in Oxford and Kenya. Health-care workers will benefit from an app that can be updated efficiently and can capture data on trainees. Development will include approaches to incentivising participation and learning, and exploration of sustainable funding models. If successful, the concept can be applied to multiple neonatal, child, maternal, and adult emergencies.

So how will it work?
The serious game will enable health-care workers to follow the highly structured care pathways required when

![LIFE saving lives through serious games](https://www.themove.com)
providing emergency care. Key pieces of information are sought at each step that determine the correct actions to perform. Executing cue-response sequences perfectly, rapidly, and automatically demonstrates mastery and supports effective care. This can be achieved on a greater scale and lower cost than in face-to-face training. Systematic reviews show that technology-enhanced training, including games, can be associated with large effects on knowledge, skills, and behaviour. Maximal learning is associated with the option to play as many times as the trainee wishes.

Based on our existing successful training experience, and with early development grants, we have built a prototype mobile game to teach neonatal resuscitation appropriate to Africa on a smartphone. We received very positive responses from small focus groups in Oxford and Kenya.

Supporting the idea that the LIFE platform could play an important part in the future of training is the growth in the popularity of smartphones. Sales of smartphones capable of running 3D games topped 3·5 million (in a population of 40 million) in 2014 in Kenya, and are growing rapidly. Similar changes are occurring elsewhere in Africa, supporting the potential of 3D training approaches delivered through smartphones and low-cost VR headsets. Taking advantage of this technology can help us deliver essential knowledge at massive scale. This could help support universal coverage with correctly delivered essential interventions and contribute to achieving the sustainable development goals for neonatal, child and maternal mortality.

“...”

—Dr Wilson Were, World Health Organisation’s Department of Maternal, Newborn, Child and Adolescent Health

Ultimately, providing such training using these technologies would support the development of a data centre that can be used to (i) improve games, (ii) advise the playing community of updates to recommendations when new evidence becomes available (changing game content), (iii) recommend regular retraining to maintain knowledge, (iv) alert players to new courses to extend their range of skills, (v) deliver and archive certification, (vi) track trainees skills and locations, and (vii) create a social network supporting better practice.

Our crowdfunding campaign is live through the University of Oxford’s OxReach crowdfunding platform. Please see our twitter pages for updates on our campaign.

To help launch the LIFE platform donations have been given by Medicines Sans Frontiere (UK) and HTC that recently launched its virtual reality platform HTC Vive.
Fighting the trade in falsified medical products: building a consensus on the role for the private sector

Laurien Rook and Danny Edwards

Every day patients across the world receive falsified medicines or other falsified medical products. This is a serious and ongoing risk to global health, which results in treatment failure, impairment, and death.

These falsified products (referred to in the following as falsified medicines) are deliberately and fraudulently mislabelled in order to imitate the genuine article, and can contain either little or no active ingredients or toxins. Falsification affects both patented and generic products, and occurs across the globe. Recent examples include the identification of falsified emergency contraceptives in Uganda, of falsified diazepam in Central Africa, and of falsified meningitis vaccines in Niger. The scale of harm to human health is difficult to accurately quantify; however, the figures that are available are of significant concern. It was recently estimated that 4% of all deaths under 5 years in 39 sub-Saharan African countries were associated with low quality anti-malarials. Other harms are less tangible: for example falsified vaccines may undermine confidence in much-needed immunisation programmes.

Stopping trade in these dangerous products is an essential part of achieving global health security and reaching the Sustainable Development Goals. This task is not straightforward, and involves a myriad of key players with a complex intersection of roles, responsibilities, and interests. Customs officials, regulators, multilateral agencies, procurement agencies, pharmacists, pharmaceutical companies, and actors right across the supply chain must be involved. While all of these parties want to achieve reliable access to safe and effective medicines, their interests and thus their approaches to achieving these ends may not always align. Policy development can be fraught with difficulties, involving—for example—conflicting concerns around intellectual property infringement and the legitimate trade in generic medicine. This can result in difficulty defining the appropriate role and responsibility of each party.

As the innovators and manufacturers of medicines and medical products, pharmaceutical companies evidently have a key role to play in this fight. These companies sit at the intersection of several competing priorities: the desire to protect commercial and reputational interests—for example reputational damage may result in a loss of sales, the desire to investigate effectively the origin of falsified medicines—for example through internal investigational departments that aim to trace producers of these products, and an overarching desire and responsibility to public health. This last priority demands rapid action and reporting to relevant authorities to ensure that health-care providers are informed and risk to patients minimised. As a
result of these competing priorities, reaching a consensus on the most appropriate role of companies in this area can be difficult to define.

Companies take various approaches to addressing the problem of falsified medicines. These include informing the public, for example, through campaigns such as Fight the Fakes; through making products more difficult to copy, for example—through overt packaging techniques such as holograms and colour-shift inks or through covert methods such as invisible printing, digital watermarks, and the use of radio-frequency identification devices (RFID) such as those used by Pfizer and GlaxoSmithKline on the packaging of Viagra and Trizivir. Companies may train relevant government staff how to distinguish between genuine and falsified products, an example being Novo Nordisk’s work with Bangladesh’s National Drug Control Laboratory, noted in the 2014 Access to Medicine Index. Companies may also choose to improve product traceability through serialisation and patient authentication technologies. Alongside these activities, companies also have a clear responsibility to report the discovery of suspected falsified medicines to relevant authorities to minimise the risk to public health. In this last area however, there is a lack of existing evidence of the spectrum of real-world company reporting behaviour, and, in particular, a lack of a unified approach regarding how quickly, and to whom companies should report.

At the Access to Medicine Foundation, we find that building a consensus and communicating clear expectations is essential in helping drive performance in the pharmaceutical sector. Once an external benchmark is established, it is far simpler to hold companies to account in order to encourage companies to develop clearer policies for action, and, importantly, far easier to build and to share evidence of effective strategies in the face of this threat to public health. As a first benchmark of company performance in the area of falsified medicines, it became clear that the Foundation would most usefully try to identify an agreed appropriate reporting action for companies to take upon the discovery of suspected falsified medicines. Our current understanding is that while some companies may elect to report to either national regulatory authorities or to the World Health Organization’s Rapid Alert system, others may prioritise internal investigation prior to reporting to authorities, while others still are members of the Pharmaceutical Security Institute, a membership-based organisation comprised of 30 pharmaceutical manufacturers, and elect to report there. However, some have expressed concern about the level of transparency of the information held by this organisation, and if it is the most effective body to report to if the primary ambition is to quickly limit harm to public health.

Through the latter half of 2015, we engaged with a range of relevant experts, from both industry and other organisations, aiming at identifying at least a ground-level consensus around the role and responsibility of the pharmaceutical industry in this area. A repeatedly, although not universally-held, view was that companies should report incidences of suspected falsification as rapidly as possible to appropriate authorities (appropriate meaning national regulatory authorities and the World Health Organization) in order to minimise harmful effects to human health. A baseline agreement was identified: that pharmaceutical companies should be able to demonstrate that they had policies in place which describe how employees should act upon the discovery of suspected falsified medicines. A first proposal for what an appropriate policy involved was to recommend reporting to relevant national authorities and the WHO Rapid Alert programme within at least 7 days.

The 2016 Access to Medicine Index will thus request and start to map companies’ existing policies for reporting suspect falsified medicines. The indicator used to frame this measurement has been published in the Methodology for the 2016 Access to Medicine Index. In doing so, we hope to be able to provide a first systematic insight into the range of policies in place at the world’s largest pharmaceutical companies, determining how their employees should respond to the discovery of suspected falsified medicines, and building a clear benchmark of best practice in this area. Through these measures, we can provide both a mechanism of corporate accountability in a neglected area, while at the same time supporting companies in building policies and practices which safeguard human health and align with the expectations of the global health community. In this way, we believe we can play a useful role in curbing the damaging global trade in falsified medicines.
The vaccinated dog is the soldier in the fight against rabies

Monique Eloit

Rabies still causes the death of tens of thousands of people every year. Knowing that dog bites are responsible for more than 95% of all human rabies cases, the eradication of canine rabies is the only way to end the disease’s animal-human transmission cycle. To tackle this burden, mass dog vaccination in at-risk areas is consequently one of the three key actions highlighted by the World Organisation for animal health (OIE) and the World Health Organization (WHO) in the Global framework to eliminate rabies worldwide in December 2015.

Dog-mediated human rabies still kills tens of thousands of people every year. Freedom from this plague is a global public good and is feasible with currently available tools.

The new global framework, which resulted from fruitful discussions engaged with by nearly 300 participants—including experts, donors, as well as veterinary and public health officials—during the WHO/OIE Conference on rabies last December, identifies actions needed to achieve effective rabies elimination and promises to be a milestone in its success.

The report of this Global conference organised by OIE and WHO in collaboration with the Food and Agriculture Organization of the United Nations (FAO) and with the support of the Global Alliance for Rabies Control (GARC), has been published this week. This document concludes the conference report and provides a coordinated approach and vision for the global elimination of the disease.

This framework is intended to harmonise actions worldwide and provide adaptable, achievable guidance for countries and regions to reach zero human deaths from dog-mediated rabies by 2030 in participating countries.

Built on five pillars, the action plan described combines socio-cultural, technical, organisational, political, and resource-oriented aspects. It notably calls for three key actions:

- making human vaccines and antibodies affordable
- ensuring people who get bitten receive prompt treatment
- implementing mass dog vaccinations in at-risk areas

Sustainable vaccination of 70% of the at-risk dog population is indeed recognised as key to eliminate the disease in endemic areas.

Combined with responsible pet ownership, stray dog population management and availability of human post-exposure treatment, mass dog vaccination quickly leads to the elimination of human deaths from rabies. This strategy has proven to be successful in Mexico, for instance, where the number of rabid dogs has nearly dropped to zero after mass dog-vaccination campaigns, with a parallel decrease in human cases.

To support these campaigns, ensuring sufficient supply of quality-assured canine rabies vaccines is essential. This is the reason why the OIE has created a model of dog

For more information on the fight against rabies see www.oie.int/rabies

CANINE RABIES VACCINES TO SAVE HUMAN LIVES

Rabies kills nearly 70,000 persons per year with more than 95% of cases originating from infected dog bites.

By providing high-quality dog vaccines, the OIE Vaccine Bank helps countries implement vaccination campaigns and eliminate canine-mediated human rabies.

OIE World Fund
- Multi-donor approach
- Regional outlaying

Donors

Vaccine suppliers
- High-quality vaccines
  - Complying with OIE international standards
  - Available upon request

OIE Member Countries

Rabies Vaccine Bank

Requests for vaccines

International call for tender
Multi-supplier approach

Vaccine delivery
- Simply dispatch
- Flexible quantities

Mass dog vaccination campaigns in at-risk areas

Human vaccines and post-exposure treatments

Stray dog population management

Awareness raising

SUCCESSFUL NATIONAL STRATEGY TO ELIMINATE DOG-MEDIATED RABIES

www.oie.int/rabies
vaccine bank since 2012, which guarantees the availability of high-quality vaccines complying with its intergovernmental standards as well as the rapid delivery of quantities adapted to field needs. This is done at an adequate price after a public international call for tender was answered by vaccine manufacturers. This model has already supported the success of several dog vaccination campaigns in several OIE member countries in Africa and in Asia.

The international procurement of vaccines financed by donors allows the beneficiary countries to concentrate their efforts and limited resources on implementing other necessary actions, such as vaccination campaigns against rabies, management of stray dog populations and awareness raising among diverse populations.

As of today, more than 15 million doses of canine rabies vaccines have been ordered or delivered in many countries through the OIE Rabies Vaccine Bank. In addition, in the framework of the Tripartite Alliance (WHO, OIE, FAO) on rabies control, the World Health Organization (WHO) has decided to place its procurement orders for dog vaccines through the OIE Rabies Vaccine Bank.

There must be no more deaths from rabies. Vaccinating dogs means saving human lives. The time for action is now.

Dr Monique Eloit, OIE Director General defines the example of the rabies vaccination campaigns led in the Philippines as a One Health success story. See [https://youtu.be/3PrNzipjcVs](https://youtu.be/3PrNzipjcVs)

Rabies: The Philippines respond—A new video documentary on ongoing efforts in the Philippines to eliminate rabies in dogs has been produced by the OIE SRR-SEA. See [https://youtu.be/BStN23Mxzb8](https://youtu.be/BStN23Mxzb8)
We can end AIDS among people who inject drugs: the case for a Harm Reduction Decade

Catherine Cook

The world has come a long way in providing harm reduction services to people who use drugs. But this journey has been a slow one, and there is much further still to go. If there is to be any hope of putting a stop to the countless avoidable deaths and health-related harms of people who use drugs every year by overdose, HIV/AIDS, and viral hepatitis, there needs to be a significant scale-up of harm reduction provision the world over.

The data Harm Reduction International (HRI) has collected over the last decade for their Global State of Harm Reduction shows that there is now some level of harm reduction programming in over half of the 158 countries with documented injecting drug use. 91 countries provide for harm reduction in national policy documents, 90 have one or more needle and syringe programme, and 80 provide opioid substitution therapy. Where it is in operation, harm reduction has had a dramatic impact in improving the health and wellbeing of people who use drugs, and on protecting their human rights. Importantly, at the last count, only US$160 million was spent on harm reduction in low- and middle-income countries, just 7% of estimated need, and much of this funding is now precarious or under direct threat.

While this appears to paint a dismal picture, offering little hope to those of us working to end HIV/AIDS and see a transformation of global drug policy, the amount of funding required to achieve this is hardly enormous. This is particularly clear when considered as a proportion of the $100 billion spent annually in the name of the ‘war on drugs’. HRI’s newly released report, The Case for a Harm Reduction Decade: Progress, Potential and Paradigm Shifts, models the potential impact of different levels of future harm reduction spending based on past Global State data. It shows that if as little as 7.5% of the global drug control funding were to be redirected to scaling-up harm reduction by 2020, there would be 94% fewer new HIV infections among people who inject drugs by 2030, and 93% fewer HIV-related deaths.

These are staggering figures: a tiny proportion of existing drug control funding redirected to achieve an almost total elimination of HIV/AIDS within this key population within the next 14 years.

With just weeks to go before the UN General Assembly Special Session on drugs (UNGASS), this is a rallying call for the growing numbers of civil society organisations and people who use drugs who are advocating for a political and financial commitment to health- and human rights-based responses to drug use. HRI’s ‘10 by 20’ campaign has been calling on governments to commit 10% of their drug control spend to harm reduction by 2020, and we now know just what a huge impact this would have by 2030.

Since the 1998 UNGASS, which marked the start of the misguided—and ultimately doomed—UN Decade for a world without drugs, harm reduction has proved itself
to be an approach to drugs that saves lives, saves money, and helps respect, protect and fulfil the human rights of people who use drugs. If commitments can be made to the tiny shift in funding suggested by today's report, this year's UNGASS could mark the start of a Harm Reduction Decade, and by 2030 we could have seen HIV/AIDS all but wiped out among people who inject drugs.

The data modelling for *The Case for a Harm Reduction Decade: Progress, Potential and Paradigm Shifts* was undertaken by David Wilson, Professor at the Burnet Institute, an Australian, unaligned, not-for-profit, independent organisation that links medical research with public health action, recognising that solutions to many of the major global health problems require comprehensive and innovative responses. These include novel discoveries, such as the development of new vaccines and diagnostic tests, and the better use of existing best-practice health interventions. For more information visit www.burnet.edu.au
Undoing the undoing of Canada as global health citizen

Chris Simms

When Canada’s new Prime Minister, Justin Trudeau addressed the World Economic Forum (WEF) at Davos last month, restoring trust in Canada as a global citizen was at the top of his agenda. The previous government’s 10-year record of “multilateralism as a weak-nation policy” and the just-released WEF 2016 Global Risk Report helped provide the encouragement needed to change the policies that were the previous administration’s downfall.

Former conservative Prime Minister Stephen Harper (2006–2015) made resource development the centerpiece of his administration without fully taking into account its environmental impact, aboriginal rights, scientific evidence or the opinion of the global community. While Canada’s reputation as global citizen declined internationally, democratic values and social trust were threatened domestically by a clamp-down on legitimate and peaceful protest, access to government information, the muzzling of government scientists and intimidation of civil society groups—most notably by agencies meant to enforce the law.

As to the troubling WEB Report (reflecting the opinion of more than 750 experts), it warned that global threats (such as catastrophic climate events, large-scale involuntary migration and global health insecurity) are now more interconnected, more likely, more impactful, and more imminent than ever before. For the global community, creating trust within and between nations is seen by WEF as the main challenge and solution to global risks.

Mr Trudeau seems committed to building trust. He promised open and accountable government, close cooperation with the global community, re-engagement with the United Nations and multilateral institutions and, a policy of inclusivity and diversity. Having already chosen for his cabinet of 30 ministers, 15 women and 2 aboriginals, he was inclined to cite “diversity” 12 times in his Davos speech—describing it as a source of strength and resilience for Canada.

Detailed and transparent (online) mandate letters to each cabinet member on what is to be done and how have led to a cascade of policy changes directed at reversing the Harper legacy—many coming into immediate effect, most notably in the area of public health. For example, to restore the flow of information expected of a pluralistic, democratic society, Canada’s 6000 federal scientists have been de-muzzled allowing them to share their findings on the health and safety of Canadians as they see fit; the long-form census, an important source of data on vulnerable groups has been reinstated. As to information from civil society to government—the Canadian Revenue Agency was ordered to end its harassment of environmental NGOs critical of the oil sands and the Minister of Justice has been instructed to amend controversial Bill 51 that portrays environmentalists and First Nations activists as terrorists.

A fundamental resetting of relations with First Nations, the indigenous Canadian population, has begun under...
Mr Trudeau. Action on long-ignored inequalities is promised including robust social sector investment, full implementation of the 94 Truth and Reconciliation Commission recommendations (meant to deal with the on-going suffering associated with the Indian Residential System); a national inquiry into “murdered and missing aboriginal women and girls”; and the immediate end of long-term solitary confinement in federal prisons (that affects mainly aboriginals). This shift in tone has perhaps emboldened other agencies: the Human Rights Commissioner has now ruled that the federal government indeed discriminates against aboriginal women and children in providing health care and; the Commissioner of the Royal Canadian Mounted Police (RCMP), an institution that First Nations deeply distrust, has acknowledged on national television that racism exits within its ranks and promised to rectify it.

An unshackled Department of Foreign Affairs has swiftly reversed a policy known as “sovereign self-interest” that saw trade and commerce suborn human rights, international development and humanitarian assistance. For example, 50,000 Syrian refugees have been welcomed to Canada (25,000 by the end of February 2016); aid for maternal, newborn and child health has been refocused to include reproductive rights. Commitments made at the Paris Climate Talks have led to actions at home: strengthening of the oil and gas to include upstream greenhouse emissions. Perhaps emboldened as well, the Commissioner of the Environment reported that audit of the National Energy Board (NEB) shows it failed to track compliance by pipeline industry and that nearly half requested files were missing or outdated.

Although these policies suggest good governance begets good governance, they are drawn from a diminishing supply of “low-hanging fruit” and subject to the criticism of being reactive, linked more to campaign promises than an overall plan; they represent practically and conceptually a fraction of what is needed to confront an increasingly complex and dangerous world. Perhaps acknowledging this, superforecasting expertise has been introduced into Prime Minister’s Office to help guide decision-making. Yet what is more obviously needed (and more transparent) is a global health strategy to help set priorities, guide choices, and create efficiency and cooperation; the very process of developing such a framework would help identify local and global partners and how they measure success. In contrast to recent years where such a strategy would have exposed abject failure, it would highlight and enhance efforts to confront global risks through trust and partnerships.
FEBRUARY 19, 2016 • REPRODUCTIVE, MATERNAL, NEONATAL AND CHILD HEALTH • INFECTIOUS DISEASES • RESPIRATORY DISEASES

Fragile states as grounds for innovation: targeted investments for ending childhood pneumonia

Meghan Gilfillan

Pneumonia kills more children under five each year than any other infectious disease—causing over 900 000 deaths each year. This loss of life is preventable today, through prompt diagnosis and treatment, expanded vaccination, and reducing risks, such as malnutrition, that make pneumonia so lethal to children. Increasingly, accelerating progress against childhood pneumonia is being viewed as a lynchpin to reaching the 2030 target on preventable child mortality. And with nearly 60% of child pneumonia deaths occurring in countries deemed as “fragile states”, the time is now to rejuvenate funding and programmes targeting these geographies.

Pneumonia has not received much policy attention—or investment. A report from the Institute for Health Metrics and Evaluation (IHME) revealed that, in 2011, more than US$30 billion was spent on development assistance for health, but only 2% targeted pneumonia.

As shown by a 2015 UNICEF report and in figure 1, other major causes of child mortality received much more global health funding over time—and perhaps not surprisingly, have experienced faster rates of decline.

Of the 33 countries with 10 000 or more live births in 2015 identified as needing faster improvement for child-hood survival (figure 2), 22 are OECD-classified fragile states. This classification reflects a heightened risk for several challenges, including higher rates of violence and a lowered response capacity to disasters or shocks. As a result, these countries likely need tailored investments to most effectively reduce their pneumonia burdens and overall child mortality. Such efforts include private sector partnerships and integrating pneumonia care with broader health service delivery, particularly as government health programs may be compromised amid conflict and many settlements exist outside the formal health sector’s reach.

These kinds of innovations were highlighted at the world’s first Pneumonia Innovations Summit, which was held on World Pneumonia Day 2015. At the Summit, 150 global health leaders and innovators came together to advance innovations with the potential to transform the prevention, diagnosis, and treatment of childhood pneumonia.
pneumonia in low-resource settings. More than US$30 million in new funding was announced at the Summit, including $US25 million to improve access to diagnosis and treatment with antibiotics and oxygen in Nigeria and Ethiopia. $US5·5 million to introduce a new diagnostic tool in several countries, including fragile settings, with support from “la Caixa” Foundation and UNICEF.

The push for more investment in the fight against the world’s leading infectious disease killer of children cannot stop here. We need more global, regional, and country platforms that facilitate the investments and innovations required to further improve child survival in these fragile states. Novel and scalable technologies, coupled with creative approaches that go beyond the traditional methods of delivering health services, are critical. Without more innovative approaches in these settings, pneumonia is unlikely to soften its grip on the world’s most vulnerable children.

This is a joint post with Maddie Cleland of the MDG Health Alliance, and Nancy Fullman from the Institute for Health Metrics and Evaluation (IHME).
What the solution isn’t: the parallel of the Zika and HIV viruses for women

Susana T Fried and Debra J Liebowitz

Sudden outbreaks of uncommon diseases do not lend themselves to easy solutions. However, there is one solution we know will not work: resting the responsibility for slowing the Zika virus in the wombs of women. Unfortunately, this seems already to have become the clarion call of departments of health grasping for a remedy.

The World Health Organization (WHO) warns that the Zika virus is likely to spread to every country in the Americas, save Canada and Chile (both countries have climates that are inhospitable to the Aedes mosquito, which can transmit the virus). Alerts have been raised in countries as distant from the Americas as Fiji and Uganda. Although the science is inexact, Zika may be linked to microcephaly, a condition associated with incomplete brain and head development in babies. No vaccine against the Zika virus exists and recommended treatment is non-specific: rest, fluids, and keeping the fever down. In response to the outbreak, some countries, for instance, Colombia, Ecuador, and Jamaica, have recommended that women delay pregnancy. This is eerily reminiscent of abstinence education as a primary means of HIV prevention. Indeed, abstinence will prevent sexually transmitted HIV just as remaining “unpregnant” will prevent Zika from causing fetal harm if it is indeed causing microcephaly. Neither solution is grounded in the realities of women’s lives.

The ability to control when, where, with whom, and under what conditions to have sex is, for many women, the exception, rather than the rule. Women’s ability to delay pregnancy requires that they have control over their bodies, their sexuality, and their reproductive decision-making. Yet, some women, in the Americas and elsewhere, have no such control. The Guttmacher Institute reports that, worldwide, 40% of all pregnancies in 2012 were unintended, with 50% resulting in abortions, 38% in unplanned births, and 13% in miscarriage. Fear of violence or other negative consequences, and even common gender roles and stereotypes, prevent many women from negotiating for safer sex.

Pregnancy prevention is no simple matter. The UN population fund (UNFPA) notes that 225 million women have an unmet need for family planning, for reasons ranging from lack of access to information or services to lack of support from their partners or communities. Amanda Klasing from Human Rights Watch points out that some of the countries that are responding to the spread of the Zika virus by suggesting women delay pregnancy, Ecuador in particular, have strict anti-abortion laws. Contraception may not be readily available, especially for adolescents and young women, and women in rural areas. Finally, reproductive...
health, as Sonia Corrêa observes, is frequently the victim of health systems in disarray.

Taking a page from the HIV-response, public health would be better served by engaging in distribution of contraception and education campaigns rather than going door-to-door telling women to delay getting pregnant as they have been doing in Brazil.

Brazil’s HIV response can set an example for the Zika response. While there are certainly critiques to be made, observers agree that Brazil took early leadership in the global HIV response. It was the first developing country to provide free universal medical treatment for people living with HIV. The Brazilian government’s struggle with the pharmaceutical industry to ensure domestic production of low-cost anti-retroviral drugs was paired with a large-scale education and condom distribution campaign. In 2004, the Joint United Nations programme on HIV/AIDS (UNAIDS) reported that Brazil was one of the few countries that had successfully increased the distribution of not just male, but also female condoms. Unlike in some countries documented by the Global Commission on HIV and the Law, Brazil’s programme did not shy away from reaching out to groups that were at high risk for contracting HIV but who were also facing stigma and discrimination, such as sex workers, drug users and gay men. As a result of these efforts, the rates of HIV were, as UNAIDS observed at the time, substantially less than what had previously been projected.

Uganda also had a similar success story early in the HIV pandemic; however, this was short-lived. When the country wholeheartedly embraced the “Abstain” and “Be Faithful” portions of U.S. President George W. Bush administration’s “ABC” strategy and moved away from mass education and condom distribution, rates of infection began to rise. In 2005, Uganda’s First Lady, Janet Musevani, even called for a national “virgin census” to support her abstinence agenda.

In the case of the global response to Zika virus, there are numerous lessons to be learnt from the response from Brazil and Uganda to HIV; but it seems these are being ignored at present. The HIV programme in Brazil set an encouraging example of preventative measures being effective with appropriate large-scale education and condom distribution. Experiences in Uganda suggest that the implementation of abstinence as a prevention strategy is unreasonable and ignores what we know about gender, sexuality, and public health.

If we are to apply the lessons learned about HIV prevention to the Zika virus, states should urgently engage in massive condom distribution and education campaigns, and eliminate restrictive abortion laws. This suggestion is particularly salient given reports, confirmed by the U.S. Centers for Disease Control, that the virus may be sexually transmitted. As Monica Roa from Women’s Link Worldwide in Colombia comments: “In a crisis like the Zika outbreak, the lack of sexual education is exposed...Health ministries should inform rather than recommend”. A recent health protocol in Brazil moves in the right direction, directing health workers to provide information about contraception. However, it falls short of calling for removal of restrictions to abortion. As the Zika virus is now spreading globally, with new reports from the South Pacific, it is worth heeding the call from the UN High Commissioner for Human Rights, who, on February 5, called on countries with Zika cases to “make available sexual and reproductive health counselling to women and uphold their right to terminate pregnancies.” Effective and sustainable public health responses require respecting and protecting the rights of women living with Zika.
Using innovative technology to optimise early testing, care, and treatment for HIV-exposed infants

Francesca Celletti and Jennifer Cohn

Although recent years have shown some improvements in the effort to end AIDS in children, one of the great challenges in stemming the tide of paediatric HIV continues to be the complex process of performing early infant diagnosis. There are often logistical issues with transporting samples back and forth from the laboratories to patients. Caregivers sometimes wait months to receive test results, leading to many patients being lost to follow-up. An innovative symposium that took place at the International Conference on AIDS and STIs in Africa (ICASA) in December 2015, set out the way forward in terms of four concepts: move, innovate, document, communicate.

At the symposium, the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) in partnership with UNITAID, UNICEF, and the Clinton Health Access Initiative (CHAI) discussed the lifesaving impact that the integration of point-of-care testing into national early infant diagnostic (EID) networks could have for HIV-exposed infants.

In the past, we have seen how innovative technology—such as home-based glucose tests for diabetes—can significantly improve health outcomes, but the global health community still faces challenges in applying these technologies in resource-limited settings to quickly diagnose and treat some of the greatest health challenges in those regions, such as paediatric HIV.

As the satellite symposium at ICASA highlighted, there is an urgent need to rapidly scale-up and optimise national EID networks in order to increase the proportion of HIV-exposed infants who are tested and to decrease the turnaround time between testing and receiving results. Evidence shows that without treatment, up to 30% of HIV-positive infants will die before their first birthday, most before 2 months of age. It is, therefore, critical to test and treat HIV-positive infants as rapidly as possible and get the results to the caregivers without delay.

Point-of-care EID has the potential to be a much-needed game changer in the paediatric HIV response by expanding access to EID and getting infants’ HIV test results into
the hands of parents and caregivers much more quickly. At least two point-of-care EID products are making their way onto the market, while others are in the development pipeline. But without widespread access to this technology, the impact will continue to be limited.

**Move: achieving an AIDS-free future**

At the symposium, an HIV-positive mother from Zimbabwe described her experience with EID testing. “When they were 6 weeks old, I took my twin daughters to the clinic for testing and then waited for the results for over a month,” she said. “I would go back to the clinic every now and then to check for the results...The waiting caused me a lot of anxiety,” she added.

This waiting game takes place during a critical time period for an HIV-infected infant, where every day without treatment could be devastating to their health. In 2014, only 50% of infants who were tested for HIV received the results. Without treatment, 80% of all HIV-positive children will not live to see their fifth birthday. 30 years into the AIDS epidemic, the most important step to keeping children living with HIV alive—diagnosis and linkage to treatment—continues to be the weakest step in the paediatric treatment cascade. Every day that a baby goes undiagnosed and untreated is a day lost in the race to save the child’s life.

The ambitious UNAIDS’ 90-90-90 global targets emphasize that 90% of all people living with HIV should know their HIV status, 90% of all people with diagnosed HIV infection should receive sustained antiretroviral therapy, and 90% of all people receiving antiretroviral therapy should be virally suppressed. The use of point-of-care EID technology will be critical to achieving these targets in the context of paediatric HIV. By using point-of-care EID to quickly identify children living with HIV in need of antiretroviral treatment (ART) and link them to services, swift gains can be made towards the 90% diagnosis goal for children by 2020—which also sets the stage for the reaching all three 90-90-90 goals for children by the end of the decade.

How point-of-care EID is rolled out and implemented over the next few years will dramatically impact future progress in the fight against paediatric HIV and AIDS. Fortunately, at events like the ICASA conference, national governments, funding agencies, and international NGOs alike have showcased their commitment and determination to apply new and innovative approaches such as point-of-care EID to ensure that every HIV-exposed infant has access to early infant testing, care, and treatment. We must ensure that this momentum is translated into action in the field.

**Innovate: transformative technologies and approaches**

But signs of progress are emerging. New-to-market, point-of-care technology makes it possible today to screen infants on-site and quickly receive their test results so that HIV-positive infants can be rapidly enrolled on life-saving antiretroviral treatment. If integrated into national EID networks, point-of-care testing has the potential to create a more rapid and decentralised approach. Point-of-care testing platforms are easy to use in a variety of service delivery settings—not just in clinics and community centres, but also general paediatric wards and nutrition centres—and do not require skilled laboratory technicians to operate. Testing can take place while mothers and children wait and, in most cases, point-of-care EID tests results can be returned to the caretaker within two hours of collecting a sample.

At the same time, innovation and technology don’t save lives alone—we need to ensure these products are accessible at reasonable prices, are adapted to specific country contexts, are integrated effectively into health systems, and that health care workers on the ground are well-trained on how to use them. In addition, a supportive environment for integrating these new technologies into existing health systems must be created through the adoption of national and global policy recommendations. Finally, we need to make sure that those infants who are diagnosed will then be promptly linked to treatment.

To achieve these goals, EGPAF is implementing an ambitious UNITAID-funded project that aims to optimise early infant diagnosis of HIV in nine African countries through the introduction of new-to-market, point-of-care HIV testing. The project aspires to increase the number of infants with HIV receiving lifesaving treatment, while also developing robust global and national markets for affordable, effective and equitable HIV infant testing.

**Document and communicate: ensuring sustained and transferable progress**

The ICASA symposium stressed the importance of carefully documenting and sharing lessons learned through the introduction of point-of-care technologies into different contexts. Systematic monitoring and evaluation as well as rigorous operations research were identified as a key need to ensure that the innovation introduced in countries can be sustained as well as transferred to other countries.

With this emphasis on the importance of a sustainable and transferrable model, the UNITAID/EGPAF project aims to demonstrate the added value of point-of-care EID through targeted evaluation studies. These studies will focus on evaluating the impact of point-of-care EID on the paediatric HIV treatment cascade. They also will evaluate the cost-effectiveness of the introduction of point-of-care EID into existing laboratory networks.

Evaluation studies will be conducted in close collaboration with WHO and international diagnostic networks and consortia, such as the African Society for Laboratory
Medicine (ASLM) and the UNAIDS Diagnostics Access Initiative (DAI), in order to ensure that the studies build on existing operations research efforts, and that the results are widely disseminated and contribute to the development of future normative guidance.

With the political will and technologies in place, the global community is well placed to tackle one of the biggest challenges of the paediatric HIV treatment cascade and make it possible to increase the number of HIV exposed infants tested, decrease result turnaround times, and improve linkages to treatment. Building on the momentum generated at the ICASA symposium, we need to move, innovate, document, and communicate around new technologies and approaches to paediatric HIV testing, care, and treatment as we strive to create a world where no child has AIDS.
Is a new deal that promotes innovation and access to medicines and health technologies possible?

Mandeep Dhaliwal

In a small village in the Mareko district of Ethiopia, a little girl suffers from seizures, unable to access life-changing treatment for epilepsy. Farther east in the Philippines, a bed-ridden father opts against necessary cardiovascular disease medications, aware that he is not able to afford them. And in the bustling city of New York, a cancer-stricken young man without the right health insurance carries the weight of the world as his treatment impoverishes his family.

From the poorest countries to the most prosperous, critical medicines continue to be inaccessible to those who need them. In the face of the recently adopted Sustainable Development Goals (SDGs), including SDG 3 which commits the world to "ensuring healthy lives and promoting well-being for all at all ages", it is critical that policy makers examine how to optimise efforts to promote access to new medicines, vaccines, diagnostics, and related health technologies, while also providing the incentives that encourage much needed new research and innovation.

It is for these reasons that UN Secretary-General Ban Ki-moon recently established the High-Level Panel on Access to Medicines, which met for the first time on December 11–12 2015. The Panel has been tasked with proposing solutions to address the misalignment between trade rules, international human rights law, and public health objectives in order to significantly improve innovation and access to medicines, vaccines, diagnostics, and related health technologies across the world.

The High-Level Panel is co-chaired by Festus Mogae, former President of Botswana and a pioneer of free HIV treatment in his country, and Ruth Dreifuss, former President of Switzerland who has extensive experience at the intersection of intellectual property and public health and intellectual property. The work of the High-Level Panel will be supported by an Expert Advisory Group of renowned experts in the fields of trade law, human rights, public health, innovation, and health technologies. The Expert Advisory Group is Chaired by Michael Kirby, an eminent jurist and retired Justice of the High Court of Australia with strong experience on human rights and law.

In conducting its work, the High-Level Panel issued a call for contributions on December 21, 2015 to obtain ideas, solutions, and proposals from governments, industry, academia, experts, stakeholders, and patient groups. All contributions must be submitted by February 18, 2016 before 11:59 pm EST.

Authors of shortlisted contributions will be invited to participate in one of two hearings where they will discuss their contributions with the High-Level Panel. Stakeholders and interested groups will also have the opportunity to share their feedback on the shortlisted contributions as part of the hearings. At the end of its work, the Panel will provide the UN Secretary-General with a report, which will be presented to the General Assembly.

The establishment of this Panel by the UN Secretary-General provides an important opportunity to find a new deal that both delivers medicines and other health technologies to the people who need them and promotes innovation.

Organisations and interested stakeholders are invited to view the Panel’s call for contributions and make submissions at www.unsgaccessmeds.org, where a full list of High-Level Panel Members and those appointed to the Expert Advisory Group is also available.
Increasing research capacity and awareness of chronic lung diseases in East Africa

Bruce Kirenga

“Don’t worry, it’s TB negative”, are words often said to east African patients who have just consulted their local physician with complaints about cough, sputum production, and breathlessness. Chronic respiratory diseases such as chronic obstructive lung disease (COPD) and asthma are diseases that are extremely neglected in sub-Saharan countries. Notably, this ignorance is in sharp contrast to the rising prevalence and impact of non-communicable diseases (NCDs) in Africa. How can we tackle this problem?

While communicable diseases such as malaria, HIV/AIDS, and tuberculosis have long been regarded as number one health threats in this region, an epidemic of NCDs is slowly invading the African continent. Chronic respiratory diseases do considerably contribute to this overall increase. Indoor cooking with biomass fuels, infectious-disease-triggered lung damage (TB and HIV), and ambient air pollution in urban areas seem the main drivers of the lung disease epidemic in Uganda.

To tackle this problem, several lung health awareness projects in Uganda and its east African neighbours have been initiated, accelerated by recent studies. One of the most prominent ones is FRESH AIR, a large European-Union-funded programme that focuses on prevention, treatment, impact, and awareness of chronic lung diseases in four countries worldwide, including Uganda, Kyrgyz Republic, Vietnam, and Greece. The FRESH AIR philosophy is based on the sharing and transfer of knowledge across borders. Using implementation science, the project aims to build research capacity on a local level.

On Monday November 23, 2015, Makerere University in Kampala, Uganda, embarked on a first important step towards reaching this goal. On this date, the inaugural meeting of the Makerere University Lung Institute took place. The Lung Institute was created to act as a centre of excellence for research into the prevention, diagnosis, and care of respiratory diseases in Uganda and beyond. To fulfil these aims, a multidisciplinary effort is required from a team including clinicians, basic scientists, epidemiologists, and public health workers. In addition, the Institute will
serve as a platform for training of high calibre community oriented lung health professionals in resource-limited settings.

Besides FRESH AIR, one of the Institute’s first planned projects will be the African Severe Asthma Program (ASAP). In ASAP, three universities in Kenya, Ethiopia, and Uganda will collaborate to include about 2000 patients with asthma and to investigate whether providing these often very symptomatic patients with basic treatment alters clinical outcomes. Another goal is phenotyping and genotyping the therapy-resistant severe asthma population, aiming to find new leads for asthma diagnosis and treatment in this region.

For ASAP, the newly established Lung Institute will collaborate with the Groningen Research Institute for Asthma and COPD (GRIAC) of the University of Groningen, The Netherlands. The collaboration includes training and exchange of pulmonologists, technicians, and research staff. Ultimately, the Makerere Lung Institute is envisaged to improve respiratory research, training, and care in Africa, with the long-term goal of acting as sub-Saharan Africa’s center of excellence in lung health.

This is a joint post with Prof Nelson K Sewankambo, principal of the Medical School of Makerere University (Kampala, Uganda); and Dr Frederik A van Gemert, Dr Job FM van Boven, and Prof Thys van der Molen, Groningen Research Institute for Asthma and COPD (GRIAC) (University of Groningen, The Netherlands).
Non-doctor emergency surgeons are saving thousands of lives in rural Ethiopian hospitals

Biku Ghosh

At the end of the first long day of advanced skills training in emergency surgery and obstetrics, Murida Shamil approached me timidly. She was 28 years old and had travelled nearly a day and a half by public transport from her rural primary hospital to Awassa to attend this course. “Dr Biku, I am sorry that I have been late each time during the coffee and lunch breaks to return for the skills training and you all had to wait. Sorry I had to breastfeeding my 6 month old daughter. My husband who was looking after her in between was late. I have told him off.”

Our Southern Ethiopia Gwent Health Care Link was the first to introduce Continuing Medical Education (CME) programmes in emergency surgical and obstetric training for non-doctor health officers in the Southern Nations, Nationalities, and Peoples’ Region (SNNPR) of Ethiopia in 2000. By the end of 2005, after consultation between our organisation, THET, the Federal Ministry of Health in Ethiopia, WHO, Addis Ababa University representatives, and the British Embassy (which was at that time funding our CME programme), consensus was reached on starting a task force in the country to develop a Masters programme in emergency surgery and obstetrics. The task force involved all the then-existing five medical universities as well as representation from other bodies.

The Masters programme was rolled out in 2009. The strategy was intended to overcome the human resource scarcity of trained surgeons within a short period of time especially in rural Ethiopian hospitals. Trained health officers and BSc nurses who have been working in health facilities for a minimum of 2 years are recruited through a tough entrance examination. They are then trained in a 3-year special MSc course designed for producing emergency surgical officers competent to perform emergency surgical, gynaecological, and obstetric operations such as caesarean sections. This Integrated Emergency Surgical Officer (IESO) training programme started in three universities with an intake of 43 students and has since been expanded to 11 universities. The first batch of graduates qualified in 2012/13. Currently there are 153 qualified IESOs deployed in different regions. By the end of 2015 the initiative plans to train 800. The future plan is to make one IESO available per 100,000 population throughout the country.
The Ethiopian Government has recently undertaken a massive hospital-building programme throughout the country. In the SNNPR, with a current population of nearly 26 million, the number of hospitals has increased from only 14 in 2001 to more than 50 in 2015. Only 26 of these hospitals are currently carrying out emergency medical or obstetric surgery, with only 44 trained surgeons, only 11 of whom are medically qualified surgeons or gynaecologists; the other 33 are IESOs. Many of these hospitals only have IESOs. With the help of the SNNPR health authority, we were keen to establish what impact the IESOs are having in the region and support them with further training.

A UK team of one general surgeon (myself), two orthopaedic surgeons, and two anaesthetists, with the help of another surgeon and two gynaecologists from Awassa teaching hospital, arranged a 5-day advanced skills course in early November 2015. All 33 IESOs in SNNPR hospitals were invited. Only 24 of them could attend; five had only qualified that year. Between them, these 24 IESOs have carried out about 4856 caesarean sections, operated on 562 ruptured uteruses, and done 1366 laparotomies for various other indications. Thus potentially more than 6000 lives (plus another 4500 newborn lives) have been saved by these IESOs in the past 3 years alone.

Murida graduated as an IESO just over 3 years back. Since then she has carried out 400 successful caesarean sections, dealt with 64 ruptured uteruses (with only one death), and done approximately 200 laparotomies for various indications. And she also managed to have her first baby daughter!

We were all extremely impressed by the technical skills of these young IESO during this course and have no doubt that they will continue to save many thousands lives in rural hospitals in Ethiopia for years to come. Is there a lesson for other countries to learn from this?

This is a joint post with Aberra A Gobeze, MD, Assistant Professor of Urology and Surgery, Hawassa University Referral Hospital, Hawassa, Ethiopia, and Founder of the Southern Ethiopia Gwent Health Care Link.
**We can end polio by supporting those at the heart of eradication: polio workers**

*Tunji Funsho*

At 3 years old, Lawan Didi Misbahu contracted polio in Kano, Nigeria, which robbed him of the ability to walk. For many in Nigeria at that time, this would have led to a life of limitation. For Misbahu, it led to a life of fighting for a world where no other child suffers the same fate.

In 1988, as the world launched a new global partnership to end this crippling disease—the Global Polio Eradication Initiative—Misbahu launched what would become his life’s work. Motivated by a love of soccer, he founded the sport of *para-soccer*, which has since helped to rehabilitate over 3000 paraplegic people, including many polio survivors. Now played across Nigeria, *para-soccer* gives players the confidence to fully participate in society, and raises awareness about the importance of polio vaccination.

Misbahu’s story is inspirational, but he is just one of hundreds of thousands of heroes working around the world to stop polio in their communities, whether it be through advocacy efforts, vaccinating children, or helping build trust in communities. Because of these men and women, we’ve made impressive progress and are approaching the end of a historic year for polio eradication. I’m proud to have spent 30 years working through Rotary—the first organisation to take on global polio eradication—to end this disease. After decades spent working tirelessly towards this goal, my home country, Nigeria, was removed from the list of endemic countries in September after going more than a year without a single case. In 2015, there have been less than 70 cases reported to date—the lowest number on record. Polio has now been restricted to just two countries: Pakistan and Afghanistan.

In recognition of these incredible contributions, His Highness Sheikh Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi, and Bill Gates, Co-Chair of the Bill & Melinda Gates Foundation, honoured Misbahu alongside four other exceptional individuals at the first-ever *Heroes of Polio Eradication Awards* in Abu Dhabi on December 6. The awards, part of an ongoing partnership between the Gates Foundation and the United Arab Emirates to support polio eradication, acknowledge those who have dedicated their lives to stopping polio worldwide.

Recognising these extraordinary heroes and supporting their work in the final years of eradication is absolutely essential. Around the world, these men and women wade through floodwaters, deliver vaccines in dangerous areas, and trek to some of the most remote places on Earth in order to reach children with polio vaccines. Since the start of the polio programme, 2.5 billion children have been immunised against polio thanks to the efforts of 20 million volunteers.

In Nigeria alone, more than 200,000 health workers have fanned out across the country, repeatedly vaccinating over
45 million children to drive polio out of the country. These thousands of health workers are supported by hundreds of Rotarian volunteers who travel across the country to observe, monitor, and often supervise the work of vaccinators in the field, as well as assist in efforts to encourage parents to vaccinate their children against polio.

These health workers also do so much more than just protect children from polio. Alongside polio vaccines, they deliver essential vitamins, tools to improve sanitation, and other important childhood vaccines. They get to know communities and families, and when babies are born, they encourage parents to have their children receive routine immunisations. In Nigeria, these heroes also include approximately 1300 polio survivors, organised in part under Misbahu’s leadership, who serve as polio vaccine ambassadors in their communities, building trust and contributing to an increase in the number of families who accept polio vaccines.

By honouring Misbahu and the other Heroes of Polio Eradication, we remember that if one individual can accomplish so much, the hundreds of thousands of polio workers globally can move mountains—and they have. We are approaching the day when no child will ever again be paralysed by this disease. So as we recognise these five heroes, let’s all join together in committing to support polio workers everywhere. Together, we can end polio in its last strongholds, and ensure a world without this disease for future generations.

Image shows Bill Gates, Co-chair, Bill & Melinda Gates Foundation (2nd left), and HH Sheikh Mohamed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and Deputy Supreme Commander of the United Arab Emirates (UAE) Armed Forces (5th left), standing for a photograph with winners of the Heroes of Polio Eradication (HOPE) awards during the HOPE awards ceremony at Al Mamoura, UAE, December 6. Seen with Constant Dedo, a polio consultant with the World Health Organization (1st left), Freeda, a health worker in Baluchistan, Pakistan (3rd left), Atta Ullah, Chairman of a local support organization in Khyber Pakhtunkwa, Pakistan (4th left), Bibi Malika, a polio worker in Helmand, Afghanistan (6th left), and Lawan Didi Misbahu, Chairman of the Association of Polio Survivors of Nigeria and President of the Para-Soccer Federation of Nigeria (7th left)
Ending tuberculosis in Ukraine: motivated frontline health workers are key in achieving WHO goals

Niranjan Konduri

The importance of proper data management to help advance patient care has been acknowledged by the digital health agenda for the End TB Strategy, launched by WHO in September. This strategy describes the benefits of digital dashboards and digital notification of tuberculosis cases for frontline workers, noting the many advantages over the process of sending paper forms, described as “a cumbersome process that often impedes the completeness of reporting.” But what does this focus on digitising tuberculosis data mean for frontline health workers in resource-constrained environments?

While the transition to digital case management might seem to be a simple solution, doctors like Irina Chaban, a tuberculosis doctor based in a health facility in southern Ukraine, are challenged by a lack of basic technologies that are taken for granted in higher-income countries. While 40% of the world’s population now has an internet connection, many frontline health workers do not have access to computers, tablets, or smartphones—and even when they do, computer crashes and unreliable internet connections are common. Frontline health workers like Irina—many of whom have little or no experience with computers—must therefore navigate through lengthy processes to even acquire the technological capacities necessary for their work.

Irina had never used a computer before 2012, when the Ukrainian Ministry of Health (MoH) mandated the creation of a National TB Registry, facilitated by e-TB Manager—a web-based tool to manage all information needed for tuberculosis programmes. In collaboration with the USAID-funded SIAPS Program, the MoH issued Irina her first computer, enabling her to electronically report her tuberculosis cases and track laboratory results of her patients in real-time—a major step forward for a doctor in Ukraine, which ranks 124th out of 143 countries in terms of government usage of information and communications technologies (and is among the 30 high-burden multidrug resistant (MDR) tuberculosis countries globally).

After just 3 months, however, Irina’s computer was stolen from her health facility. While nationwide implementation of the National TB Registry gradually continued throughout the country, Irina was left without a computer for almost 8 months.

Noticing Irina’s plight, a deputy senior medical officer in her rayon (administrative district) secured a laptop for her.
use. This only solved half the problem, however—in the absence of a computer, the internet in Irina’s tuberculosis dispensary had been cut off. The head doctor of a rayon typically issues an authorisation for an internet connection, but Irina’s rayon lacked a head doctor. As such, Irina was obligated to obtain a number of authorisations from other officials simply to justify getting an internet connection—a process that can take anywhere between a few months to a year.

Frustrated by the delays, Irina decided to establish a home internet connection, personally shouldering a cumulative cost of around US$400 over 2 years—a high price in a country where doctors earn on average $200/month. Using her home connection, Irina was able to access the National TB Registry, periodically entering data and monitoring trends for her facility.

When a new head doctor of the rayon was finally appointed, he learned about Irina’s work and her dedication to contributing to the National TB Registry. Upon discovering that she had been doing work at home at a significant personal cost, the head doctor swiftly ordered three new computers for the tuberculosis dispensary and the health facility, and authorised an internet connection.

Much to Irina’s dismay, burglars soon broke in again, taking the computers. Luckily for her, though, she still had her old laptop at home. Some health workers not only have to contend with the risk of managing people suspected of or confirmed with MDR tuberculosis, but also have to shield their equipment from being marked for burglary.

Well over 3 years after the initial rollout of the National TB Registry, Irina continues to diligently add information into e-TB Manager, using digital technologies to help eradicate tuberculosis in her rayon in line with WHO’s digital health agenda.

Without dedicated health workers like Irina, achieving the aims laid out in WHO’s End TB Strategy would be a distant dream. Frontline workers from all high-burden tuberculosis countries must be celebrated for their motivation in overcoming what at times appear to be insurmountable obstacles and turning these dreams into a reality.
Universal health coverage amid conflict and fragility: ten lessons from research

Sophie Witter

We live in uncertain times. 2015 has seen more refugees, more conflicts, and more natural disasters, while epidemics like Ebola raged in the west Africa region. Terrorism continues to prey on the mind of the West and many political conflicts continue without resolution. In this climate, it is tempting to fall back on defensive strategies, on fear, and on containment of risks. Universal health coverage (UHC), celebrated on December 12, is the antithesis of this—it is an optimistic vision, emphasising that the world can and must provide access to quality essential health care for all, even those—especially those—living in the most difficult of contexts.

But how can this be done and what have we learned about health care provision in fragile and conflict-affected states? ReBUILD is a research consortium focusing on learning lessons about health system reconstruction post-conflict. What are some of the insights that can be drawn from our work to date? Here are my top ten for moving towards UHC.

1. **Conflict and crisis can create openings for systemic reforms**, but these are unpredictable in timing: a post-conflict ‘window’ may exist but could be undermined by weak internal capacity to seize it; openings can arise some time later, as they did post-conflict in Sierra Leone, so the support from the global community needs to be responsive to these openings as they arise.
2. All successful reform is driven by internal political agendas, but these alone are not enough in fragile contexts—a **gear change in health care provision usually requires a combination of top-level leadership, aid coordination, and increased external support.**
3. **Post-crisis is a time of opportunity but also risk**—the decision to contract out services, for example, can set health systems on a certain path. All paths can be changed but only with the preconditions stated above.
4. While development partners often focus on changing policies, the gap between policy and practice can be huge in fragile and post-conflict states. What determines actual change in these contexts are the implementation players at local level, which is why a focus on the strengthening of district systems is so critical. Do not fixate on the national level; work at the local level, but bring your learning at that level back up to enrich the policy process.
5. **The T-word (trust) is a critical element**—without confidence by communities and other actors, no programme can be successfully implemented, and crises undermine bonds of trust which may have been weak historically. Building trust is a delicate and long-term internal process. Outside players can support promising local leadership, but cannot lead the process.

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6. **Institutions**—see point 5. Support to institution building in situations like post-Ebola west Africa should be sensitive to the fact that this is critical but cannot be externally imposed.

7. Health markets are complex in all settings but even more so in fragile and post-conflict settings when communities and health-care providers have often had to fend for themselves without effective state regulation. **UHC reforms can build on the vibrancy and innovations while gradually bringing more uniformity and consistency of coverage. This may take a long time.** In Cambodia, for example, it has taken decades for the state to take back some of the core functions which non-governmental organisation and external players managed post-conflict.

8. **Staff and managers in fragile settings can show remarkable resilience,** surviving during dangerous conditions and keeping services functioning through local adaptations. UHC means reinforcing and rewarding resilience, and providing decision spaces and flexibility for good staff to thrive and drive the agenda forward.

9. Vulnerabilities in fragile settings are serious and multifaceted, and **plans for UHC need to engage all parts of the community in ‘building back better’.**

10. Finally, **all contexts are particular**—all countries and communities carry their own complex legacy which informs their forward trajectory, so beware any generalisations (such as 1-9 above)... As actors like the UK government increase their focus on conflict-affected contexts, it is ever more important not just for more and better research to inform policy and practice, but also for better sharing of insights and knowledge between all players to make substantial and sustainable progress towards UHC for all.
Ending canine-mediated human rabies: the time is now

Bernadette Abela-Ridder

Human rabies transmitted by dog bites is a daily disaster for underserved and rural populations, especially children. Rabies is 100% vaccine-preventable in animals and humans. Most cases can be prevented through vaccinating dogs, avoiding being bitten by dogs, and raising community awareness. Yet rabies remains a neglected disease.

It is time to address that neglect. Stakeholders, in the drive to eliminate rabies, will be doing just that at WHO headquarters in Geneva during an international conference on the Global Elimination of Dog-Mediated Human Rabies on December 10–11. Many are joining forces, not only because rabies control is a worthy cause, but also because it is possible, illustrating a public health success driven by coordinated action between the veterinary and human health sectors.

The conference will confirm that “yes”, it is possible to eliminate a disease that haunts underserved communities. Lessons learned through proof-of-concept programmes in Bangladesh, the Philippines, South Africa (KwaZulu-Natal province), and Tanzania have demonstrated significant reductions in the number of human and canine rabies cases. Zero human cases have been recorded in KwaZulu-Natal and on the island of Pemba in Tanzania since 2014, and a 50% decrease in human rabies deaths in Bangladesh has been achieved over just 3 years. The Government of the Philippines has declared three island provinces, five island municipalities, and four other islands rabies-free.

The success of these rabies programmes has been driven by a concerted effort to generate evidence to inform national policies and to encourage political commitment at the country level. Various strategies have been adapted and home-grown solutions found for tackling problems and identifying opportunities to embed rabies within broader services and systems.

Dog vaccination is the most effective intervention against rabies, decreasing rabies in dogs and having a direct impact on public health by decreasing transmission to humans, in whom the disease is uniformly fatal. Those who are bitten by an infected animal invariably die a slow, painful death, unless they receive post-exposure prophylaxis before symptoms develop. Post-exposure prophylaxis is costly yet justified: there is no other cure.

The Global Elimination of Dog-Mediated Human Rabies conference will be jointly hosted by WHO, the Food and Agriculture Organization of the UN, and the World Organisation for Animal Health, and supported by the Global Alliance for Rabies Control. The conference will advance the agenda towards the elimination of human rabies transmitted by dogs. Globally, it is time to End Rabies Now.
Human rights at the World Bank: inside out

Chris Simms

Few organisations know more about human rights, inequalities, and diversity than the World Bank; indeed, its website and e-library are replete with information on how each of these relate to the health and wellbeing of individuals and populations. Yet a recent report from the UN Special Rapporteur on Human Rights adds to claims that, internally and externally, the bank does not practise what it preaches and that it often seems incapable of learning from past failures.

The report states that the Bank ignores human rights and treats them “more like a disease than universal values and obligations”; operationally its approach is “incoherent, counterproductive and unsustainable”.

Jim Yong Kim addressed the issue earlier this year, blaming the “political prohibition” clause that prevents it from involving itself in the political affairs and thus the human rights of any country. However, the UN rapporteur calls this “misplaced legalism” and says that, together with institutional culture, a lack of transparency, and a host of other factors, the Bank’s response on human rights is anachronistic and, for most purposes, the institution “is a human rights-free zone”.

Interestingly, these same factors also help explain the Bank’s failure to address internal human rights abuses. Especially striking is the lack of response to studies (many undertaken by the Bank itself) showing a culture of systemic discrimination against African-Americans at senior bank levels. Again, because of a legalism, the Bank (as a UN agency headquartered in the USA) is not required to collect race-based data nor provide independent arms-length assessment of claims of discrimination—so it does neither. A recently released survey taken by 10 000 Bank employees shows that (among other important findings) only 43% of respondents said managers are held to account when actions or behaviour are contrary to the institution’s values on diversity and inclusion.

A Way Forward

To close the gap between knowing and doing, Bank leadership ought to listen to the independent evaluators whose advice it seeks and for which it pays. Their reports describe worsening trends in performance, mainly driven by poor quality of work before implementation—ie, not “getting things right from the outset”. Special attention is drawn to poor risk assessment and risk management. Indeed, recent investigations into Bank projects reveal a doubling of projects graded highest risk for “irreversible or unprecedented” social or environmental impacts and that, over the last 10 years, “projects funded by the World Bank have physically or economically displaced an estimated 3.4 million people”.

The UN report says the Bank is reducing the probability of success by delinking what is inextricably linked—health and human rights. It says human rights need to be integrated from the outset and that therefore the Bank should
adopt an approach that is above all “principled, compelling and transparent”, making use of “the universally accepted human rights framework”.

Similarly, diversity frameworks commonly used in the public and private sectors are acknowledged to lead to better process and outcomes. The Bank might take into account two key functions performed by its neighbour in Washington, DC—the Equal Employment Opportunity Commission (EEOC) which enforces discrimination in employment laws in the USA. First, it requires businesses to report their diversity data; second, it provides independent assessment of claims of discrimination. Critics claim that the Bank’s internal Administrative Tribunal (whose members work for the Bank) has yet to find a single case of discrimination against African-Americans.

Calls for the Bank to address human rights come at a time when its leadership and strategic direction are in question by two-thirds of its employees. At issue are reform efforts: first to shift from a country-centred structure to one that is sector-based, and second to create knowledge-based departments. Critics worry that the sector-wide approach will reduce human rights social safeguards by placing the onus to protect them on country governments, which may not have the required resources or inclination to do so. The goal to become a “knowledge-based organization” seems improbable since, by its own account, it has yet to become a “learning organization”—one that sees learning more than an “optional extra”.

There is a disquieting symmetry between discrimination in the executive suites at World Bank headquarters in downtown Washington and human rights abuses in the field that affect millions—both the consequence of “misplaced legalism”. It is also worrisome that only 26% of Bank staff believes they work in climate of “openness and trust”; worrisome too is Kim’s observation that “I’ve done this before in other organizations and what I’ve found is that if you know a change has to be made, just do it as quickly as you can, and get it done”. None of this is indicative of a learning organisation, one that is going to close to the gap between what it practises and what it preaches, one that will lead by example. The UN rapporteur is right—what is needed is transparent dialogue that will generate an “informed and nuanced policy” on human rights.
Strengthening the human face of capacity: three lessons from Asia

Svetlana Ancker

At the heart of effective health systems are people—health workers on the front line. But with pay, support, and training not always being adequate, it is no surprise there is not enough of them: WHO estimates a 7·2 million shortfall. As Richard Mallett and Lisa Denney asked in their blog, how can we pay more attention to the “human face of capacity”?

First and foremost, we need to strengthen health systems in a way that is more responsive to the sociocultural factors, individual behaviours, and government support that Richard and Lisa outlined. These are real challenges. Experience has shown that the most long-lasting change happens when we work with existing structures rather than imposing one-size-fits-all solutions.

Building resilient health systems is a responsibility for all of us—from governments to non-profits and the private sector. Long-term social, economic, and business benefits can all arise as a result of stronger health systems. Contributing to this gives every sector an opportunity to join the fight against global health challenges and create an environment in which communities and businesses can thrive.

CARE International and GSK are taking this approach in Asia. With financing from GSK, which reinvests 20% of its profits from least developed countries back into their health systems, CARE is running health worker training programmes focused on improving access to maternal and newborn health care across six countries. Doing this in a sustainable way is not always easy. What are the three lessons we have learned in Asia?

Engaging and empowering communities
Before embarking on a programme, we listen to communities about what they need and what capabilities we can work with. In Nepal, there was an existing cadre of female community health volunteers. Training and tools developed by CARE Nepal enable these volunteers embedded in the community to track pregnant women, new mothers, and babies; offer timely medical advice; and link them up with health-care services. This is done via Mothers’ Groups, which the volunteers facilitate.

This is important in a place like Nepal, where in some areas practices such as isolating women during menstruation or after giving birth persist. By giving women the knowledge, confidence, and space to discuss their health, we can empower them to seek care. The programme area has seen a drop in maternal and neonatal deaths, and the project has been recognised for helping Nepal meet its family planning needs. We will be discussing our programme learnings at the rescheduled International Conference on Family Planning in January.

Another lesson for us has been the importance of engaging men in improving women’s health. This is particularly relevant in places where the balance of power is not always
in women’s favour. In Kabul, Afghanistan, we engage male community health groups—or shuras—with reproductive health education so that men can better support their wives and female family members.

**Providing opportunities for skills and employment**

To improve recruitment and retention among health workers, new models are needed. Enabling them to charge small fees—through transparent and formal channels, rather than informally—could be one answer. In Bangladesh, we are giving women who have often been homemakers for much of their lives an opportunity to train as private community-based skilled birth attendants.

As well as supporting fellow community women, they can become financially independent—earning a living by charging a small fee for their services. These tariffs are set by the government in consultation with the local community. If someone cannot afford to pay, the birth attendant might help them for free or a local community support group or local government may help out by paying, or enabling the patient to cover the costs over time.

The number of births attended by a skilled health worker has risen from 12% to 50% in the Sunamganj programme area. Half of those births were managed by CARE-trained birth attendants.

**Involving and engaging government for the long-term**

While it is arguably preferable for health workers to be salaried by government, but this is not always happening. Against a backdrop of political instability and economic uncertainty, health workers may need support from other quarters.

But commitment from every level of government is essential to building health systems for the long-term. CARE works hand-in-hand with governments to design and maintain programmes—the aim is to augment their efforts, not create a parallel system. In Afghanistan, the project focused on a particular district of Kabul that the government had been identified as lacking sufficient health services to cover the population. The skilled birth attendants in Sunamganj stay connected to the public system through working with different providers of government health services. In Nepal, community health volunteers work closely with governmental health staff and facilities.

These three lessons are all helping us to shape and improve our programmes as we embark on another 5 years of working in partnership across Asia. They do not provide all the solutions, but by being thoughtful about how we work in concert with communities and governments, we are going some way towards giving health workers skills and opportunities, giving mothers and babies the best possible start, and helping to strengthen health systems for good.

This is a joint post with Daryl Burnaby, director for frontline health worker programmes at GSK, and Jahangir Hossain, director of health at CARE Bangladesh.
Uncharted territory: mapping before disaster strikes

Pete Masters

It is more than a year since Médecins Sans Frontières’ (MSF’s) Ivan Gayton wrote “Digital humanitarianism: finally catching up with John Snow”, and the ambition he outlined of mapping vulnerable areas before disaster strikes is just becoming a reality. In that blog, Ivan described the astonishing achievement of the recently completed map of Lubumbashi, the second-largest city in the Democratic Republic of Congo (DRC). Now, the ambition is to map South Kivu, an entire province of DRC that has long endured violence and conflict.

In November 2014, Missing Maps was established, a collaborative project founded by several non-governmental organisations, with the Humanitarian OpenStreetMap Team (HOT) at its core. The aim of Missing Maps is to put the most vulnerable people in the world on the map, so that wherever natural disasters occur or cholera breaks out, maps can be used immediately to assist in saving lives and alleviating suffering. Mapping is conducted by digital volunteers working around the world, sometimes in ‘mapathons’ in partnership with field teams on the ground. As well as increasing the coverage of maps in neglected areas, crucially, the maps have also been used to directly support humanitarian work.

In Bangladesh, in January 2015, a HOT team arrived in Dhaka with the specific purpose of mapping two highly neglected areas: Hazaribagh and Kamrangirchar (Hazaribagh is the home of Dhaka’s tannery industry and considered to be one of the most toxic environments in the world). Working closely with the Bangladesh OpenStreetMap community, both areas were mapped in 3 weeks, the field teams adding local detail to a map that was traced by volunteers at a mapathon in the UK. Since then, MSF teams on the ground have used the mapping data to comprehensively survey Hazaribagh, gathering information that has enabled effective placement of occupational health services.

In fact, Missing Maps volunteers have been active all over the resource-poor world, from Bangladesh to Congo, from Haiti to South Sudan. Remote mappers trace areas of ongoing humanitarian crisis from satellite imagery, using open tools and processes developed by HOT volunteers. There is no barrier for entry. With a mouse and some motivation, anyone can participate. And over 4000 volunteers have already taken part, mapping areas that cover the homes of over 8 million people (by crude estimates). However, with the total number of people living in areas meeting the criteria of Missing Maps (lack of geographical data combined with ongoing humanitarian crises) numbering in the hundreds of millions, there is some way to go.

 Cue South Kivu... A province of DRC, South Kivu is a shade smaller than Ireland and home to just under 5 million people. It will be the largest mapping project so far undertaken...
by the Missing Maps collaborators by some distance. So, why the scale-up?

There are a few reasons. First, the people of South Kivu have experienced ongoing humanitarian crises for decades now, from civil war to mass population displacements to disease epidemics. The needs there are huge. Second, we have proof that field mapping is possible in comparably stable countries like Bangladesh, Tanzania, and Zimbabwe, but we need proof that it can be done in places where the people are most vulnerable—which, unsurprisingly, are generally the most dangerous to work in—otherwise the lofty ambitions of the project will never be reached.

So in many ways South Kivu is a moon shot—a proof of concept and a challenge for other institutions and organisations to join our efforts. If Missing Maps volunteers can map South Kivu, what excuse is there for others not to join in and help to map the rest of the unmapped world?

Missing Maps was launched in November 2014. To celebrate its 1 year anniversary, volunteers around the world are holding 100 mapathons during OSM GeoWeek, with events in Pakistan, Uganda, Brazil, Indonesia, USA, Tanzania, France, and the UK among others. OpenStreetMap Institutions will host the flagship mapathon on Thursday, November 19, from 6.30 pm to 9.00 pm EST at Peace Corps headquarters in Washington, DC, USA. South Kivu will be one of the areas we map together. Why not see if there is a mapathon near you?
Ebola, health systems, and the human face of capacity

Richard Mallett and Lisa Denney

Give a man a fish, he eats for a day; teach a man to fish and he eats for a lifetime. But what happens when he is unable to practise what he was taught? The west African Ebola crisis exposed two things: the underlying weaknesses of the subregion’s health systems, and the limits of aid-driven approaches to capacity building. Whereas the first has received extensive coverage, the second has been far less talked about—even though it helps account for why health-system weakness persisted for so long.

Capacity building is the backbone of international development. As an idea, it is broadly defined: spend foreign aid in a way that enables “recipient” countries to become “self-sufficient”—ie, to be able to solve domestic problems without international assistance. But in practice it tends to be narrowly operationalised. More often than not, capacity building is reduced to the transfer of knowledge to specific individuals: provide frontline health workers with technical know-how, run a workshop for management professionals, and instruct communities how to act when the symptoms of an escalating virus emerge.

They say that knowledge is power. But there are constraints on what a knowledgeable person can do. The extent of these constraints depends on who you are and what the nature of your wider environment looks like. Do you, for example, have enough autonomy to act in a certain way? And does your environment provide the right incentives for you to translate new knowledge into sustained behaviour? Because if it doesn’t, chances are you won’t.

Since 2013, we have been doing research in Sierra Leone looking at how state capacity can be strengthened to prevent malnutrition—a condition that accounts for almost half of all deaths in children younger than 5 years in the country. Together with Focus 1000, a Freetown-based non-governmental organisation, we studied how international capacity support has been practised in the nutrition sector...until Ebola’s spread intervened.

Returning to Freetown earlier this year, we were struck by how the difficulties faced in controlling Ebola appeared to parallel some of our own findings from the nutrition sector. Many of these centred on the limited effectiveness of policies that depend on knowledge transfer and behaviour change as means to the desired outcome (a reduction in malnutrition rates, a fall in Ebola caseloads). Surveys carried out by Focus 1000, for example, found that most people knew perfectly well what to do if an Ebola case were suspected, but in practice it was a lack of compliance—to act appropriately on the basis of that knowledge—which aided the virus’s spread.

So what’s been going wrong?

In a recent report for the Secure Livelihoods Research Consortium, we argue that, since the end of civil war in 2002, a limited and technocratic application of capacity
building has done little to promote meaningful health system strengthening in Sierra Leone.

Although external capacity support certainly contributed to some important achievements—2010’s Free Health Care Initiative is a great example, in which health-care fees for pregnant women, lactating mothers, and all children under 5 were abolished—for the most part it has been funnelled into a standardised set of technical interventions. These have sought to build capacity in the health system by focusing resources on the system’s units: training health workers in technical skills, supplying health clinics with equipment, creating community-based organisations with a public health remit. Such efforts are visible, tangible, and measurable. They correspond with the demands of the “tick-box nature of the aid effectiveness agenda”, as some have called it. But they don’t grapple with the less visible dimensions of capacity—and that’s the problem.

Trust, social norms, interpersonal relationships, gender roles, power. These all shape human behaviour. As they stand, however, training programmes—representing the dominant practical appropriation of aid-driven capacity building—largely ignore these factors. Young mothers are told how exclusive breastfeeding is one of the best ways to improve the nutritional status of their child, but little attention is paid to the way in which a mother’s (culturally prescribed) responsibilities in the productive and reproductive economies constrain her ability to provide adequate care for others. Spending hours on the farm during planting season deprives her of time with her kids and, evidence suggests, reduces her physical capacity to lactate.

Or consider the remote health worker who provides sloppy care to her patients. Having been through various phases of technical training, she may possess the appropriate biomedical knowledge to diagnose and treat a range of basic health problems (although the use of “cascade” training models, which operate something akin to Chinese whispers, may have diluted the accuracy of that knowledge). But when she receives no supportive supervision, works in a clinic that faces constant drug stock-outs, and hasn’t been paid in 3 months, she sees little value in making the effort. As a result, she may resort to selling medicines on the black market to supplement her meagre income, or charge informal user fees to patients. In turn, these practices can undermine people’s faith in the government’s capacity to provide quality health care, making them less likely to trust public health messaging from official channels (not good when you have an Ebola epidemic on your hands).

A technical approach to capacity building, which assumes that change occurs simply and linearly, overlooks the human face of capacity. It sees the world’s challenges as engineering problems, where identifiable fixes produce known solutions. This logic fails to understand the messiness of the real world, where factors other than knowledge structure action.

Capacity building needs to get smarter. It needs to become more people-centred, reflecting a world in which social relationships matter and where poor treatment by others (including the state) is reproduced in the attitudes and behaviours of individuals. And it needs to become more systemically aware, recognising that human beings inevitably respond to the nature of their wider environment. The delivery of quality health care, not just in west Africa but around the world, depends on it.
WHO decision is critical to the fight against obesity and non-communicable diseases

Rebecca Perl

The recent case of a 3-year-old girl diagnosed with type 2 diabetes shocked the world and highlighted an uncomfortable truth. While the common belief is that conditions like obesity and diabetes affect older people, sometimes as a consequence of unhealthy choices, this case reminds us that many children are sickened by such diseases as a result of the marketing practices of multinational corporations that sell foods high in sugar, fat, salt, and calories and low in nutrients.

An ever-increasing body of evidence is revealing the true harms of these products. For example, the latest Global Burden of Disease study, found that unhealthy eating—including diets low in fruit, whole grains, and vegetables, and diets high in red meat and sugar-sweetened beverages—was implicated in 21% of global deaths.

What's needed is public policy: regulation and taxation of unhealthy products; labelling to encourage healthy choices; curbs on industry advertising that shapes the public's understanding of and desire for consumer products; and media campaigns to inform about the health consequences of unhealthy choices. These interventions, when applied to tobacco, are proven to reduce consumption; the same is likely to be true of other products that are harmful to health, including unhealthy food and beverage products. That's why an intergovernmental meeting in Geneva this week—being held in advance of the next World Health Assembly (WHA) in 2016—could have huge implications for our ability to reduce the global burden of non-communicable diseases (NCDs).

At this meeting, the revised text of WHO's Framework for Engagement with Non-State Actors (FENSA)—ie, how the world's leading health agency will engage with multinational corporations, among others—will be discussed and agreed by member countries in advance of its adoption at the WHA in May. This is important because some of the actors in question—like so-called Big Food and Big Soda—are corporations whose business interests are at odds with public health.

Protecting health research and policy from industry interference is essential, particularly in the context of countries taking action to achieve health-related targets and reductions in NCDs as detailed in the 2030 Agenda for Sustainable Development. In its current state, the FENSA document states that "WHO does not engage with the tobacco or arms industries"—effectively prohibiting these industries from having a role in the creation of international health policy. I would argue that this week's meeting is an opportunity to support the expansion of the FENSA document to include guidance on the food and beverage industry's role in health policy and research as well.

Recent events demonstrate an urgent need to protect health policy from the commercial self-interest of Big Food and Big Soda. The government of Chile took a stand against one of the main culprits of NCDs and legislated for clear labelling on foods high in fat, sugar, and salt.
recognising that more information and honest labelling would empower citizens to choose healthier options. Even the simple step of transparency in labelling was met with resistance. Public health groups in Latin America say that a number of World Trade Organization (WTO) members, including Mexico, challenged the new warning labels at the behest of Big Food.

This battleground is all too familiar. Lobbying governments to file formal complaints to the WTO is a strategy long used by the tobacco industry to object to warning labels on cigarette packs. Large graphic warning labels are proven to increase awareness of tobacco’s harms, increase quit attempts, and ultimately reduce prevalence. The tobacco industry—keen to deter governments from implementing graphic warnings precisely because they do help to reduce smoking—argues that warning labels are a barrier to trade and has lobbied a number of governments to present this type of objection at WTO against countries implementing graphic warnings on tobacco.

This isn’t the only tactic Big Food and Big Soda seem to have borrowed from the tobacco industry. Tobacco companies have a long history of “buying” scientists to challenge scientific studies about the role of smoking in human disease and creating diversions that minimise the link between smoking, lung disease, and death. Similarly, research published in 2013 found that scientific experts sponsored by food and drink industry are five times more likely to find no link between sugar-sweetened beverages and obesity.

An investigation by The New York Times in August 2015, found that the Coca-Cola Company followed a similar strategy through its funding of the “Global Energy Balance Network” to keep attention off the issue of the over-consumption of calories in the form of sugary beverages. The company was criticised for establishing “innocent-sounding front groups to spread the message that sugary sodas have no deleterious effect on health and should not be taxed and regulated.”

A further exposé in September found that the company spent almost US$120 million in the past 5 years to pay for academic health research, partnerships with major medical groups, and community programmes aimed at curbing the obesity epidemic. Worryingly, some of these very groups supported the beverage industry’s successful 2013 lawsuit to block a proposed ban on large, sugary drinks in New York.

This type of activity is conducted on a global basis. In October, The Times revealed that Coca-Cola had spent over $7 million founding the European Hydration Institute, which recommends that people consume the type of sports and soft drinks sold by the Coca-Cola Company. What’s more, the newspaper found that the Institute’s scientific advisory board is chaired by a professor whose university was awarded $1.5 million by Coca-Cola.

Such practices are particularly insidious when children are the target. Advertising for highly processed foods is routinely placed on top websites that appeal to children, like CartoonNetwork.com and Nick.com—one of the many loopholes in the industry’s own self-regulations on marketing to children.

Like the tobacco industry, Big Food and Big Soda have attacked WHO for attempting to set policies and limits that would promote international health and reduce preventable disease. For example, the Sugar Association of the United States lobbied its friends in Congress to cut WHO funding if WHO proceeded to recommend limits for sugar intake.

In 2013, Margaret Chan acknowledged this problem, saying: “Efforts to prevent non-communicable diseases go against the business interests of powerful economic operators…[I]t is not just Big Tobacco anymore. Public health must also contend with Big Food, Big Soda, and Big Alcohol. All of these industries fear regulation, and protect themselves by using the same tactics…Market power readily translates into political power…Not one single country has managed to turn around its obesity epidemic in all age groups. This is not a failure of individual willpower. This is a failure of political will to take on big business.”

Equally, political will would be bolstered if WHO:

• Kept multinational food and beverage companies (particularly those who sell products that are a major contributor to obesity, heart disease and diabetes) from NCD policy formation
• Established a broader conflict of interest policy regarding non-state actors so all NCD prevention and policy is driven by independent research and evidence
• Built support and helped to enable low- and middle-income countries to implement and enforce effective regulations to reduce NCDs

Similar strategies have helped restrict the tobacco industry’s aggressive marketing and self-interested policy making, reducing smoking rates in many countries. By expanding efforts to protect health policy from unethical practices by Big Food and Big Soda, we could further reduce the growing epidemic of chronic disease across the world.

With medicine and changes to her diet and activity levels, the diabetic toddler’s story had a happy outcome. She lost enough weight to enable her blood sugar levels to return to normal, reversing or temporarily curing her diabetes. It will be much tougher to shrink Big Food and Big Soda’s influence over health research and policy, to reduce obesity and the disease it brings among millions of the world’s people. A positive outcome at the FENSA meeting in Geneva could represent real progress, offering governments protection from industry practices that are undermining global health.
The challenge to nutrition researchers everywhere: identify a set of actions that reduce malnutrition in all its forms

Corinna Hawkes and Lawrence Haddad

Policy makers in countries around the world are facing unprecedented challenges in identifying interventions that can help prevent or reduce malnutrition in its many forms. Readers of this journal and nutrition researchers everywhere need to help policymakers do the right thing. The 2008 and 2013 Lancet Series on maternal and child nutrition have played a major role in identifying a key set of actions that can help accelerate undernutrition. The Lancet Series on obesity in 2015 promises to do the same. The time has now come for unifying these two separate worlds and the Lancet family of journals can play a unique role in setting the research—and policy—agenda.

The Global Nutrition Report 2015 published in September tracks progress towards eight indicators of nutrition status that have been endorsed by the World Health Assembly: four relating to undernutrition and four to overweight, obesity, and diabetes. The good news is that there has been progress in reducing malnutrition in all its forms. Data on growth in children younger than 5 years—stunting, wasting, and overweight—reminds us of what can be achieved with the right focus, the right interventions, and policies and sustained commitment. Stunting shows particular progress: 39 countries are now on course to meet the global target, up from 24 last year. The bad news is that progress remains too slow and uneven. For example, progress in addressing anaemia among women is practically non-existent. The world is also completely failing to meet the global target of halting the rise in the rates of adult overweight and obesity as well as diabetes.

One way that researchers can help to effect change—which we write about in the Global Nutrition Report 2015—is to identify “double-duty” actions. That is, actions that can combat both undernutrition and obesity/non-communicable diseases (NCDs) at the same time. Although the synergies in approaches have been debated for more than two decades, more work is needed to bring together actions that address both undernutrition and unhealthy diets in an internationally agreed-upon package. We identify four key areas for double-duty thinking and action:

- A set of political actions and strategies to motivate and enable nutrition-improving environments
- The development of food environments that support healthy growth by providing diverse diets throughout the life course
- Interventions in the first 1000 days after conception as well as during mothers’ preconception period
- Policy makers in countries around the world are facing unprecedented challenges in identifying interventions that can help prevent or reduce malnutrition in its many forms.
• The promotion of nutrition-friendly food systems

While the definitive list of double-duty actions must wait until after the evidence has been compiled and analysed, we can begin to hypothesise about what is, and what is not, a double-duty action. It should not be too difficult to identify such a set given that the causes of these two broad sets of malnutrition are similar—an interaction of poor diets and unhealthy environments.

Candidates include interventions that promote healthy growth in the first 1000 days post-conception such as the promotion of exclusive breastfeeding and infant and young child feeding programmes. These promote healthy length and height and emerging evidence suggests that they may prevent or delay the onset of nutrition-related NCDs. Other candidates include actions that improve food environments: whatever their nutritional risk, people need environments where diverse and healthy diets are available and affordable. Schools have a role to play here: can school feeding programmes improve diets today while teaching children about why balanced diets are important and how to choose them? Interventions in food systems can also play a role—such as boosting investment in the productivity and affordability of pulses, fruits, and vegetables and carefully managing investments in cheap sources of sweeteners.

Are there any actions, policies, and interventions for which the tradeoffs between different types of malnutrition are potentially sharper and where such a double duty is not possible? Again, we speculate, but fortificants added to highly salty or sugary foods might inadvertantly encourage the excess consumption of such foods. Policies that encourage meat consumption for those who consume too little may encourage too high a consumption for those with already high levels of consumption. Social protection programmes such as conditional cash transfers can help children go to health clinics and keep them in school but might inadvertently have adverse outcomes on adult body-mass index and diastolic blood pressure. Make no mistake about it, these interventions are very important for undernutrition, but they need to be managed to minimise the potential for overweight, obesity, and nutrition-related NCD risks.

We call on the Lancet journals to bring together researchers from across the nutrition spectrum to begin exploring this space and, with rigour, bring evidence to bear on these hypotheses. The process of doing that will be as important as the end result, signalling the beginning of the end for the extreme divide between the parallel research and policy worlds of undernutrition and overweight/obesity and nutrition-related NCDs. The data have moved countries into the reality of multiple faces of malnutrition—as the Global Nutrition Report 2015 points out, at least 45% of countries are facing undernutrition as well as overweight or obesity. We need to help policymakers address this “new normal” by identifying actions that serve “double duty”, addressing malnutrition in all its forms.
Hidden hunger is a global killer

Marc Van Ameringen

As we celebrate the achievements under the UN’s Millennium Development Goals and look to accelerate progress with the 2030 Sustainable Development Goals, a silent epidemic is afflicting more than a quarter of humanity—2 billion people—around the world. It accounts for 11% of the global burden of disease. This epidemic disproportionately harms young children and in some of its forms causes 1 in 5 maternal deaths. Unlike with climate change, cancer, or global conflicts, ending this epidemic is well within our grasp; in fact, the cure has existed for almost a century, and it costs pennies per person.

“Hidden hunger” is a new term for an age-old problem we know how to solve. It refers to the lack of access to micro-nutrients critical to proper physical and cognitive development. In the developed world, the simple practice of food fortification has integrated essential vitamins and minerals such as vitamin A, iron, iodine, and folic acid into diets invisibly, effectively, and on a mass scale. Nothing illustrates or makes the case better than the simplest of foods: salt. Since we began adding iodine to salt in 1922 and enriched other staple foods such as bread and milk, we have virtually eradicated many debilitating but preventable diseases, raised collective IQ, and provided a stronger foundation for healthy, productive lives.

Food fortification is a simple, cost-effective recipe that could improve the wellbeing of millions, yet too many countries are falling behind. For many in the international community, addressing malnutrition is a footnote to acute health crises such as food insecurity and the outbreak of diseases, yet the chronically malnourished more than twice outnumber the hungry, and 60% of children who die from easily treatable diseases such as malaria would survive with adequate nutrition. Vulnerable countries lose 2–3% of GDP to hidden hunger’s effects.

If we do not solve the problem of malnutrition, we will be unable to solve other pressing issues, such as poverty and child mortality. That’s why the Global Alliance for Improved Nutrition (GAIN), along with such partners as the African Union, the Bill and Melinda Gates Foundation, the World Health Organization, UNICEF, the World Food Program, and USAID came together to forge a strategy to eradicate hidden hunger, at the Future Fortified summit last month in Tanzania. But governments will need to do their part: credible and sustained political efforts critical to ending hidden hunger.

Every dollar spent on combating malnutrition yields US$138 in health savings and increased productivity, and food fortification is among the most effective public health investments the international community can make. For
example, fortifying flour with iron costs approximately 4 cents per capita annually, while treating iron-deficiency anaemia, which causes 1 in 5 maternal deaths, costs $7. Iodine deficiency, the leading cause of mental disability worldwide, can cause IQ to drop by 10 points, whereas iodising salt costs as little as 5–10 cents per person per year, returning $26 annually in increased productivity and health care savings. When these numbers are multiplied across the millions whose lives are uplifted by better health, the cost savings are enormous, and the benefits to human dignity and fulfilling every child’s potential are immeasurable.

Food fortification initiatives are underway in countries around the globe, and they’re working. More than 150 countries are implementing salt iodisation programmes, 82 countries have mandated grain fortification, and dozens more are fortifying edible oils, sauces, and condiments with needed nutrients. In Costa Rica, thanks to iron fortification, anaemia has been reduced by more than half. Incidence of spina bifida, a serious birth defect that causes paralysis, has been reduced by 30-5% in South Africa, thanks to flour fortified with folic acid. GAIN works with fortification programmes such as these in over 40 countries, and so far, we’ve been able to reach almost 1 billion people. But we have much more to do to make fortification universally available, especially for the poor.

If we are serious about ending hidden hunger, governments in the developed world need to ramp up support for fortification programmes, from ensuring staple food producers have easy access to micronutrient mixes to facilitating quality fortified food production to educating consumers about the benefits of choosing fortified foods and enabling the private sector to do its part. Evidence shows that making food fortification mandatory and vigorously enforcing quality and compliance is key to ensuring a healthier future for millions of people.

Broad demographic shifts, new technologies, and the globalising food system are opening avenues to universalise food fortification. Whether it’s iodising salt at the source in Senegal, which distributes salt to most of sub-Saharan Africa, or adding iron to staple condiments such as fish sauce in Vietnam, where half of mothers are at risk of anaemia, the end of hidden hunger is within sight. 90 years ago, the introduction of salt iodisation wiped out goitre and cretinism in parts of the USA and Europe, leading to improved school completion rates and a shift toward higher-paying jobs. With improved technologies and a globalised food system, all we have to do is step up to the challenge and commit to fortifying foods for all.

When combined with other critical interventions, such as promoting exclusive breastfeeding up to 6 months and continuing for 2 years and improving overall access to a diverse diet, especially for mothers, fortification contributes to a powerful recipe to tackle malnutrition. The tools have been in our hands for nearly a century; it is time we used them better.
Addressing climate change by promoting a clean environment in the developing world

Isaac Oriafo Ejakhegbe

The significant effects of an unhealthy environment are not just global, they are personal and its impact on our health interacts in several ways. While climate change has been well acknowledged as a global human health issue, for many of us who live in the developing world, we are equally faced with a huge burden of unhealthy surroundings owing to indiscriminate dumping of refuse.

Sanitation and hygiene are a cheap preventive public health measure. Yet each year, 0.6 million children under the age of 5 die of diarrhoea caused by poor hygiene and unsanitary conditions. Despite progress in human development, addressing filthy environments is yet to be given the needed attention on a global scale. We are just not talking about it enough to find a lasting solution. Even when hygiene and sanitation is being addressed by governments and developmental agendas, the focus is often on providing clean water and decent toilet facilities. Yet garbage dumping in public places, open refuse disposal in flowing waters, throwing empty cans around, etc, are still widely practised. The scenes shown here are but a glimpse of the extent to which our environment has been polluted in some developing nations. Unfortunately, too often, whenever I ask someone not to litter, I get a reply that since the surroundings are already dirty, throwing more trash won’t make a difference.

According to Grid Arendal, in addition to helping to save energy, waste prevention and recycling help address global climate change by decreasing the amount of greenhouse gas emissions. Most materials found on garbage heaps do not get recycled and some of the component materials emit greenhouse gases and contribute to global warming. Others contain harmful chemicals which pollute the environment and become breeding grounds for mosquitoes, rats, and flies, with consequent disease proliferation.

Although extreme weather and increased precipitation has been attributed to climate change, resulting in increased flooding, indiscriminate littering of surroundings is a major cause of blocked drainage in most developing communities, with resultant effect of flooding, the impact of which would be minimal by having clean surroundings.

While many people are still ignorant of the health consequences of indiscriminate littering of the surroundings, barriers such as inadequate refuse bins in private and public places, non-recycling of used materials, and a lack of leadership from governments are some of the hindrances to proper and effective refuse disposal.
In spite of the damages done and long silence in time past, huge hope remains. Awareness raising can be achieved by using old and new media as well as engaging youths, community, and religious leaders as change agents to attain the clean environment we all deserve.

However, government and charity cannot solve the problem alone. We need to make the clean-up of filthy surroundings in the developing world into a great business opportunity. Clear filth, build decent toilet facilities, go green, cut down green gas emission, and make the world a better place for everyone.
The far-reaching impact of strengthening primary health care

Suzanne Ehlers and Rosemary Mburu

With the launch of the new Sustainable Development Goals, health and development experts around the world are reflecting on what it will take to accomplish them. As a global community, this is a unique opportunity to think carefully about what works and what doesn’t, and to use the new goals to redouble our efforts to support programmes, solutions, and systems that work.

Providing sexual and reproductive health services in the context of primary health care is a long-established principle and practice. The 1994 International Conference on Population and Development (ICPD) Programme of Action called for ensuring access to reproductive health through primary health care. Similarly, a 2008 UNFPA publication stated that achieving progress towards sexual and reproductive health and rights depends on a strong and functional health system in every country, especially at the primary and first referral levels.

To fuel progress in global development, we need catalysts that cut across multiple challenges and support multiple development interests. There is a widespread understanding among decision-makers in low- and middle-income countries that high-performing primary health-care systems play that catalytic role. These systems are central to reaching global and country-specific goals, achieving universal health coverage, and meeting the majority of individual and community health needs before they become emergencies. A healthy population in turn sets the stage for gains in education, economies, and peace and security.

With respect to HIV, tuberculosis, and malaria, the 2006 Abuja Call for Accelerated Action Towards Universal Access called for the promotion and integration of access to prevention, treatment, care, and support in primary health-care services. High-performing primary health-care systems enable countries to maximise the impact of core investments in programmes to defeat these and other infectious and non-communicable diseases. For example, primary health-care systems can be the basis for the scale-up of essential HIV and AIDS services in hard-to-reach areas and among underserved populations.

Unfortunately, despite broad global agreement on the value of robust primary health care, there is not a simple recipe to achieve it. Domestic financing and country ownership are critical elements, and it is time for countries to set priorities and budgets that explicitly aim to strengthen primary health-care systems, complementing the efforts of donors. Civil society also has a key role to play, not only holding decision-makers accountable but also working with them to develop strong systems that can be reached by all.

To enact policies and budgets that lead to measurable primary health-care improvements, however,
decision-makers need better information about the components of high-performing primary health-care systems, particularly their poorly understood service delivery elements—such as the quality of care, and patients’ ability to access the system, and the degree of coordination among various care providers. A new partnership called the Primary Health Care Performance Initiative (PHCPI) seeks to address this gap in information, giving decision-makers the tools to adopt policies and practices based on evidence.

We are excited about PHCPI because it presents an opportunity for collaboration among diverse communities working to address other issues of global health and development. This is a chance to look ahead to where improvements to primary health-care systems can take us all in the future. We can rise above disputes over which health issues deserve the most attention, or what set of indicators gives us the best picture of a system’s health. We can harness data to make policy decisions about health care that are truly responsive to communities’ needs. We can unite around the opportunity to dramatically improve the health of millions of people by focusing on primary health care, the frontline of health in people’s communities.
Sights set on sexual rights in global culture wars: implications for health

Sarah Hawkes and Kent Buse

20 years ago the world seemed on the cusp of a revolution of sorts—it turned out to be more of a war. A war fought over women’s and men’s control over their own bodies and minds in the diplomatic and remote settings of various intergovernmental negotiations.

Meeting in Cairo at the International Conference on Population and Development (ICPD) in 1994, delegates proposed radical new ways of achieving sexual and reproductive health for everyone. Gone were the days of target-driven population control programmes with their emphasis on family planning and little else. Instead, an era of people-centred, rights-based, sexual and reproductive health for all was supposed to dawn. The Programme of Action called for the right to attain the “highest standard of sexual and reproductive health”—noting it was essential that countries should give “full attention... to meeting the educational and service needs of adolescents to enable them to deal in a positive and responsible way with their sexuality” and reaffirmed that “universally recognized human rights standards” should apply in achieving programme goals.

The past few years have seen a whittling away of those rights in many parts of the world through a war of attrition in different negotiations, including in follow up to the 1994 ICPD in the Commission on Population and Development as well as in the Commission on the Status of Women. While some people are lucky enough to live in countries that respect rights and offer the potential of equality for all consenting adults, a large proportion of the world’s population lives under state laws that prohibit any kind of sex before or outside of marriage, the selling or buying of sex, or sexual relationships between same-sex couples; in communities where child marriage is the norm; or in societies that prohibit the freedom to choose one’s marriage partner or to refuse to have sex within a marital bed.

Despite recent set-backs in intergovernmental negotiations, advocates and a coalition of “consenting” countries held out for more progressive global norms on sexual rights to prevail in the Sustainable Development Goal (SDG) agenda. Agreed on August 1, the SDG framework is considered the most important plan for people and planet for the next 15 years. The document reiterates universal upholding of “reproductive rights”, but there is no explicit mention of rights in relation to sexuality, sexual health, and comprehensive sexuality education. Early in the negotiations, a number of countries made it clear that there would be no room for discussions around “sexual rights”, including the right to access information about sexuality. Other countries supported them. The red line was certainly about sexual autonomy, but also a proxy for a wider conflict in the global war of ideas and values as well as of material hegemony. A conflict sometimes portrayed as a threat to cultural identity...
and return to western/northern imperialism and resistance to it—often for narrow domestic political reasons.

Opponents of sexual rights often frame the struggle in relation to a geopolitical agenda that promotes rights for homosexual people over the notion of the “natural” and “traditional” family, yet in practice such rights are much broader and carry more far-reaching implications, including implications for health. These rights, which are enshrined in international laws, include the "rights to non-discrimination, to privacy and confidentiality, to be free from violence and coercion, as well as the rights to education, information and access to health services" and they provide fundamental safeguards for everyone. Realising these rights means the right to determine not just who we want to have sex with, but the right to say when we don’t want to have sex; the right to decide whether or not we want to get married and who our marital partner should be; the right to bodily integrity (in essence, the right not to suffer from female genital mutilation or other harmful practices); and the right to seek and receive comprehensive sexuality education, among others.

These rights are based on the essential idea of free individuals having the information, education, capacity, and means to achieve a healthy sexuality. For all people, sexual rights (apart from access to sexuality education) are based on consent—and hence are limited to the age at which sexual consent is legally recognised. Moreover, these rights come with responsibilities—particularly the responsibility to respect and protect autonomy and wellbeing in our partners.

These are fundamental human rights which ought to be universally enjoyed, yet they no longer seem to be rights that the international community is willing to uphold in public or in the UN. The SDGs set an agenda to take us through to 2030, yet the process that gave rise to them has taken us back 30 years as far as the right to freely decide how we use our own minds and bodies as sexual beings.

The SDG document re-affirms our rights in relation to reproduction—but these represent only a small part of what it means to be a sexually healthy person, and certainly only represents a small proportion of the suffering and ill-health that is associated with unsafe, unprotected, and unequal sexual relationships. Last week’s announcement by the US Government of its official support for sexual rights as a “critical expression of support for the rights and dignity of all individuals regardless of their sex, sexual orientation or gender identity” will undoubtedly alter the geopolitical balance on the issue. Whether the salvo will harden opposition remains to be seen, but it will likely empower advocates. Meanwhile, the announcement of a new Lancet Commission on sexual and reproductive health and rights provides optimism that evidence on the extent of the burden of ill health and human suffering at stake will become more widely understood.

The UN High Commissioner for Human Rights reconfirmed the principle, adopted by the General Assembly more than 20 years ago, that rights are “indivisible and interrelated.” By picking and choosing which rights we are prepared to publicly stand up for, while revoking or repudiating others, we risk setting ourselves on a slippery slope to the erosion of all social, economic, political, and civil rights that humanity has fought long and hard to codify and achieve. We may not feel personally comfortable with the decisions some consenting adults make in relation to their own sexuality, but our collective failure to uphold these rights in full means they have not been explicitly enshrined in the most important agenda-setting document to have come out of the UN for the past 15 years. While the negotiators may be satisfied, international consensus will mean little to those people who suffer the collateral damage.
A bold new effort on neglected tropical diseases starts with water, sanitation, and hygiene

Margaret Batty

Neglected tropical diseases (NTDs)—including intestinal worms, Guinea worm disease, blinding trachoma, and schistosomiasis—are a diverse group of infections with tragic common denominators. With a few exceptions, they are infections experienced almost exclusively by the world’s poorest and most marginalised people, often in remote and rural locations, or in conflict zones. Now a new global strategy and action plan unveiled by WHO on August 27 in Stockholm, Sweden, during World Water Week, promises to bring faster progress to the more than 1 billion people affected by these diseases by incorporating the concepts of safe water, good sanitation, and hand- and face-washing with soap into other public health interventions to tackle NTDs.

It seems so simple, even obvious, that including these basic building blocks for health will be critical if we are to control, eliminate, or eradicate these terrible diseases by 2020.

We know that today, more than 650 million people do not have access to clean water and more than 2.3 billion do not have access to a basic, private toilet. Most, if not all, of the more than 1 billion people who suffer from NTDs are included in these numbers.

Making sure families have access to safe water for drinking, cooking, and washing, and ending open defecation, which spreads the parasites and bacteria that cause many of these diseases, helps stop transmission and makes treatments more effective.

Dr Maria Neira, WHO’s Director for Public Health, Environmental and Social Determinants of Health, said in Stockholm on the strategy’s unveiling: “Millions suffer from devastating WASH-related neglected tropical diseases such as soil-transmitted helminthiasis, guinea-worm disease, trachoma, and schistosomiasis, all of which affect mainly children. Solutions exist, such as access to safe water, managing human excreta, improving hygiene, and enhancing targeted environmental management. Such improvements not only lead to improved health, but also reduce poverty.”

WaterAid has been working since 1981 in some of the world’s poorest communities to deliver clean water. This year, we too embarked on a new strategy of our own, focused on making our work stronger and more impactful through strong leadership, active communities, a focus on sustainable work, equality, and integration between development sectors.

Joining-up doesn’t always come naturally to those of us in development—we are used to focusing on our own sector. Often health programmes targeting diseases focus...
more on medical intervention, rather than prevention. To be most effective we need to package these together. This strategy will help us improve joint efforts, and, most importantly, to target our work where it is needed most.

This year is a critical year for development—we are just 1 month away from the signing of new Sustainable Development Goals (SDGs) at the UN. These 17 goals, which aim to eradicate poverty and tackle climate change and inequalities, include one to reach everyone everywhere with access to clean water, sanitation and hygiene by 2030.

If we are to succeed in this and in other goals on health, education, and gender equality, development sectors need to work together to make sure the root causes of poverty and ill-health are addressed as a package. The SDGs are a challenge to the world to leave it better for the generations to come, and we will not succeed if we do not join important health interventions with prevention—ensuring communities have safe water for drinking, cooking, and washing, that human waste is handled hygienically with proper sanitation so that diseases are not further transmitted, and that good hygiene practice is both possible and carried out.

We know that this works. At a school in Ras Ze Sillasse School in Wolkitie, Ethiopia, teachers have told WaterAid that before a school water, sanitation, and hygiene (WASH) programme was installed in autumn 2014, trachoma and other serious eye infections were common among students. Now, however, students can wash more frequently and suffer fewer infections.

Eighth-grade student Tekalign Sahile, 14, has required eye injections and treatment for infection since he was 11. “My eyes need frequent washing. However there was either no water, or there were too many students waiting in line during the break. So I could not get to wash my eyes as frequently as I needed and it made things worse and affected my education. But now that there is water in the school and the 14 faucets spread out the queue a lot, I get to wash my eyes much more frequently than before,” he said.

In this case, the programme’s success has gone beyond the addition of a clean water source, handwashing facilities with soap, and new latrines. Inclusion of disabled students, and programmes that encourage students to take pride in and maintain these new services and take lessons on hygiene behaviour home, are also important if we are to tackle the spread of these diseases and help ensure the voices of those people affected are better heard in their communities.

This new WHO drive to tackle these difficult diseases affecting some of our world’s most vulnerable people will be an important tool in efforts to bring an end to this suffering, and create a fairer, more sustainable world.
Focusing on anaemia prevention in India: the road beyond Millennium Development Goal 5

Priya Shankar

Despite over 40 years of effort undertaken by the Indian government to target maternal anaemia, national trends remain stagnant. I visited India in order to understand why childbirth and levels of anaemia in India differ so markedly from many other parts of the world, as well as to explore what can be done to address it.

In India, anaemia is a common, yet widely neglected problem, with major consequences for the health of pregnant women, children, and adolescent girls. Over 55% of women and 70% of children in India suffer from anaemia and it is considered an indirect or direct cause of 40% of maternal deaths. Given its wide prevalence, tackling anaemia in India will result in major strides towards reaching and moving beyond the UN’s Millennium Development Goal 5, which focuses on curbing maternal mortality by three-quarters by the end of 2015.

Since 1975, the Indian government has targeted anaemia by providing iron folic acid supplements and routine prenatal blood tests to pregnant women. However, in spite of free supplementation, the uptake and distribution of these tablets and common knowledge surrounding anaemia is limited.

In the state of Rajasthan, where the maternal mortality ratio is 445 per 100 000 livebirths—one of the highest in India and the world—I met a young woman named Geeta who was 19 years old and pregnant with her second child. Through the government iron folic acid programme, she had received a total of 30 tablets, but so far had only taken one. When I asked her why, she described feeling nauseous after taking it and stated that she was afraid of getting sick from these tablets. She had not been educated about their importance or that taking them with food or at night could alleviate potential side effects. Geeta had a haemoglobin value of 64 g/L, an indicator of severe anaemia, which put her at risk of complications during her delivery.

I also found that diagnostic tools used for detecting and preventing anaemia were riddled by inaccuracy. Diagnostic testing in many villages of India is comprised of getting one’s finger pricked and having one’s blood colour compared with colours on a sheet of paper using the World Health Organization’s Hemoglobin Color Scale. In Rajasthan, where the monsoon months drench the countryside, I witnessed how the colours on the paper were often faded—leading to inaccurate diagnosis.

In one village, I met a teenage mother named Gauri who was 9 months pregnant with her first child. As I sat next to her, I noticed that she was jaundiced and could hardly walk due to fatigue. Gauri said that, through the government programme, she had received a haemoglobin test value of 115 g/L on two separate occasions. When she visited a...
hospital a few weeks prior to her pregnancy and was subjected to a more accurate haemoglobin test, her results read 74 g/L, a wide discrepancy from the paper-based readings she had had previously.

During Gauri’s delivery, she experienced significant blood loss, often a consequence of anaemia, and later did not interact with her baby due to weakness.

In addition, household to household, I met many young women who neglected their overall nutritional needs, who were the last to eat in their families, partook in strenuous physical and manual labour, and received inadequate sleep and rest during their pregnancy. All of these various factors contributed and compounded anaemia.

Through the voices of these women in Rajasthan, I became aware of an underlying, resounding theme: undernourished and anaemic mothers were delivering too young, with too little health and anaemia-related information.

Anaemia prevention and treatment initiatives also were targeting women when it was too late; after poor health related choices were deeply ingrained in a woman’s and her community’s mind.

In Rajasthan, and much of rural India, young girls tend to marry early and have children early. According to a UNICEF report, 56% of children marry before age 18 in rural areas, while the average age of childbirth is 19 years. Yet efforts directed towards adolescent girls have been minimally effective and prevalent, despite adolescence being a critical point of intervention. Particularly, the onset of menses and rapid growth can leave young girls at significant risk of anaemia.

While meeting and speaking with girls in several regions around Rajasthan, I found that they had very little general knowledge about what anaemia was, its causes, or consequences. Very few girls were receiving government-provided iron folic acid tablets through their schools, and many were already participating in poor dietary and work-related practices that could pave the way for a high risk pregnancy.

It became very clear that the next step in redefining the current state of anaemia resides in targeting young girls before they reach pregnancy. Through a preventative, school-based model we can teach girls about anaemia and its detrimental consequences on health, the importance of iron folic acid supplementation and ways to avert potential side effects, and the importance of overall nutrition in future pregnancies. Many community-based pilot studies have already demonstrated the impact of education, and we must now adopt a more national, school-based approach.

Although anaemia is a pervasive problem in India and across much of the world, it can be addressed through thoughtful interventions that recognise the weaknesses of current models and invest in early detection and prevention. This means getting rid of old protocol and policies that are failing, investing money into more accurate diagnostic tools, and most importantly, cultivating holistic educational interventions focused on adolescent girls.

Through such efforts, India can meaningfully reduce its maternal mortality rate and make strides beyond UN’s Millennium Development Goal 5.
Advancing today’s training and tomorrow’s outbreak preparedness: the importance of innovation

Nicholas Mellor

New cases of Ebola virus disease in Liberia, alongside the ongoing outbreak in Sierra Leone and Guinea, have re-emphasised the many challenges faced by the region. Currently there is an unprecedented amount of training being carried out, but is it any better or more sustainable than before the outbreak? Curricula and guidelines have been closely shaped by international experts and Ministries of Health, yet can these bodies ensure such procedures are implemented accurately?

National training programmes have been beset by a range of challenges that include coordination between multiple organisations often working to very different timeframes and governance structures; the speed with which they can be rolled out; engagement and incentivisation of trainees; cost and particularly the opportunity cost of taking people away from providing care; and fidelity and coherence of the training they deliver.

Training in an emergency setting is challenging and it has often been remarked that emergencies are no place for innovation. However, the UN Mission for Ebola Emergency Response (UNMEER) recognised that innovation is key to finding more effective and efficient approaches. In April 2015, the Paul Allen Foundation hosted an Ebola Innovation Summit meeting, drawing attention to the importance of using 21st century tools in the response to the outbreak, specifically for supporting local capacity building and the emergency infrastructure.

IBM’s report Education for a Smarter Planet: The Future of Learning highlights a number of revolutionary opportunities that have opened up in recent years, in particular immersive learning experiences arising from distributed simulation. One such innovation has been developed by the Masanga MENTOR Ebola Initiative (MMEI)—a partnership between infection prevention and control specialists, the Masanga hospital in Sierra Leone, and the Mentor Initiative operating in Liberia. The initiative drew on the experience of remote health and safety training in the oil and gas industry, the advice of experts in technology-enhanced learning and medical simulation from Plymouth University Peninsula Schools of Medicine and Dentistry (PUPSMD), and a team of software developers, animators, and graphic artists from four continents. Throughout the development process, the team liaised closely with the west African infection prevention and control task forces, national ministries of health, the US Centers for Disease Control and Prevention, and WHO. Video conferencing between this international team and those in west Africa enabled these teams to work seamlessly with frontline trainers to co-create the training material using an agile approach to development, ensuring its relevance and useability.
The result is eBUDDI—a virtual classroom that uses avatars, near peer teaching, gamification, and continuous feedback, helping trainees work together as a team and even work their way through potentially hazardous scenarios. Being graphical, without words, it can be adapted to reflect different cultures and languages so that it is easily understood in the local community—even if the users may not be able to read. Being digital, it can be made accessible to frontline health workers across a wide geographical area, either by broadband or USB stick. The digital format allows immediate adaptation to changing guidelines and continuous improvements in the design, and data on how it is used can be collected as part of quality assurance.

The growing availability of digital devices, including smartphones, means that eBUDDI has been designed to run on laptops and tablets—together with an app for smartphones that can act as a reminder for safety-critical procedures such as correct handwashing or donning a face shield. All this has only become possible with the recent advances in communications, pedagogical innovation, and animation to create a virtual learning environment, but it builds on many pioneering initiatives over the past decade.

The Call to Action for Ebola Innovation held during the International Ebola Recovery Conference by the UN this month once again highlighted the importance of innovation, of which the use of distributed simulation in west Africa is an exemplar. The call concluded: ‘with the recent resurgence and possible second wave of [Ebola virus disease] in west Africa, the Ebola crisis needs innovative solutions more than ever to apply the strategic and innovative use of 21st century tools and technology both in emergency response and early and long term economic and social renewal’.

So far eBUDDI has been trialled in Liberia and Sierra Leone, showing a significant increase in knowledge and confidence of those that have used it. This virtual learning platform is one of a number that shows that innovation is possible even in a crisis, and that we can tap into expertise and experience from social networks as easily as institutional networks.
Eradicating polio from Nigeria

Hamid Jafari

Today marks 1 year since Nigeria’s last reported case of wild poliovirus disease. It is a remarkable achievement and moves the world much closer to being polio-free.

It is all the more remarkable as Nigeria was for years the global epicentre of the disease. It is from here that virus spread repeatedly to cause outbreaks in polio-free countries across the world. In the global effort to eradicate the disease, Nigeria stood for years as one of the greatest hurdles.

Concerted efforts, led by the hard work of the Nigerian government, partners, religious and community leaders, application of lessons learned from the successful effort in India, and—most importantly—health workers, transformed the effort over the past several years. Children, no matter where they lived in the country, including in insecure areas, were reached with the lifesaving polio vaccine. We commend this commitment and hard work, without which this progress would not have been possible. At the same time, however, we must urge for continued vigilance and commitment. Because the job is not yet done.

Firstly, although it has been 12 months since the onset of paralysis in the last patient with wild poliovirus in the country, final laboratory results from all cases of acute flaccid paralysis (AFP) and environmental samples for the full 12 months are not expected until September. These samples must be fully tested in order to provide additional confidence to the absence of wild poliovirus. Continued intensification of surveillance remains key to mitigating the risk of undetected poliovirus transmission which can lead to a sudden resurgence of polio.

Secondly, at least 2 more years must pass without a case of wild poliovirus before Nigeria—along with the rest of WHO’s African Region—can be officially certified as polio-free.

And thirdly—and most importantly—everything must be done to protect children from all forms and sources of poliovirus, until the disease has been eradicated everywhere in the world. Too often have we seen spread from remaining infected countries, causing devastating outbreaks in areas where the disease had already been wiped out. Pakistan and Afghanistan—both endemic for the disease—might seem like a long way away. But poliovirus can travel great distances, and it is very efficient at finding susceptible children, no matter where they live. At the same time, Nigeria continues to be affected by an ongoing outbreak of circulating vaccine-derived poliovirus. And although this strain is not the wild poliovirus, it nevertheless poses a public health risk, it nevertheless paralyses children, and it must be fully stopped.

Nigeria, along with all countries in Africa, must maintain high-quality surveillance for both wild and vaccine-derived poliovirus to enable a rapid outbreak response. Vaccination campaigns must be strengthened to ensure the threat of circulation is minimised, especially in remote, hard-to-reach, and insecure areas where the threat of resurgence is high. Routine immunisation must be strengthened to ensure there is no chink in the armour to let the poliovirus back in.

Nigeria stands on the threshold of being polio-free. We congratulate its leaders on this tremendous progress and urge those same leaders to redouble their efforts, to ensure that the country successfully steps across that threshold, into a lasting polio-free status. It will be an unparalleled public health success in Africa. No child across Africa will ever again be paralysed by any strain of poliovirus.
Tobacco taxation: to curb the tobacco epidemic, governments need to step up their efforts

Douglas Bettcher

2015 marks the 10th anniversary of the entry into force of the WHO Framework Convention on Tobacco Control (WHO FCTC). The Convention, the only UN treaty negotiated under the auspices of WHO, was a landmark achievement for global health and huge advances have since been made in global tobacco control.

In 2008, WHO, with the support of Bloomberg Philanthropies, launched the MPOWER best-buy measures, in line with the demand-reduction articles of the WHO FCTC, to provide countries with effective and efficient tools to counter the tobacco epidemic. The policies (Monitor tobacco use and prevention policies, Protect people from tobacco smoke, Offer help to quit tobacco use, Warn people about the dangers of tobacco, Enforce bans on tobacco advertising, promotion and sponsorship, Raise taxes on tobacco) are proven to be impactful and cost-effective.

The 5th WHO report on the global tobacco epidemic, released today, tracks the successes of these best-buy policies worldwide.

Increasing tobacco taxation—the focus of the 5th WHO report—has been proven to be the most effective and efficient of the MPOWER measures in combating the tobacco epidemic. There is strong evidence confirming that higher tobacco taxes and prices lead to significant reductions in tobacco use. What is more, these reductions are larger in low- and middle-income countries than in higher-income countries. Contrary to popular assumptions (which are reinforced by the lobbying efforts of the tobacco industry), tobacco taxation is in fact a progressive taxation measure—ie, it does not penalise the poor.

Yet despite the proven success of tobacco taxation as an effective public health measure and revenue stream for government, tobacco tax remains the least widely implemented of all MPOWER measures worldwide.

Raising taxes can in general be a politically sensitive issue, which can lead to reluctance from the leadership to implement such measures. However, studies have shown that public opinion is broadly in favour of taxing cigarettes. It is not pressure from the public, therefore, that is dissuading governments from increasing their tobacco taxation measures. Rather, the pressure against tobacco taxation comes largely from the tobacco industry and its allies.

We have long known that the tobacco industry fights hardest against the measures that are the most effective. It
is no surprise, therefore, that the tobacco industry is working so hard against tobacco taxes. The industry sits behind such groups as the International Tax and Investment Centre, an international advisory group which promotes tax reform, to lobby against tobacco taxation in the areas where the industry stands the most to lose from decreased consumption. The growing economies of Russia, India, China, and Indonesia, are the most common targets, with Africa (where tobacco use is currently still low) coming increasingly under fire. What is more, it has also been reported that the US Chamber of Commerce works on behalf of tobacco companies to fight tobacco control measures globally.

Article 5.3 of the WHO FCTC argues for all countries to create a ‘firewall’ to protect the creation of public health policy from conflicting commercial interests of the tobacco industry.

Countries need to fast-track their implementation of the WHO FCTC and the supporting MPOWER demand reduction package, whilst ensuring that such policies are free from the interference of an industry with direct conflicting interests. The burgeoning threat of non-communicable diseases (NCDs) stands to compromise the future prosperity and development of countries. We need to tackle the growing burden of NCDs in order to safeguard our future global development.

The post-2015 development agenda, to be adopted by world leaders at the UN General Assembly in September this year, will include a more inclusive definition of development than that 2000–2015 Millennium Development Goals did. NCDs, which constitute one of the major challenges for development in the 21st century, stand to be incorporated into the overarching health goal to ensure healthy lives and promote wellbeing for all at all ages. This is a prime opportunity to accelerate domestic and international action to implement the WHO FCTC in all countries during the next 15 years and to reduce premature mortality from NCDs.

The Sustainable Development Goals (SDGs) are ambitious; they set out a joint vision for our global development. But with united political will, they could be achievable. Implementation of best-buy measures such as tobacco control and tobacco taxation must be the cornerstone of the global response to support countries in attaining the SDGs by 2030.

While tobacco use may not grab global headlines in the same way that the immediate threat of infectious diseases does, it cannot be passed over. If we are to end poverty in all its forms everywhere and ensure healthy lives for all, we must recognise the impact that tobacco has on development, as one of the world’s leading preventable cause of death.

This is a joint post with Vinayak Prasad, a Project Manager in WHO’s department of Prevention of Noncommunicable Diseases, and Emily Wymer, a Consultant for the same department.
When losing track means losing lives: accountability lessons from the Ebola crisis

Aria Grabowski and Erin Hohlfelder

As the intensity of the west African Ebola outbreak begins to wane (albeit with new cases still emerging in all three heavily-affected countries), many in the global health community have begun the process of learning lessons from the crisis. For some, this has meant an examination of the WHO and global health architecture; for others, it has meant focusing on the importance of health systems strengthening; for others still, it means learning how to deliver services on the ground in more nimble, culturally-sensitive ways. Yet one worthy subject that has received less attention is that of accountability for resources.

When a disaster occurs—be it an earthquake in Nepal or an outbreak in Guinea—governments, private sector actors, and institutions respond with the promise of millions or billions of dollars, as well as medical workers, supplies, and logistical support. These promises are often essential for stemming a crisis and mitigating deeper catastrophe. However, keeping track of them can be an arduous task, making it difficult to explain what ultimately happens to pledges made and to hold actors accountable for delivering outcomes on the ground.

In response to the Ebola crisis, a number of entities—each with varying mandates—began to track humanitarian aid flows and, in some instances, in-kind commitments. Among others, the UN Office for the Coordination of Humanitarian Affairs’ (OCHA) Financial Tracking Service (FTS) added Ebola to its list of humanitarian crises, the World Bank set up a system to track pledges, and the UN Special Envoy for Ebola hired consultants to produce reports on overall resources for Ebola. Still, there was not one comprehensive place to monitor the quantity and quality of monetary and non-monetary pledges being made, so the ONE Campaign created an online, interactive tracker to highlight a broader range of activities represented by donors’ pledges. ONE’s tracker focused initially on those countries where we knew the governments well, but we added more countries, foundations, and other donors as information became available. However, we faced limitations that inhibited our ability to get a comprehensive, clear picture of the global response.

Developing our Ebola tracker taught us a clear lesson: the tools we have today for tracking resources in a crisis are not fit-for-purpose. While in many instances it is possible to find information about one category of a donor’s pledge, there is no “one-stop-shop” that donors, implementers, and the public can use to reliably understand, measure, and compare what amounts and types of resources have been pledged, what resources that have been disbursed, and what gaps remain unfilled.

Inconsistent reporting by donors
One of the most basic questions asked during a crisis is “how much have donors promised to this effort?” In the case of Ebola, this question has been incredibly difficult to answer. With respect to cash-based pledges, the amount an individual donor reported frequently varied depending on what source to which they were reporting. For instance, as of the end of April 2015:

- Four different figures for German pledges and/or contributions were publicly available on four different sites: FTS, the UN Special Envoy, the World Bank, and ONE’s Tracker. These amounts varied by almost US$100 million—likely resulting from differences between the websites’ inclusions, definitions, and processing cycles, and the government’s reporting variations.
- Switzerland’s total funds noted for the response on FTS’s website declined as time went on, and the amount that Switzerland reported to the World Bank was only about a quarter of what it reported elsewhere.

Some discrepancy in these and other cases could be attributed to varying definitions of what “counts” as a pledge—either from the donor’s own perspective, or from the vantage point of the various tracking mechanisms. At any point in time, donors might point to language passed into law, a press release, an official’s statement, or reporting by the financial arms of their many agencies. For example, it was unclear the extent to which the USA’s $5.4 billion Ebola supplemental authorisation should be tracked as an official pledge, given that breakdowns of the funding were not fully decided, nor were the appropriation of those funds for west Africa guaranteed.
An additional reporting challenge came in the form of non-monetary pledges. It makes sense to give donors credit for these important contributions, but reflecting them consistently raised questions: should all in-kind donations be monetised? Who decides what contributions are worth? Should the cost for the transportation of in-kind supplies or personnel reallocation be monetised or left as un-monetised in-kind donations? These questions frequently played out as donors rushed to fill gaps. As part of its reported monetary pledges, China included about $30 million in in-kind supplies; the USA and the UK included military costs; the Danish and Dutch included the costs of vessels used to transport in-kind supplies, but not the cost of the supplies themselves.

Finally, donors are sometimes unwilling or unable to report accurately on their actual disbursements (ie, paid contributions) instead of commitments (ie, contractual obligations). Donors’ aversion to reporting on disbursement is somewhat understandable, given the time lag between the completion of work and funds being paid. Disbursement, however, is the only way to measure monies spent and work performed rather than simply promised or obligated, so it is a necessary indicator for understanding the full picture of a response.

In many cases, the refusal or inability to report on disbursed resources further muddled global efforts to look across countries and compare performance. For example:

• China reported being unable to provide the amount of its funds disbursed, so it simply reported all of its pledged funds.
• The European Commission’s system is not adequately set up to track disbursed funds, so they reported funds obligated by law, which, by the end of April 2015 very closely reflected their pledge.
• Australia reported returning funds to its government coffers (even as new Ebola cases were emerging in the region).

The unwillingness to report disbursed amounts suggests that not all money pledged is actually being spent, or that it takes too long to pay bills for work that is done, or that donors simply have not taken time to follow up and report. If the obstacles to disbursing funds are so large that donors cannot quickly mobilise funds, it emphasises the need for an international public health emergency fund and/or insurance scheme that is rapidly deployable, such as the one called for at this year’s World Health Assembly, or a Pandemic Financing Facility.

Limitations of resource-tracking mechanisms

Although existing reporting mechanisms serve valuable roles in tracking data, they also face significant limitations that further impede the world’s effort to understand pledges and commitments. All existing financial tracking mechanisms are reliant on donor self-reporting; given the challenges noted above, these systems frequently perpetuate reporting inconsistencies, even while giving the appearances of a standardised dataset.

Additionally, a wide variance in the mechanisms’ mandates for what to track and report led to further confusion. FTS, for instance, is designed to track only the humanitarian response to a crisis, but donors frequently made parallel pledges outside the traditional humanitarian realm. Such pledges included longer-term development assistance, investments in research and development, and bilateral contributions directly to affected countries—much of which may not be reflected in FTS or other existing tracking mechanisms, based on their remits. If modern crises—health and otherwise—require a multifaceted and multiphased response, the world should adapt its accountability mechanisms to reflect that reality. In order for FTS or others to carry out these functions, however, would require significant expansion of mandate, capacity and political will from donors.
A final, considerable shortfall of existing tracking mechanisms—including ONE’s Tracker—is that they are not built to follow the money pledged through to project implementation. Even if such a system existed, it is also unclear whether donors would report in sufficiently disaggregated detail so as to allow for nuanced analysis. As a result, donor accountability efforts described here are only half of the full effort needed necessary to ensure impact for resources pledged.

**Recommendations**

Ebola has shed new light on the challenges of financial accountability in a crisis, but these challenges are not new. Analysis of past crises, such as the 2004 Indian Ocean tsunami and the 2010 Haiti earthquake, reveals remarkably similar challenges in tracking how much money was pledged and where it ended up.

In order for advocates to have data that will allow them to hold donors accountable for their promises, there must be a globally accepted tracking system that can collect and provide unambiguous information. Such a system should include the following features:

- A more robust online infrastructure to ensure accurate, consistent information across multiple, distinct categories of assistance;
- Upfront financial investments to ensure proper upkeep of the system;
- Clear, generally accepted definitions for all reporting categories of assistance, including anticipated types of in-kind and recovery-oriented contributions;
- A larger number of staff, with increased capacity for identifying inconsistencies across donors and rectifying them—or at a minimum who are able to flag for public record where inconsistencies exist; and
- Ideally, the ability to follow the money to the end recipients on the ground, accounting not just for the funding’s receipt but also for its use.

At the same time, a system is only as good as donors’ willingness to supply it with good information. Therefore, donors must:

- Commit the political will to ensuring any new or modified tracking system with an expanded tracking mandate has buy-in from their governments;
- Honestly and accurately provide both commitment and disbursement amounts instead of just commitments, while also agreeing to a clear, consistent definition of disbursement;
- Report humanitarian assistance in an open format to the standards established by the International Aid Transparency Initiative (IATI), so that project-specific spending can be tracked; and
- More generally, abide by ONE’s “TRACK principles”, making commitments that are: Transparent; Results-oriented; Clear about which resources are additional and which have any conditions; and most importantly, Kept. Rather than a dry accounting exercise, getting clarity about aid flows and holding leaders and implementers accountable for delivery should be appreciated as a matter of life or death. If we don’t know what has been promised and what has been delivered, we can’t adequately match promised resources to needs on the ground. That means gaps cannot be easily identified, and time lags will result in more lives lost. Confusion over pledges makes it difficult to hold donors accountable, which may leave millions of promised funds unspent. Conversely, better understanding what donors have disbursed will give advocates clearer grounds for full-throated praise of those who have stepped up and made impactful contributions.

This year we have an unprecedented opportunity to change the dynamic of poor accountability, data gaps, and lack of transparency:

- On July 9–10, the UN will host an Ebola Recovery Conference. Undoubtedly, commitments made there will be wide-ranging, but any effort to ensure the world is better prepared in the next crisis should address the need for improved financial accountability
- At the 3rd Financing for Development (FFD) Summit in Ethiopia on July 13–16, ONE and partners will push for strong commitments to donor transparency and for investments in mapping and filling data gaps—all as part of the wider “data revolution”
- At least four high-level panels or initiatives are already underway, tasked with learning lessons from the crisis and making concrete recommendations for the future. These include the UN Secretary General’s High Level Panel, the WHO’s independent Ebola Interim Assessment Panel, the US Institute of Medicine’s effort to create a Global Health Risk Framework, and an Independent Panel on the Global Response to Ebola. We are encouraged that at least the Institute of Medicine effort will look at financial accountability and hope that others will also take up this topic.

Ultimately, if the existing mechanisms do not change to more consistently hold donors accountable for their pledges, there is a real risk that promises could continue to be unfulfilled without any real consequence. Until we can urgently resolve this challenge, we are doomed to repeat our collective mistakes, and lose time, resources, and lives in the next crisis.
Health financing reforms for controlling non-communicable diseases in LMICs

Ranu S Dhillon and Robert Yates

Controlling non-communicable diseases (NCDs) has become a central priority for low- and middle-income countries (LMICs) where 80% of deaths from NCDs already take place and prevalence is likely to rise. It is for this reason that NCDs will be a major focus of the Sustainable Development Goals (SDGs) that will be adopted later this year. Thus far, the discussion on tackling NCDs has focused on food and tobacco policies and delivery reforms needed in LMICs where few providers are trained to manage these conditions and health systems are not designed to provide continuity of care. However, most LMICs also have health financing policies at odds with the incentives needed for efficient NCD care. Several reforms are needed in order to bring these health financing systems in line with the demands of this growing disease burden.

A large proportion of health care in LMICs is financed privately through user fees charged at the point of care and some use of voluntary insurance. With acute communicable illnesses, patients experience overt symptoms (e.g. fever) and an improvement with treatment that is readily apparent. This clear linkage between illness and care compels patients to value treatment and willingly seek it, even if they must pay (assuming they can afford to). In contrast, NCDs, such as hypertension and diabetes, cause only subtle symptoms that, without proactive screening, can remain undetected until complications occur. For example, a patient can have high blood pressure for years and not know until they experience a stroke. This can cause patients, especially in LMICs where awareness of NCDs is limited, to overlook the importance of the preemptive and frequent care that NCDs require and avoid these encounters if they have to pay for them. This is analogous to the steep reduction seen in willingness to use preventive measures for similarly insidious infectious diseases, such as intestinal parasites, when even nominal fees are introduced.
Additionally, in the current health financing systems of many LMICs, payments to health providers are made through fee-for-service charges or fixed supply-side allocations from public budgets to government health facilities. For NCDs, these approaches discourage long-term risk management and interventions less contingent on billable commodities, such as adherence support, while perversely rewarding costlier treatments needed during complications. Fee-for-service arrangements also pose challenges for the coordination of care across providers that is critical for managing NCDs. For example, efforts by primary care providers to preemptively manage conditions go against the financial interest of the specialists and hospitals with whom they must liaise for complicated cases. Similarly, insurance schemes that cover only inpatient services, such as the RSBY program in India, provide no incentive for coordinating care with outpatient providers after discharge and offer patients no financial protection against the costs of ongoing medications.

Controlling NCDs in LMICs requires several health financing reforms. First, the deterrence created by point-of-care fees must be eliminated for the screening and maintenance care crucial for NCD management. On the contrary, conditional cash transfers could be considered to ensure people take up these services. Second, NCD care should be financed through progressive mandatory prepayments, such as tax financing or social health insurance. Mandatory contributions are important for achieving the large, diversified risk pools needed for cross-subsidizing high-risk cases with healthier patients. In addition, if contributions are not made compulsory, many people without apparent symptoms would be reluctant to join and only do so after complications arise, creating adverse selection. Third, payments to health providers must utilise efficient purchasing strategies, such as bundled, capitated, or results-based payments, that incentivize the coordination of long-term care across different providers and also incentivize behavioral and lifestyle interventions. Notably, these health financing approaches—elimination of point-of-care fees, mandatory prepayments, and efficient purchasing—mirror reforms recommended for establishing universal health coverage (UHC), another health priority likely to be incorporated in the SDGs.

Controlling NCDs in LMICs will be one of the defining health challenges of the post-2015 era. Alongside food and tobacco policy and health care delivery reforms, LMICs will need to reshape their health financing systems to facilitate efficient management of NCDs.
Fossil fuels, development and health: should global health institutions divest?

Alistair Wardrope

As G7 leaders announce their intention to achieve “decarbonisation of the global economy over the course of this century”, at last there seems to be acknowledgement that ending our carbon addiction is needed for a stable and healthy climate. And as WHO Director-General Margaret Chan made clear in an address to the summit, the human health cost of the current global energy system should further motivate action. Some within the health sector argue that we can promote this transition by ending investment in the fossil fuel industry; others reject this call, alleging that fossil fuels are needed to bring millions in emerging economies out of poverty. Given these conflicting imperatives, how should the health community respond?

Anthropogenic climate change—previously described in The Lancet as “the biggest global health threat of the 21st century”—is already having profound effects on human health, from the direct toll of heat waves and natural disasters, to downstream impacts such as crop failures exacerbating conflict and worsening mental health. The WHO already attributes some 250,000 deaths annually to climate change, a figure they readily admit is likely to be an underestimate. To avoid surface temperature increases over two degrees centigrade, it is thought that as much as 80% of the world’s known coal, oil, and gas reserves must remain unburned.

The burning of fossil fuels also affects human health more directly—most strikingly through air pollution, responsible for 1 in 8 deaths globally in 2012, but also through their influence on transport and agriculture, and through the occupational risks involved in their extraction and processing.

The fossil fuel ‘divestment’ campaign—advocating for investors to sell their shares in companies that are involved in the extraction or combustion of fossil fuels—argues this situation provides a clear moral imperative for the health community to sever its financial ties to the fossil fuel industry. They draw a parallel with tobacco divestment, widely held to have been integral to the tobacco control movement’s successes. This comparison is made all the more pertinent as ‘Big Oil’ has inherited ‘Big Tobacco’s’ playbook of science and policy subversion, using the same tactics—and often the same institutions and researchers—in their efforts to discredit climate science and undermine environmental legislation.

Additionally, proponents for fossil fuel divestment argue that the move is financially prudent, arguing that carbon-intensive companies are likely to become ‘stranded assets’ in light of increased regulation of this demonstrably harmful industry.
Health workers’ groups worldwide have come out in support of divestment, gaining increasing profile recently with The Guardian newspaper’s ‘Keep it in the Ground’ campaign calling on the Wellcome Trust and Bill and Melinda Gates foundation to divest. Opponents, however, argue that divestment fails to acknowledge the apparently essential role that fossil fuels play in driving growth, “the best guarantor of better health”, in less-industrialised nations.

This argument, however, famously made by climate contrarian Bjorn Lomborg, mistakes a historical accident for a physical necessity. While it is true that fossil fuel exploitation has driven the development of industrialised and emerging economies, less-industrialised nations now have the opportunity to ‘leapfrog’ them with renewable energy infrastructure. Renewables are better placed to bring the health benefits of energy access, particularly for the 84% of communities lacking energy living in rural areas where grid expansion is prohibitively expensive.

Where fossil fuels do seem cheaper, it is often only due to the vast subsidies they receive from governments internationally—a regressive expenditure that exceeds global spending on health care. Coal’s unpaid health bill now costs China 4% of its GDP. And of course, any health improvements from development will fail to materialise if that development is undermined by a warming world, the health impacts of which will hit the poorest hardest.

Divestment campaigns are not going to bring an immediate end to the use of fossil fuels; by selling off shares in a secondary market they probably won’t even directly affect the ‘bottom line’ of polluting companies that they target. What they can do, however, is undermine the social licence of those companies to dominate the energy market and policy landscape, stigmatising the business practices of those threatening the world’s ability to mitigate the worst excesses of climate change. It was in this way that divestment contributed to reigning in the tobacco industry and to bringing down the Apartheid regime in South Africa. And that is why it is so important for the health community to respond to the call to divest; health workers and researchers have an influential voice in public discourse, and are uniquely positioned to argue the health co-benefits of transitioning away from the high-carbon status quo. In contrast, by remaining invested in the fossil fuel industry they are quite literally betting on ‘business as usual’, and signalling indifference to policy decisions that will have unprecedented effects on health and wellbeing globally.
Take it to the community and stop epidemics where they start

Caitlin Gillespie

The 2014–2015 Ebola outbreak that killed over 11 000 people was an unprecedented epidemic tragedy. As countries pick up the pieces, a central truth emerges—that external solutions did not match local needs. A virus does not strike in an organized, top-down fashion—the health response cannot function this way either. As UNICEF said, “the battle against Ebola...will be won at the heart of the community”. Epidemics strike the community first. And the community must be the first to stop them.

Treating the health system like building blocks we can place at will is a mistake. In real life, and in real time, people are what make up the health system. Effective epidemic preparedness and response must include community members in both planning and action.

Communities are People

Outbreak interventions came largely from external leaders with one-directional ideas. As these initiatives disseminated, they failed at the community level. Why did this happen?

Ebola spread because responders treated communities like objects. Official interventions were tainted with disregard for traditional culture and lack of empathy. Locals were not treated as the free agents they are, with individual values and behaviours.

Misperceptions therefore abounded. When health workers donned hazmat suits for protection, locals saw them as strangers in spacesuits kidnapping their families. Yet health officials never paused to discover these perspectives.

As the epidemic raged further, distrust ignited community behaviour that exacerbated Ebola’s spread. Locals not only refused aid, they rebelled against it. Crowds vandalized facilities and attacked Red Cross health workers. They hindered prevention efforts by hiding infected colleagues, lying to contact tracers, and smuggling corpses away in the night. WHO estimates that 80% of Sierra Leone’s cases were spread by local defiance of safe burial mandates and traditional burials.

Communities became the “enemy” of the Ebola response instead of the solution. The “us” and “them” mentality wasted human resources by pitting communities and officials against each other instead of working together.

For epidemic prevention to succeed, communities must be actively engaged, not just issued orders. Responders forgot the human behaviour aspect of outbreak response. Humanitarian response means working with people, not manipulating equipment—and people have free will. This freedom can either help or hinder health response.
We had better learn from history before the next outbreak hits.

**Recommendations**

**The Community Is the Health System**
The Ebola response divided the population into two silos: interveners and recipients. This segregation of health workers and the community blocked understanding and collaboration.

In reality, the community is the health system. Community members like Community Health Workers are essential to health care. Community Health Workers were the most effective at contact tracing because of their local connections. This trust enabled successful infection prevention.

Non-medical professionals also contribute to the health system. Bus drivers and teachers educated communities through door-to-door campaigns. In Monrovia, individuals bought rubber boots to perform their own public information operation.

But these successes were too few. Community-level initiatives need government and donor involvement to be brought to scale. It takes a whole society to fight an outbreak.

**Listen first**
When President Johnson Sirleaf implemented a quarantine in West Point, residents rioted and a child was killed. But when Dr Clement, WHO county coordinator, instituted no-contact policies in Lofa, locals happily complied. Why were these locations so different?

In Sirleaf’s intervention, police ordered the community to follow a prescribed policy solution. Despite good intentions, people did not understand the reason to comply and their objections were not heard. In contrast, Dr Clement approached local leaders upon arrival and asked their perspective. He listened first before intervening.

Dr Clement’s response worked because he learned the recipient’s values. Listening first enabled him to tailor his intervention and generate trust. With empathy, initiatives will be adopted and amplified.

**Plan Together for the Future**
The need to strengthen epidemic preparedness is clear. However, the way it is done is equally vital. Communities and central leaders must plan together to build trust from the start.

When the health system integrates community needs, the community makes the health system more effective. Because of cooperative planning, when a future outbreak hits, officials will have pre-established lines of communication to spread the word. Locals will cooperate with officials because they designed the policies together.

WHO states, “when technical interventions cross cultural practices, culture always wins.” To prevent another tragedy from occurring, we must integrate culture into health policies—before the outbreak begins.

Planning together ensures a more effective epidemic strategy. This way, we will save more lives in the future.

**Conclusion**
In this outbreak, communities saw kidnappings and fearsome strangers. Responders saw unnecessary local antagonism. Neither could discover the others’ perspective. This segregation allowed Ebola to spread like wildfire.

Going forward, community representation must be hardwired into the health system. Let’s start today engaging with communities—our front lines of epidemic response.
Profile of a Commissioner: behind the scenes of the Lancet Commission on Global Surgery

Lifebox Foundation

Following the launch of the Lancet Commission on Global Surgery last week, it’s fair to say that global surgery will never be the same again. This is both a mission statement and a fact: the Commission has produced dozens of research studies which erase the old numbers and reveal just how acute the surgical crisis is. It also puts forward a strong commitment to address the challenge.

More than 5 billion people lack access to safe surgery and anaesthesia. This is disproportionately the case for low-resource settings, where the most basic of ‘S’s—staff, stuff, space, systems—are critically limited. Where surgery does take place, it can be unsafe.

The Commission’s landmark report took more than a year to develop, with the words and work of people across 111 countries. At the centre are 25 Commissioners: experts in surgery, anaesthesia, nursing and health economics, with hundreds of years of combined experience across high and low-resource settings.

Iain Wilson is one such expert: consultant anaesthetist, a past president of the Association of Anaesthetists of Great Britain and Ireland (AAGBI), and trustee of Lifebox Foundation, a global NGO working to make surgery safer.

Lifebox caught up with their trustee at the end of a busy week for global surgery, to get an insider perspective on a paradigm-shifting year.

What drew you to make safer surgery and anaesthesia such an important part of your career?

During my 35 years as an anaesthetist I have seen and read about many patients who could have had better outcomes from their surgery and anaesthesia in different parts of the world. For a patient who has come in for surgery to develop a complication that could have been avoided is tremendously sad.

I think it is a doctor’s responsibility to minimise this wherever possible, and the organisations I’ve worked closely with over the years—the AAGBI, WFSA [World Federation Of Societies of Anaesthesiologists] and Lifebox—have promoted safety and enabled many improvements.

What’s the most important message you take away from the Commission findings?

For me, the most important thing is the number of people who can’t have surgery and anaesthesia when they need it—5 billion, much higher than we previously thought.

But as part of this, we’ve drawn attention to the fact that ‘access’ is a very multi-faceted aspect of healthcare. It’s not just about proximity to a hospital—it’s also the staffing, the resources, and if that person can even afford treatment. There are also issues around skilled nursing care, and post-operative monitoring. Not all people who suffer complications, or even death, do so in the operating room.

Where does safety fit in to the question of access to surgery?

Safety is a key part of accessing care—the Commission actually refers to access to safe surgery and anaesthesia. Many people haven’t been aware of the relative risk of having procedures done, where some of the fundamental principles of safe care such as a trained provider, sterile practices, availability of blood and appropriate equipment such as oximetry in the operating theatre are not present.
We do know in some parts of the world, where conditions are very difficult, that anaesthesia is associated with a very high mortality. So in these places, if you go into hospital to have a caesarean section or an operation of some sort, your chance of dying from the operation itself is high. Clearly that’s not a solution that can be seen as acceptable.

**What do you hope that the Commission will achieve?**

It’s in the very name of the Commission—we’re raising awareness of the lack of access to safe surgery and anaesthesia care where it is needed. For many years, healthcare—quite correctly—has concentrated on eliminating or controlling diseases that were communicable in nature. Now there’s a growing acceptance that surgery is a low-cost intervention, especially for things like congenital diseases and C-sections.

These operations are not expensive, but they are very efficient in terms of the illness they relieve. I think the commission makes that point. And as the World Health Assembly votes on a resolution to support access to essential surgery this month, the report will inform policymakers and donors of the nature of what we need to start to achieve.

**Lifebox is an NGO working to make surgery safer. How is the Commission relevant to their work?**

Lifebox and the Lancet Commission go hand in hand. Lifebox has number of projects, and the most substantial work we’ve done so far is in helping hospitals in low-income countries to access pulse oximeters and training.

In better-off parts of the world we’ve had almost 30 years of pulse oximetry in clinical practice, but it’s lacking every day in many poorer hospitals. Through Lifebox we’ve been able to access a low cost, highly reliable oximeter, and we’ve distributed more than 9000 units in more than 90 countries.

This is the monitoring most associated with cutting complications from hypoxia during anaesthesia, and it features in the report as a safety marker for operating theatre equipment.

Lifebox is also committed to encouraging the use of the WHO Surgical Safety Checklist by all theatre teams—a low cost, highly effective tool for making surgery safer.

**Did the Commissioners work well together?**

Everyone played an important role within the writing of the Commission. It took an enormous amount of expertise due to the complexity of the Commission. It needed a multidisciplinary team, including clinicians, economists and politicians—those who really understand how to describe healthcare issues as seen by national health systems and NGOs. It’s a remarkable group of people, and I was delighted to be a part of it.

**What were some of the challenges?**

I think the biggest challenge was for those in the writing team in pulling together such a well-written and balanced document in an amazingly short time. Since we all wanted to keep adding to it, keeping it short enough was a real discipline! There is also a lot of supporting evidence published separately on-line within the Commission, which gives more of the background information about our work.
Clinical marvel, financial failure: the tragic tale of sofosbuvir

Anand Bhopal

Chronic hepatitis C has been a notoriously difficult condition to manage. In recent years, however, the situation has changed dramatically. The advent of highly effective direct-acting oral antivirals, most notably sofosbuvir (Sovaldi), has ushered in a period of great enthusiasm for hepatitis C control, and even elimination: hepatitis C has been solved! If only. Instead, affordability of medicines has reared its head once again. The 19th WHO Model list of Essential Medicines, released on May 8, 2015, includes sofosbuvir among other direct-acting antivirals. WHO should be supported by the global health community in order to make this ambition a reality; sofosbuvir represents a challenge for all nations, rich and poor alike. This is a tale of big pharma, big money, and poor access to lifesaving drugs: discomfortingly familiar and with a particularly unsavoury twist.

The story begins in 1998 when research scientists Dr Raymond Schinazi and Dr Dennis Liotta set up Pharmasset, a small US-based company, which focused on developing anti-viral medications. The company developed a novel oral hepatitis C drug, then known as PSI-7977, which showed huge promise, and led Gilead Sciences to acquire Pharmasset in November 2011—for $11 billion. This was an unprecedented outlay, especially since the drug was still in phase 2 clinical trials. Yet a little over 3 years later—and after only 12 months on the market—sofosbuvir had recorded global sales worth $10·3 billion; it is now on track to become one of the most profitable drugs of all time.

Revenue is predominantly generated from the USA where sofosbuvir retails at $84 000 for a standard 12-week course. This sort of price is generally the preserve of orphan diseases, in which R&D costs must be recouped from a relatively small pool of patients. Yet 130-150 million people across the world have chronic hepatitis C, including 3·2 million people in the USA. It is therefore far from a rare disease and most relevant patents don’t expire for another 15 years.

Given these figures, one could expect an appeal to the rising cost of developing drugs—now said to be up to $2·6 billion (albeit challenged by of MSF, among others). Yet, sofosbuvir does not appear to have been an expensive drug to develop. The total R&D outlay is estimated to be $300–500 million, or perhaps less. Even the drug manufacturing costs, another plausible reason for high product cost, are thought to be around $1·60 per pill—a 600x mark up on the USA label price. No, the price is high for altogether different reasons.

The reality seems to be that Gilead Sciences took an $11 billion punt when they acquired sofosbuvir; now they need their investment returned, and clearly want this with interest. Risk should be reasonably rewarded in global health (several mechanisms have been proposed) but surely only when it leads to the development of new products, and not simply when it bets correctly on a speculative investment in a company which has already developed a drug. There is a certain irony that, like many drugs, sofosbuvir began life in university laboratories (Cardiff University, UK, and Emory University, USA), funded at least in part by the same governments which are now struggling to pay the prices set. Gilead made this investment of its own volition, yet it is ultimately now citizens who have to pick up the tab.
Particularly in high-income nations, the demographic of people infected with chronic hepatitis C are poor and marginalised, such that the state has to pay for the cost of treatment. For many people in middle-income countries even under generic licensing agreements, tiered prices offered by Gilead still remain unaffordable. India refused to grant a patent and there are also ongoing patent challenges in Europe; affordability is of high concern across world. However, patent challenges aside, there is a distinct interplay exemplified in this case between affordability and cost-effectiveness. This is crucial to understanding why commentators such as Jeffrey Sachs can claim that sofosbuvir is “bankrupting America” and why there has been resistance to the introduction of sofosbuvir elsewhere. The UK offers an interesting case study.

The English technology appraisal body, NICE, recently recommended sofosbuvir as cost-effective (in terms of cost/QALY gained), for use in the National Health Service. Negotiations with Gilead have reduced the procurement price by a third, compared to USA market rate; however, this remains a difficult cost to absorb at a time when the whole health budget is being squeezed. Furthermore, as health economists such as Karl Claxton have argued, recommending expensive treatments within a limited national health-care budget will impact health provision elsewhere in the system; at the detriment of “those unidentified NHS patients who bear the true opportunity costs of NICE decisions”. The same goes elsewhere in the world—within a finite budget, prioritisation has to occur; hence, the cost of medications directly influences the ability to provide health services for all. This case has great relevance for drug appraisal bodies across the world.

Sofosbuvir represents an expense even the wealthiest countries are ill able to afford—access to drugs can no longer be viewed as a low-income nation problem. This case can be used to unite citizens across the world, helping to reel in the situation whereby lifesaving drugs are bartered like stocks and shares. Ultimately, hepatitis C is no longer an elusive research problem, but a socioeconomic and political challenge.

Gilead Sciences have maintained a position that hepatitis C prices are justified on account of clinical benefit and future savings to the health system. This abject focus on cost-effectiveness, over access and affordability, obscures the debate at hand; it shifts responsibility and public discontent from Gilead, for setting high prices, to governments, for rationing access to treatment. Gilead has chosen a path of profit maximisation ahead of revolutionary health gains which innovations such as sofosbuvir could—and should—provide. Indeed, sofosbuvir appears in many ways a prime candidate for the Health Impact Fund. What can be done to ensure that the benefits of such innovation are reaped within the public domain, at affordable costs?

This is a time for great optimism for hepatitis C control; however, all people, including the beneficiaries of sofosbuvir, should continue to challenge the circumstances that have allowed the sofosbuvir story to unfold as it has. This case highlights the best that pharmaceutical research can achieve, as well as the ease with which human achievement can be tainted by conflicting interests. Inclusion on the WHO Essential Medicines List is an important step—sofosbuvir remains a clinical marvel, but it is also a financial disaster for national health-care provision, and a harbinger of troubles ahead.
Viva La Vulva

Laura Gallop and Rebecca Carroll

In March 2014, the first public prosecution for female genital mutilation (FGM) was carried out in the United Kingdom. The case involved Dr Dhanuson Dharmasena, a junior registrar in obstetrics and gynaecology, who was accused of performing FGM on a woman after she had given birth. The doctor was acquitted and the case itself was widely criticised; however, an important issue was highlighted. The judge presiding over the case deemed that Dr Dharmasena was “badly let down by a number of systematic failures which were no fault of his own”. One of which, as Dr Dharmasena stated himself, was that he had not received any formal training about FGM, either as a medical student or as a doctor. The future generation of doctors must learn from this case and ensure that they are adequately trained in this field in order to do the best for their patients.

Female genital mutilation (FGM) consists of a variety of procedures that remove or damage the external female genital organs for non-medical reasons. FGM has no health benefits and can potentially cause many serious short-term and long-term health problems. These include pain, infection, complications in labour, infertility, pain and loss of sensation during sex, and psychological damage.

WHO estimates that 100–140 million women and young girls have been victims of FGM around the world. Although this practice is predominantly carried out in Africa and Asia, women all over the world are affected by it. In the UK an estimated 137 000 women are living with the consequences of FGM and 66 000 children and young women are at risk. Doctors are in a unique position to identify those at risk of undergoing FGM and help the women and children who have been affected by referring them on to services that may be beneficial to them (eg, the African women’s clinic and paediatric FGM clinic at University College London Hospital). It is also our duty to safeguard girls at risk of FGM, which is a form of child abuse. As medical students and future health professionals in the UK, we felt it was imperative to learn how to support survivors of FGM and identify girls at risk.

A group of University College London medical students, with the help of some doctors and nurses with experience in the field, set up a student society, Viva La Vulva. Since forming last autumn, we have been involved in several projects to raise awareness of this issue in the UK. We recently audited doctors and nurses in a London Accident & Emergency department to assess how knowledgeable and confident they were at identifying and discussing FGM. Of 51 doctors and nurses surveyed, we found that only three felt confident with classifying different types of FGM. Additionally, not one of the clinicians had referred a woman to services available to them at the hospital. Most lacked knowledge of these services altogether, reinforcing our belief that more education is required to improve clinical care. One of the clinical fellows working with Viva La Vulva led the development of an online training module for staff (a freely accessible module is available here). Use of this online module is encouraged by Health Education England and its completion may become mandatory for all health-care workers in England and Wales.

In order to increase students’ confidence in broaching FGM during clinical consultations we are also creating a set of clinical skills videos featuring an FGM survivor which Teaching communities about FGM/C

For more information about Viva La Vulva (Facebook) https://www.facebook.com/vivalavulvaUCL; (Twitter) https://twitter.com/vivavulva
will demonstrate how to approach the topic sensitively. We hope that this will empower students to raise the issue with patients.

We are also currently delivering a teaching programme on women’s and sexual health in a local college on topics including FGM. We created a series of lesson plans and teaching resources ourselves, which were then used to deliver the lessons. We wanted to not only provide basic knowledge on the subjects covered, but also to provide a platform for critical discussion which encourages students to draw their own conclusions. With many of the students originating from countries with a high prevalence of FGM, we feel that education at this level is the right starting point to help empower young girls to say no.

Removing FGM from standard cultural practice requires a grassroots led, bottom-up approach. Engagement of health professionals working alongside communities has an important role—we encourage others to join us, alongside millions of others, in efforts to end FGM.
Diseases of poverty: shrinking the map on malaria, NTDs

Mirta Roses Periago and Silvio Martinelli

Less than a decade ago, the city of Dajabón in the Dominican Republic (DR) shouldered a high burden of malaria, reporting 989 cases in 2007 alone. That number has dwindled over the years, due in large part to support from partners, better diagnostic tools and more targeted interventions. In 2013, only 60 cases of malaria were reported. What’s most exciting is that this kind of progress is not limited to just Dajabón or the DR at large. On World Malaria Day, we have an opportunity to spotlight these inspiring stories and the tremendous gains made at the global and regional level in the fight against this deadly yet preventable disease.

Globally, we have seen malaria deaths fall by 47 percent between 2000 and 2013—an achievement that no doubt reflects the strong political will and investments from international donors and endemic countries alike. These funds have enabled the scale-up of insecticide-treated bed nets and other critical malaria interventions, helping to save an estimated 4.3 million lives. Additionally, 55 countries are on track to reduce their malaria case incidence rates by 75 percent, in line with World Health Assembly and Roll Back Malaria targets for 2015.

To see how this has played out across the Latin American and Caribbean region, we can look to the dramatic drop of malaria cases in the region—down to 427,000 cases in 2013 from 1.2 million in 2000. Argentina is the first country in the region in over 40 years to request World Health Organization (WHO) certification for malaria elimination—reporting zero cases since 2011. We are thrilled to see Argentina take this final step, after years of determination, and look forward to celebrating this milestone. Several other countries in the region, such as Costa Rica and Paraguay, are not far behind.

In 2013, Health Ministers rallied together, committing to eliminate malaria by 2020 and achieve certification by 2025 in ten countries: Belize, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua and Panama.

Inspired by the dedication of people winning the epidemic on the ground and determination of the countries, the Global Fund, alongside many other partners, including the Pan American Health Organization (PAHO), invested $10.2 million in an innovative regional initiative called Eliminate Malaria in Mesoamerica and the Island of Hispaniola (EMMIE). It is intended to catalyze progress in these ten countries, leveraging the Global Fund’s existing investments in some of these countries.

We are proud that through a previous malaria Global Fund grant and current support through EMMIE, the Centro Nacional de Control de Enfermedades Tropicales (CENCET) of the Dominican Republic was recognized as one of the top Malaria Champions of the Americas in 2014 for its outstanding achievements in reducing the burden of malaria.

A major part of the Dominican Republic’s success can be attributed to their integrated vector management system towards elimination of local transmission; utilizing evidence-based approaches, targeted interventions, intersectoral and cross border collaboration. These efforts had a simultaneous impact of reducing the burden of lymphatic filariasis (LF) and controlling dengue, two mosquito-borne neglected tropical diseases (NTDs). These diseases are a group of 17 parasitic and bacterial diseases that share a high burden in many malaria-endemic countries.

This success story brings attention to how efforts to eliminate malaria can also help reduce the burden of NTDs, which impact the most marginalized and vulnerable populations. For instance, reducing mosquito bites by using insecticide-treated bed nets and indoor residual spraying...
is proving to be an effective way to keep people safe from both malaria and LF.

Other regions have also seen the benefits of integrating malaria and NTD interventions. Nigeria, which is heavily endemic for both malaria and lymphatic filariasis, recognized integration as a viable strategy and launched national guidelines for tackling both diseases. In addition, neighboring Togo has nearly eliminated elephantiasis by using Global Fund resources to implement integrated strategies to fight malaria and lymphatic filariasis together.

As we take stock of these successes and look for sustainable ways to shrink malaria’s global footprint, we are reminded that there are opportunities to expand our reach and impact through integrated approaches.

These unprecedented global health milestones prove that eliminating malaria and diseases like lymphatic filariasis are not unrealistic or unattainable goals. Hispaniola, which includes the countries of Haiti and the Dominican Republic, is the only remaining island in the Caribbean where malaria is endemic. By working together, we can help demonstrate how elimination of malaria and NTDs in the Americas can serve as an example for other regions battling these diseases.
Holding universities accountable for their role in advancing biomedical research which addresses neglected health needs

Rachel Kiddell-Monroe

Commercially driven drug development has rapidly become incompatible with the needs of society. While people in West Africa are still in need of a vaccine to protect them against Ebola, the most promising vaccines will not be ready in time for this epidemic despite the fact that Ebola vaccines have been sitting on shelves for over a decade untested on humans. Further, the global scourge of increasing antimicrobial resistance and the ever-escalating prices on new cancer and hepatitis C medications are reflective of a research and development (R&D) model that simply is not delivering.

In late 2014, Tufts University estimated the average cost for private sector drug development between 1995 and 2007 to be $2.56 billion. This is a grossly over-estimated figure inflated by millions of dollars worth of failed trials. Yet, already drug companies have started to reference this in an attempt to justify the arbitrary and often astronomical pricing of patented medicine.

In October last year, Margaret Chan, Director General of the WHO, declared, “the R&D incentive is virtually non-existent.” It is only when governments and society perceive themselves to be directly threatened, as was the case with Ebola, that the inherent conflict and wrongheadedness of leaving the development of medicines, essential public goods, in the hands of private industry, becomes glaringly apparent. Only now are we beginning to see a growing consensus among patients, clinicians, civil society, and politicians that we need to develop an R&D system that focuses first on people not profit.

Given that between one quarter and one third of new medicines originate in a university lab, pharmaceutical companies are increasingly relying on universities to do early stage creative research which effectively turns publicly funded research into privately owned profit. The social mission of academic institutions allows them to use public resources to serve and strengthen society. Our universities can, and should, be challenging this profit-driven system using their unique leverage to both propose and implement solutions to create a patient-centered R&D system.

UAEM. It serves as an advocacy tool for universities to assess their own progress in investing in innovative medical research that addresses global neglected health needs, as well as focusing on the core role of universities in terms of transforming innovation and access for all. In 2013, UAEM found that less than 3% of university funding in the US and Canada was focused on ‘neglected diseases’. Although neglected diseases (such as chagas, sleeping sickness or leishmaniasis) affect one in six people worldwide, those people are virtually ignored by the current profit-driven R&D model and by our socially-mandated and publicly-funded universities.

UAEM will be launching its second University Report Card on April 21, 2015. The organization has made efforts to respond to constructive criticism of the first version. The name of the Report Card has been changed to clarify its focus, and it now addresses the number of neglected disease research publications by each evaluated university. The new version also includes an expanded empowerment
section measuring how universities are educating the next generation of global health leaders and also has a greater focus on intellectual property issues.

The University Report Card is not intended to critique individual academic commitment to global health or to target university faculty specifically. Its focus is as an advocacy tool for students and faculty alike to draw attention to, and hold administrations accountable for, neglected areas within global health equity and biomedical research.

It is high time the ineffective R&D model is replaced with a new, open and collaborative biomedical research ecosystem. The University Report Card seeks to play a role in moving towards that goal by initiating a dialogue with and between universities. We are pleased to see how many universities and research institutions have responded to this second University Report and are taking part in finding new and impactful ways to support improved global health outcomes worldwide.

This blog was co-authored with Merith Basey (Executive Director, Universities Allied for Essential Medicines), Warren Kaplan (Clinical Assistant Professor, Global Health Center for Global Health & Development, Boston University School of Public Health) and Alexandra Greenberg (Report Card Student Team Leader, Universities Allied for Essential Medicines). With special thanks to Jessica Farber.
Aboriginal health and the rise of racism in Canada

Chris Simms

Are Canada’s 1·3 million Aboriginal people being deliberately or inadvertently discriminated against by a government overly concerned about its resource development strategy? However counter-intuitive the question is of a nation widely seen as tolerant (and that ranks 7th of 132 countries on the Social Progress Index), it’s being asked by Aboriginal people wary of more policies that exclude and control.

Recent studies show a rise in discrimination against Aboriginal people such that Canada may have a worse race problem than the USA; racism pervades the health system and is highly correlated with poor outcomes. Indeed, astonishing public health images of First Nations communities confirm health outcomes on par with many poorer countries, worsened by epidemic levels of depressive and behavioral disorders. These are associated with the inter-generational impact of an abusive assimilation program known as the Indian Residential School (IRS) system (1880–1996) in which 150,000 children were taken from their families and forced to attend ten months of every year.

In 2006, new reasons for discrimination emerged. A newly elected Conservative government launched a $600 billion development plan for the oil, gas, mining, and pipeline industries with many of its initiatives on, or near, aboriginal traditional lands. In a departure from the past, aboriginals began to fight back with increasing success by accessing the courts, holding public demonstrations and forming alliances with non-Aboriginal interest groups.

Government responses to First Nations’ initiatives have been swift and harsh. Carried out by a worrisome combination of those who make the laws and those that enforce them, this approach portrays Aboriginal people as the main barrier to Canada’s resource development and its future prosperity. Especially striking is that these responses constitute the opposite of common discrimination-reducing strategies—tackling inequalities, increasing public information, building coalitions, and collective action—and therefore seem systematic and purposive.

Four strategies thwarted

One means of marginalizing (and promoting racist views) is “victim-blaming”, that is, making victims appear responsible for the circumstances in which they find themselves. The federal government has fought hard to withhold IRS documents showing government-sponsored medical and nutritional experiments on the children, the use of electric shocks on the recalcitrant, and an astonishing 3000 onsite child deaths at the residential schools. Despite pleadings from First Nations leadership, Canadian Archivists and the Commissioner of Truth and Reconciliation Commission (TRC), the government has stymied full access to IRS documents; when 40,000 IRS abuse victims finally gave recorded testimony to the TRC, the government turned to the Courts for permission to destroy this very evidence.

Similarly, pleadings by Canadian and international scientists for data on existing and new disparities (particularly those related to the oil sands) have been ignored by the Harper government. As to inequalities themselves and the notion of creating a more level playing field, the government has been stone-faced, responding instead by cancelling a 5 billion dollar Federal Accord and, over recent years, cutting most Aboriginal-led health programming meant to address the sequelae of the IRS.

Another discrimination-reducing strategy, extension of group boundaries, was embraced by First Nations who
began to form high-profile alliances with a host of well-respected environmental non-governmental organizations (NGOs). Among its responses, the government publically engaged the Canada Revenue Agency (CRA) to conduct extensive audits on their records based on the notion that they were too political. The Minister of Finance unabashedly warned, that if he were one of these groups “I would be cautious”. What he did not say was that the CRA—which will launch an investigation in response to public complaints—received formal filings from Ethical Oil (an online activists group working in defense of the oil-sands development) whose founder, is currently the director of issues management in the Prime Minister’s Office.

Aboriginals also took collective action as an obvious discrimination-reducing option. The First Nations and Family Caring Society (headed by Cindy Blackstock), filed legal claims against the government for failing to provide adequate healthcare to Aboriginal children; the government had the Royal Canadian Mounted Police (RCMP) and Canadian Security Intelligence Service (CSIS) place her under surveillance, gathering a 400 page file on her in the process. The Federal Privacy Commissioner condemned these actions, ordered the agencies to cease and destroy the files. Similarly, reports released this month show that these two agencies are proactively monitoring aboriginal peaceful protest groups in expectation of demonstrations against resource extraction projects.

Indeed, critics are questioning the professionalism, non-partisanship and closeness of these agencies to industry that is so detrimental to aboriginal well-being. They ask of CSIS: why are they producing these intelligence reports on protest activity they acknowledge is legitimate and outside their mandate? Revelations of a 44 page RCMP memo this month identifying Aboriginal protesters as the political fringe while extoling the virtues and inevitability of the oil sands and repeatedly casting doubt on global warming. Past revelations that these agencies are sharing information with industry and that the watchdog overseeing them was led by industry lobbyists lend credence to these worries.

An evolving polity points the way forward
As to a way forward, the government may wish to take a step back now that the oil market has partially collapsed, towards a more balanced and less frenetic approach to economic development. The polity is evolving. While ordinary Canadians may not yet perceive the plight of Aboriginal people as a top priority, they are nonetheless uncomfortable with the persistence of the Indian Act of 1886 (the only race-based legislation in a Western democracy), the requirement that Aboriginal people have an identity card and their disenfranchisement by the so-called Fair Elections Act (having only gained the vote in 1960). They are embarrassed by the quality of public discourse: by Mr Harper’s assertion to the G20 that “Every nation wants to be Canada...We also have no history of colonialism”, by a former acting Minister for Indian and Northern Affairs claim that it isn’t the government’s job to make sure children have full bellies—then asking “Is it my job to feed my neighbour’s child? I don’t think so”. In contrast, provincial and territorial governments have signaled a desire to tackle at least some of the inequalities related to First Nations grievances. The courts have increasingly handed First Nations victories related to resource development, suggesting consultation and dialogue are the way forward for the federal government. It ought to realign its strategic planning and management with core Canadian values; better lean than mean.
Preparing for zoonotic surprise

Victor Galaz

Humans are fundamentally shaping the face of planet Earth. Is it possible to prepare for the ever-lingerling possibility of large-scale epidemic surprise that such changes bring? Victor Galaz, of the Stockholm Resilience Centre, argues that scenario approaches, at the very least, may be able to shed light on the complex processes at play in determining disease risk.

Global environmental change—including climate change—is likely to affect human health in multiple ways and through multiple pathways. In some cases, pathways are short and largely predictable, such as the links between climate, extreme weather events and human health. In other cases, though, indirect effects play out through long causal chains that propagate through ecological and human systems in complex ways.

Such complex interactions often also result in “surprises”—situations in which the behaviour in a system, or across systems, differs qualitatively from expectations or previous experiences. Examples of surprises include future challenges to food security, the risks entailed with forced environmental migration and zoonotic disease emergence and re-emergence—the latter being of particular interest to me and my partners in the Dynamic Drivers of Disease in Africa, an ESPA-funded multidisciplinary research consortium considering the linkages between ecosystems, zoonoses and health. Phenomena such as these are not only uncertain, but they also tend to spark intense academic and political debates. The still on-going Ebola outbreak serves to illustrate this.

These indirect effects are not only of academic interest. On the contrary, they are critical in an era in which human action drives changes at planetary scale in ways that modify critical Earth system processes and known drivers of zoonotic disease emergence, evolution and transmission. Both policy-makers and scholars need to take Anthropocene disease risks seriously.

The limits of modelling

One common approach to explore future disease risks is quantitative modelling. Models such as these are becoming increasingly sophisticated, and play a fundamental role in policy-making. However, despite their sophistication, models are always limited. They are bound by their assumptions
and methods for addressing uncertainty. And, as Melissa Leach and Ian Scoones have explored for H5N1 avian influenza and Ebola, how policy-makers perceive (or ignore) these unavoidable assumptions have very tangible policy implications.

One way to approach the issue is to acknowledge the need for multiple models and multiple ways to explore uncertainties and possible futures. This is something we were keen to try in the Drivers of Disease consortium—our work is presented at www.diseasescenarios.org. It builds on bringing together the best available, locally grounded and multidisciplinary expert assessments on possible disease futures for the four emerging or re-emerging zoonotic diseases in five diverse ecosystems that we are looking at: henipavirus infection in Ghana, Rift Valley fever in Kenya, Lassa fever in Sierra Leone and trypanosomiasis in Zambia and Zimbabwe.

Insights into complexity

Scenario approaches come in different forms and shapes, and have their own limitations of course. But in our case, it has provided a tool to bring together deep insights about the complex social-ecological drivers of zoonotic disease from not only different disciplines, but also multiple countries. As such, they work as a tool to facilitate what some have denoted “radical innovation” in interdisciplinary teams, as well as a tool to communicate complexity and uncertainty to an interested policy audience.

Sophisticated macro-models will, and should, continue to play an important role in the global health community’s attempts to explore future zoonotic disease risks. However, understanding Anthropocene disease risks will require more than large datasets, statistical ingenuity and massive computing power. It will also require abilities to combine multiple knowledge systems, multidisciplinary innovation, and well-developed communication skills. Scenario approaches of all kinds need to become one of the most important tools in the global health community’s toolkit as we move into a turbulent future.

Listen to a podcast of Victor Galaz interviewed about the scenarios approach.
Ebola: most unnatural of disasters

James Shepherd-Barron

We are surrounded by natural hazards, and a zoonotic disease of epidemic potential is only one in a list that includes earthquakes, landslides, tsunami, and hurricanes. When hazards like these collide with poverty and human indifference, disaster normally ensues. The eruption of the Ebola virus from the jungles of Kenema in early 2014 was no different. Here was a naturally occurring biological hazard which superstition, fear, fragile health systems, poor leadership, and dysfunctional management spent much of 2014 turning into a global crisis. It did not have to be like this.

At the end of 2012, a comprehensive multistakeholder “lessons learned” report was put together by the UK Department for International Development (DFID) and published by the Sierra Leone Ministry of Health. It used the evidence of that year’s cholera epidemic to outline actions to take to integrate “outbreaks of communicable disease of epidemic potential” into national risk reduction strategies.

During the last week of July and the first week of August 2014, DFID-Sierra Leone used this report and what was then known of the Ebola outbreak to point out to the President, the Minister of Health, WHO’s country representative, the donor community, international non-governmental organisations, and the UN Country Team what they felt to be shortcomings in the Ebola response. At these meetings, DFID made it clear that, in their view, this was no ordinary outbreak; that it was unlikely to be contained as previous Ebola outbreaks in Uganda and the Democratic Republic of Congo had been; and that it should be seen for what it was, a large-scale, slow-onset natural disaster requiring an international multisectoral response at levels similar to those mobilised for the earthquake in Haiti in 2010 and for Typhoon Haiyan in the Philippines in 2013. It was even pointed out that this was not a question of political, but of national, survival.

The shortcomings were only too evident:

The national Ebola Operations Centre established to manage the extensive control measures required consisted of little more than some flip-charts, only one with paper, and a pile of ink-less pens on a dusty table. There was nothing to show that this small room was an “operations centre” for anything, let alone an unfolding national calamity.

Terms of reference for key responsibilities did not exist, despite templates and standard operating procedures being in the 2012 cholera report.

Despite repeated requests to the US Centers for Disease Control and Prevention and Public Health England—both of whom were present in the country—predictive ‘epi-curves’ were not made available to disaster planners for fear that the data were not sufficiently robust. Once again,

If someone you know is sick with fever, diarrhoea, or vomiting, call for help from healthcare workers. Do not keep a sick person at home. It could be EBOKA. For more information call 119 (Toll free).

MARCH 24, 2015 • EBOLA VIRUS DISEASE • POLICY
the pursuit of scientific perfection stymied rapid disaster response.

Situation reports issued by the Ministry of Health were less than useful in informing the outside world of what was going on. Lack of international oversight meant that the statistics could be deliberately manipulated to paint a better picture than was actually the case. This politicisation was as much a function of power dynamics as it was of weak paper-based surveillance systems, incoherent case definitions, or insufficient laboratory diagnostic capacity.

Daily coordination meetings routinely descended into farce. Neither the Minister nor the coordinator had the experience or training in how to manage a multisectoral, multidisciplinary international disaster response operation. That WHO did nothing to deal with this lack of capacity demonstrated, at best, a total lack of understanding of the complexities involved in coordinating disaster responses at scale. Stepping aside in favour of those with more appropriate knowledge and experience is no disgrace, and should be the default in such situations. Such teams should be sourced from the Health Cluster, not necessarily WHO.

A declaration of what the UN calls a Level-3 Emergency on the recommendation of the UN Country Team in Freetown would have seen the scaling-up within days of those complimentary non-medical public health functions so crucial to effective outbreak response in the sectors of water, sanitation, hygiene promotion, education, food security, logistics, telecommunications, social mobilisation, and protection. But, despite being recommended, this didn’t happen until months later. As was explained to the UN Country Team at the time, it was as if humanitarian reform and the cluster approach had never happened. Building the capacity of WHO’s emergency response capability—as some donors are now doing—without fundamental structural reform along the lines outlined by Bill Gates in the New York Times recently will do nothing to reduce the risk of future biological disasters around the world.

As has been said before, learning by dying is not an option. The recommendations outlined in Sierra Leone’s 2012 cholera report should be taken into account when learning lessons from the Ebola crisis, and these lessons should be applied as part of an integrated national strategy for disaster risk reduction. Evading our responsibilities to the people of Sierra Leone at this crucial moment when Ebola operations are scaling down must not allow history to repeat itself.

The author is an independent management consultant and disaster epidemiologist. He was sent by DFID to Sierra Leone in July 2014 as a ‘special adviser on Ebola’ to the Minister of Health. This post is his personal account and does not necessarily reflect the views of the people or organisations referred to.
UN sustainable development goals: improve health through clean water

Mamadou Diarafa Diallo

Next week, on the heels of World Water Day, the UN’s permanent representatives are negotiating the shape of the new Sustainable Development Goals (SDGs), replacing the Millennium Development Goals (MDGs). These will provide a blueprint for development which will guide the world’s efforts to eradicate extreme poverty for the next 15 years and beyond. The outcomes of these important negotiations will ultimately affect millions of people here in my home country of Mali, and across the globe.

All countries have committed to new goals that go beyond simple aid.

Water and sanitation feature in the proposed goals—as a dedicated goal and as indicators of progress in goals on gender and education.

But half way through these negotiations, a vital piece of the puzzle is still missing. Water, sanitation and hygiene are nowhere to be seen in the goal on health and well-being, despite targets on ending preventable child deaths and ensuring everyone has access to health care.

Without measuring and giving incentives for progress on water, sanitation and hygiene, there can never be good health.

This week the WHO revealed that at least 38% of hospitals, clinics and community health centres in the developing world do not have access to safe water.

This does not mean no tap to turn on in the building. This means no clean water point within 500 metres—several minutes’ walk away with full jerrycans.

For a country like Mali, which has just had a brush with Ebola, it is clear to us that basic things like washing your hands are not to be taken for granted. Many in rural areas believe in the tradition that washing your hands washes away your protection. In the face of strongly held beliefs, difficult access to water, little money and few resources, epidemics can take hold quickly.

In the rural village of Diatoula, just 15 km from the outer edge of Bamako, a single nurse is responsible for the health of its 1000 inhabitants. She has delivered 33 babies this year, and counselled 20 women on their pregnancies; she also treats malaria and other common illnesses and refers others to a bigger centre. In that time, she has seen five babies die—three stillborn after their mothers delivered at home, and two within two weeks of birth: “To me it’s very important to have clean hands, and clean equipment. Just imagine, people come to you as a patient, and you are dirty and the place is dirty. They will not even want to come to you. We do not have enough materials here but we are trying to do our best here to provide a clean environment,” the nurse, Vinima Baya, said. “It’s a lot of challenge to be in. You want to help the community, you want to give the best of yourself, but you don’t have the means.”

There is a safe water point at the other side of the village, outside the school, but the clinic itself is served only by a traditional well of murky water, prone to low levels in dry season and open to toads and other small animals that inevitably fall in. Women are expected to bring clean water for their deliveries—five trips to the school water point on the other side of the village.

For Fatoumata Diarra, just 16, it was not enough to save her tiny baby boy from what was likely a deadly infection, after he came home to her family’s dusty courtyard, home to a large extended family as well as a few cows and chickens.
“When I realised my baby was not feeling well, I tried to give him some traditional medicines. I just noticed some black spots on his legs, his body and his penis. The black spots started from the belly and went down to the legs,” she told WaterAid researchers, describing likely symptoms of sepsis. “He wouldn’t drink anything. After I noticed he wasn’t well, it took only one day before he died.”

Baby Allaman died on his 15th day, one of 500 000 newborn babies who die each year because of a lack of safe water, good sanitation and good hygiene practice.

It doesn’t have to be this way. The World Health Organization report is an effort to create a complete picture of water, sanitation and hygiene, and an important first step towards tackling this embarrassment.

But if we do not include these services in new development goals on health, we risk never being able to address this crisis in a meaningful way.

Nearly 1400 children die each day from diarrhoeal illnesses preventable with safe water, safe toilets and handwashing with soap. The same number of newborns die each day of deadly infections which could have been prevented by being delivered into a clean environment, by hands washed with soap and safe water.

Yet there is no measure of whether healthcare facilities have these basic services included in proposals on new development goals.

Water and sanitation are included elsewhere—in the goal on gender (measuring how much time women must spend collecting water) and in education (measuring whether schools have drinking water and gender-separate toilets). WaterAid and its partners are calling on the wider health sector to ensure a target on universal health coverage includes measuring water, sanitation and hygiene access in health care facilities.

We encourage women to deliver in healthcare centres to protect them and their fragile newborns. We must ensure these centres are first doing no harm by providing these basic building blocks of effective health care.

Here in Mali, where the average life expectancy is just 54, one in 10 children in will not survive past their fifth year, in part because of high rates of diarrhoea and infection.

We owe it to them to make these negotiations count.
Not free vaccines, Mr Gates, just sustainably-priced ones

Sara Crager

Advocates working to increase global access to medicines were frustrated by the recent comments made by Bill Gates publicly criticizing Médecins Sans Frontières (Doctors without Borders, MSF) for calling for reductions in the prices of new vaccines. In doing so, Mr Gates stands by a system of pricing that requires raising billions of dollars in donor funding every year to support it. We believe that a system dependent on raising massive amounts of money to meet arbitrarily high prices set by the pharmaceutical industry is a failed system and should be acknowledged as such by donors like Mr Gates. Rather, true success in global vaccination requires mechanisms that can rapidly achieve long-term sustainable vaccine pricing.

In the poorest countries in the world, the price of fully vaccinating a child is now almost 70 times higher than it was in 2001. The increase is mainly due to the soaring prices of newer vaccines such as the pneumococcal conjugate vaccine. This particular vaccine, which was the subject of Mr Gates criticism of MSF, is singly responsible for approximately 45% of the price for the total vaccination package for a child living in a developing country. In the meantime, GSK and Pfizer—who are the only producers of the pneumococcal vaccine—have made over $19 billion dollars since its arrival on the market in 2009.

The justifications for current vaccine prices proffered by the pharmaceutical industry are undermined by their persistent lack of transparency in disclosing accurate figures on their research and development expenditures. These prices are particularly indefensible given the huge amount of taxpayer funding that has gone into vaccine development. For example, federally-funded research at Georgetown University, the University of Rochester, and the US National Cancer Institute was critical to the development of the HPV vaccine, which has made over $16 billion USD for Merck and GSK since it hit the market in 2006.

Mr Gates downplays the importance of vaccine pricing, while emphasizing the importance of improving immunization systems. We believe that the development of national immunization systems and sustainable-priced vaccines need not be mutually exclusive.

The funding model of GAVI (the Vaccine Alliance)—a key player in funding vaccine roll-out in developing countries—illustrates the underlying problems with the current system of vaccine pricing. The subsidies provided by GAVI to countries to finance new vaccines are intended to taper off over a 5-year period, once countries are no longer eligible. There is the expectation that, over time, prices will fall, allowing countries to finance their own vaccines. To date, however, this expectation has not been realized.

So what is the answer to the high cost of new vaccines? In his comments, Mr Gates expressed support for a tiered pricing strategy. We disagree. While tiered pricing has broad support from industry, it has demonstrated itself inferior to the consistently effective strategy of robust and open market competition to lower prices. For example, generic competition decreased the price of first-generation HIV drugs from approximately $10,000 USD per person per year to under $120 today. In contrast, the tiered pricing model used for second-line HIV drugs has resulted in middle-income countries paying up to $740 USD per person per year.

Due to the complexity of vaccine production, it is not possible to manufacture generic vaccines in the same manner that generic drugs are produced. Nevertheless, there is an emerging consensus that a parallel strategy of...
facilitating the market entry of multiple developing country vaccine manufacturers is the best way to rapidly achieve sustainable vaccine pricing, as well as to ensure long-term vaccine supply security. We question whether there is logic in continuing to concentrate donor funding downstream at the point where the end price is set by the pharmaceutical industry, and suggest that it may ultimately be most cost-effective to invest in upstream mechanisms to rapidly achieve sustained vaccine price reductions.

Mr Gates has accused advocacy groups of demanding that vaccines “cost zero”. We are not calling for free vaccines. We are calling for sustainably-priced vaccines. We believe that global access to vaccines will be best served by creating systemic change promoting competition in the vaccine market, not by continuing to pour escalating amounts of donor funding into the profit margins of pharmaceutical companies.

This is a joint post from Sara Crager MD (Universities Allied for Essential Medicines), Merith Basey MSc (Executive Director, North America–Universities Allied for Essential Medicines) and Dzintars Gotham (European Coordinator (UK), Universities Allied for Essential Medicines).

For further information on Universitites Allied for Essential Medicines see www.uaem.org. Email: info@essentialmedicine.org.
Placing women at the centre of the food system

Marc Van Ameringen

Each year International Women’s Day shines a spotlight on women, putting them at the centre of development and equality efforts. For the nutrition community the numerous links between empowering women and improving nutrition are well understood. However, less clearly understood is how we can build food systems that put women and children at the centre.

Women are the most critical target group from a nutrition standpoint. Many adverse health outcomes like stunting are determined by the health and nutritional status of women and adolescent girls. At the same time, improving the nutritional status of women can lead to better education and higher incomes—raising the social standing of women in their communities. Yet, the barriers for women in accessing nutritious diets are numerous and encompass the cost and availability of healthy foods; knowledge about nutrition; as well as the social, cultural and regulatory barriers that shape behaviours and markets.

We’ve spent the past five years working with our partners through a combination of proven interventions—such as the protection and promotion of breastfeeding—and a novel focus exploring the potential role of the private sector in improving access to fortified complementary foods or micronutrient powders. Combining market mechanisms and public delivery systems has unleashed experimentation and innovation in the sector, but our understanding of what works is still far from complete.

One example is the research that we carried out in East Java, Indonesia to understand what influences women when feeding their children, in order to help women to make positive choices without feeling lectured. We found that to be successful you have to involve the whole community—family members, friends and neighbours all play a big role in determining the choices that mothers make about what they and their children eat. Women need to feel empowered to make the decisions that they know are best for themselves and their families.

Another example is the support we’ve provided to female entrepreneurs in rural Rajasthan and Cote D’Ivoire, helping them to develop high quality nutritious products, and build trusted brands that appeal to local women. We’ve found that it is important to promote local agricultural raw materials and take account of the food habits of populations so that they more readily adopt complementary foods or any fortified food. In Cote D’Ivoire we worked with local experts to develop the best formulas on the basis of the agricultural raw materials cultivated in abundance such as corn and rice. In Rajasthan we learned the value of working with governments both as a purchaser of the product and as distributor of it to the intended audience, which includes the job of educating mothers on how to appropriately cook and consume the product.

We have a long way to go before we can make any firm conclusions about what works. However, one thing we can all agree on is that it’s an area that is fraught with complexity.

At the heart of this complexity lies the debate over the balance between specially formulated nutritious products and local food systems. We need to look at integrated solutions that support diverse, sustainable local food systems, while ensuring that women can access the nutrients they need at critical times.

Understanding behaviours is another important part of the picture. Deeply held beliefs about infant and child feeding are not easy to change. Yet, behaviour change has been underinvested in and poorly understood by the nutrition community. Behaviour change is much more of a cornerstone than any of us in the sector were led to believe—and something that the private sector has been doing for many years. We should be open to learning from other
sectors about how we can package and market nutrition to women.

But, we can’t do this alone. Changing the food environment will rely on us working in alliances to build a regulatory environment that sets the stage for a healthy food environment. An optimal regulatory framework should protect breastfeeding while enabling mothers to make well-informed decisions about the foods they purchase.

While experimentation and promising pilots are emerging, there is no single solution that will provide a model for the nutrition community to follow. But, with the need to scale up nutrition interventions greater than ever, this complexity shouldn’t excuse inaction. We don’t have a blueprint, but we do have a start.
Triple Jeopardy: girls and women affected by leprosy are discriminated against because of gender, stigma and disabilities

William Cairns Smith

Leprosy is one of the group of designated Neglected Tropical Diseases. People affected by leprosy experience not only disease, but also the risk of disability and social discrimination. Women with leprosy face the added issue of gender discrimination which results in delayed diagnosis, reduced access to health care, and the threat of divorce. These circumstances have been ignored too long and women in this situation have been treated as invisible. It is time that policy makers and health workers at all levels acted to address the plight of girls and women with leprosy, a disease with an effective treatment that is freely available.

Significant improvements in leprosy control were made in the 1990s following the World Health Assembly Resolution in 1991 to reduce the number of registered leprosy patients to less than 1 in 10,000 by the year 2000. However since that date, the numbers of new cases being detected has sharply declined and for the last 8 years have remained static. In 2013, there were 215,656 new cases reported to WHO including 79,943 women (37%) and 19,796 children (9%).

Community surveys show similar numbers of boys and girls are affected by leprosy, but almost two thirds of new cases reported are in males. There may be a biological explanation but there is a clear problem of access to health care for women in many communities. In South Sudan, Cuba and Kiribati around half of the new cases reported were in females, but only 24% in Madagascar, 17% in Timor Leste and in Pakistan only 2 out of 657 new cases were in females.

A major concern for women is delay in diagnosis of leprosy. The disease is slowly progressive so any delay in detection and treatment results in increased nerve damage to eyes, hands and feet. Impairments in sensory and motor nerve function in the hands and feet lead to recurrent injury and irreversible tissue damage. Women who cook using hot utensils or engage in agricultural labour are at high risk of burns and injuries to anaesthetic limbs. Women delay detection because they are afraid of the social consequences of the diagnosis. Women also delay because they do not have ready access to health information and health care.

People are often disempowered because of leprosy, discriminated against in terms of education, employment, housing, use of public transport, and eligibility for elected office. Women are often disempowered due to gender in terms of rights, property ownership and human rights. Women with leprosy experience both. Girls with leprosy will face social discrimination and encounter difficulties in

Momina’s late diagnosis of leprosy left her with damage to hands and feet. The stigma of leprosy caused her husband to divorce her and leave taking their four children.
marriage. Leprosy is legally grounds for divorce in many countries, and wives divorced on the grounds of leprosy face destitution.

The International Federation of Anti-Leprosy Associations (ILEP) has a strategy to stop leprosy transmission, prevent disability due to leprosy, and break barriers to inclusion. ILEP is currently focusing global attention on the issues of girls and women with leprosy. The World Health Organisation is currently developing a new 5 year strategy for leprosy and it is essential that this new strategy addresses the issues of girls and women with leprosy. Similarly, the Neglected Tropical Diseases (NTD) movement needs to recognise the specific issues for girls and women with NTDs. The 3rd WHO Report on NTDs, “Investing to Overcome the Global Impact of Neglected Tropical Diseases” (2015) mentions gender twice—achieving access to treatment and better outcomes for women and girls affected by NTDs must become a priority.
The thin blue line: increasing access to pregnancy tests in family planning programs

Kate Rademacher and John Stanback

What is the true value of a 10 cent (US$) pregnancy test? In many countries, women are routinely denied same-day provision of family planning methods if they arrive at the clinic on a day when they are not menstruating. When it comes to ensuring reliable access to contraception, it turns out that simple, low-cost pregnancy tests can be extremely valuable.

Sonia, a 49-year-old woman in Rwanda, is a long-time user of Depo-Provera, the popular three-month injectable contraceptive. She explains that women who are not menstruating are often turned away for family planning services because health care providers are concerned that these women might be pregnant. Many are told to return during their next menses, leaving them at risk of unintended pregnancy in the meantime. Sonia says, “When you get there, they ask if you are having your period. When it is ‘no,’ they give you another appointment. When it is ‘yes,’ they give you cotton wool and you go somewhere discreet to put some blood [on it] and come back to show it to the provider. It is only then that the provider shows you the methods.”

Research conducted by FHI 360 indicates that nearly half of new family planning clients are not menstruating when they visit the clinic, and that 17 to 35 percent of these women are denied family planning services. Recent studies have demonstrated that the provision of simple, low-cost pregnancy tests can help reduce this medical barrier.

In a study led by FHI 360 in Zambia, women were four times more likely to be turned away from contraceptive services in clinics where pregnancy tests were not available, compared to sites where tests were provided. Another study in Madagascar conducted by Abt Associates found that when community health workers were given pregnancy tests to distribute to clients for free, the number of new users of hormonal contraceptives increased by 24 percent in an average month compared to the control group.

In particular, pregnancy tests can be critical to helping a woman access long-acting, reversible contraceptives (LARCs) such as implants and intrauterine devices (IUDs). Health care providers who administer LARCs are often especially cautious in ruling out pregnancy, so a simple pregnancy test can make all the difference for women who seek the benefits of these highly effective contraceptive methods.

Pregnancy tests are important not only for family planning programs. A study conducted in South Africa demonstrated that the availability of pregnancy tests can lead to earlier confirmation of pregnancy and access to antenatal care services, which can have important health benefits for mothers and children.

Yet too often, affordable pregnancy tests are not accessible to women. Easy-to-use, highly accurate “dip strip” tests can be purchased from manufacturers for less than ten cents. However, in many countries, pregnancy tests are sold to women at a 2000 percent markup or more, making them prohibitively expensive. For example, a recent study in Burkina Faso revealed that non-menstruating family planning clients are required to buy pregnancy tests, which, at a price of just over US$2, many women there cannot afford.

Efforts to reduce the number of non-menstruating women who are denied family planning services have focused on the distribution of the Pregnancy Checklist, a tool endorsed by the World Health Organization that includes questions health care providers can ask to rule out pregnancy. The checklist is used in dozens of countries and...
has been shown to effectively increase women’s access to same-day provision of family planning. The checklist, however, does not work in all situations. Therefore, it is recommended that providers first screen a woman using the checklist and administer a pregnancy test when necessary. For example, if a woman has missed her monthly period or if her menses are late, the checklist will not be effective at ruling out pregnancy and a pregnancy test should be used.

Despite the importance of pregnancy tests, they are often not procured for large-scale distribution through family planning programs. In recent years, as part of the Family Planning 2020 (FP2020) effort, national governments and donors have committed to reach an additional 120 million girls and women worldwide with contraceptive services within the next five years. Yet, the lack of access to pregnancy tests is a substantial barrier that is potentially limiting the provision of services to millions of women. With more than $2.6 billion pledged to reach the ambitious FP2020 goal, it is time to recognize the important role that a simple, ten-cent diagnostic test can play in increasing women’s access to family planning.

Names in this blog were changed. The quotation comes from an interview conducted as part of a study in Rwanda examining reasons for non-use of contraception.
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Healers under attack: targeting medical care in Syria

Deborah D Ascheim

As doctors, our guiding principle is “do no harm.” It is drilled into us as medical students and regularly reinforced during our training and the remainder of our careers. Sadly, we occasionally learn of colleagues who have abandoned this principle. In Syria, a doctor has violated this doctrine and civilians are dying as a direct result.

Bashar al-Assad, president of Syria, studied medicine at the University of Damascus, graduating with a degree in medicine in 1988. He spent four years working at a hospital in Syria before moving to London to train in ophthalmology at the Western Eye Hospital. But instead of pursuing a career of healing, Assad now controls the Syrian military, which has been systematically and deliberately destroying much of the country’s health care infrastructure with targeted attacks. In addition to being blatantly unethical and immoral, targeting hospitals, clinics, and medical service providers is a crime under international law. When conducted systematically, as is the case in Syria, it is a crime against humanity.

Physicians for Human Rights has documented the deaths of 599 health professionals in Syria over the last four years, and 224 deliberate attacks on 175 health care facilities. Nearly 90 percent of these attacks on facilities have been attributed to the Syrian government. Health care professionals are not simply caught in crossfire; more than 135 of them have died after being detained and tortured in the custody of the state security apparatus. Many Syrian doctors have told us they are being targeted because they bear witness to human rights violations, and are perceived to be an enemy of the state for treating patients on all sides of the conflict.

In 2014 alone, 178 medical personnel were killed, including 35 who were tortured to death and seven who were executed. This amounts to the death of one medical worker every other day in Syria. The year also brought a total of 86 attacks on medical facilities, devastating Syria’s health care system.

Many medical professionals have fled the country, contributing to a dire shortage of health care workers in a country in desperate need of medical services. In Eastern Aleppo, only 30 people working as doctors—including medical students, pharmacists, and dentists—remain to serve a population of over 300,000.

The overall death toll in Syria is estimated to be over 200,000, and civilians have been directly targeted, demonstrating the Syrian government’s complete disregard for the laws of war. Assad’s government has compounded the carnage by deliberately placing survivors of attacks who seek medical attention at further risk by targeting the facilities in which they seek care. And we will never know how many people died because the closest hospital or clinic was destroyed or because there were no doctors or nurses available to treat them. In addition to systematic attacks on medical personnel and infrastructure, reports indicate that while the Syrian government has at times allowed the delivery of some food and water into besieged areas, it has expressly blocked the provision of medical supplies.

By systematically demolishing the health care system, Assad is depriving the citizens of his country of standard medical care for chronic conditions as well as routine preventive health care. In and of itself, this violates the tenets of governments’ responsibilities to its citizens as defined by the Universal Declaration of Human Rights. In today’s Syria, even minor infections can become life threatening. In the short term, Syrians are dying unnecessarily. In the longer term, even after the conflict ends, many more will be affected and die before the health care system can be rebuilt.

As doctors, our guiding principle is “do no harm.” It is drilled into us as medical students and regularly reinforced during our training and the remainder of our careers. Sadly, we occasionally learn of colleagues who have abandoned this principle. In Syria, a doctor has violated this doctrine and civilians are dying as a direct result.
For nearly three decades, Physicians for Human Rights has worked to empower our medical colleagues to speak out when they are recruited to do work that violates their ethical obligations and undermines human rights. We have educated doctors about why they should never participate in any aspect of torture, even under the guise of minimizing harm or saving a life. We have also worked to highlight the issue of attacks on health care, and advocated to protect medical personnel, patients, and facilities during conflict.

Our Syrian colleagues tell us that Assad is detaining, torturing, and killing medical professionals both because they are highly respected members of the Syrian society and they’re treating members of the opposition. It is also almost certainly because they are important witnesses to crimes against the Syrian people. Health professionals are often the first responders to the violations that are taking place on a daily basis in Syria. The testimony of a doctor who has treated the victim of a chemical weapons attack or torture is hard to refute.

Health professionals who are willing to treat everyone in need and speak out against the abuses they witness represent the best of our profession. Today, the brutal irony is that they are dying at the hands of another doctor, President Assad, who embodies not only the worst of our profession, but of humanity.

Doctors, nurses, and other health professionals, as well as medical associations, cannot be silent in the face of what is threatening to become the “new normal” in conflict: the targeting of medical professionals and health care infrastructure. There are reports of attacks on hospitals in South Sudan and health professionals have come under fire in other countries, including Bahrain, Ukraine, and Turkey. We must all strive to heal those in need—no matter how difficult the circumstances—and we must speak out to stop the targeting of those who risk their lives to practice medicine.
Solving statelessness, saving lives

Zahra Albarazi

In a slum-like area on the outskirts of luxuriant Kuwait City lives Mounira, wife of a stateless man and mother of five stateless children. She sits cross legged on the floor in the middle of her small bare sitting room as we discuss the effects of statelessness on her family. There’s a tear in her eye as she talks about her 28-year old son. She tells me at length about how he could not apply for the jobs he wanted, had been rejected from several marriage proposals, and was not able to continue his education since they could not afford a private university. All of these problems, she explains, were caused by his statelessness—his lack of any nationality.

After suffering so much rejection, Mounira’s son now rarely leaves his room. He is no longer himself, but has become introverted, emotionally unpredictable, constantly angry, frustrated. As we talk, she keeps getting up and going into the back room where I can hear an argument starting. Finally, after more than half an hour, Mounira’s son joins us. He slumps down in a corner of the room, looking at the wall and paying attention only to his chain smoking. Mounira directs questions at him and sometimes receives a nod or shake of the head, but after ten minutes her son draws himself back to his feet and disappears once again into his room. Mounira sighs heavily before continuing, “the same problem, my same life will be the same with my children, unless things change. My brother has the same problem. And his kids. And my other brother. It’s never-ending. It’s hopeless.” Despite her attempts to hide it, it is clear that the psychological strain of statelessness had taken its toll not only on her son, but on Mounira too.

In Jordan, I meet Hamza, who is also keen to talk to me about this son. Often ill as a child, Hamza says, when his son was six he endured a period of prolonged sickness: “For about 3 months he had no energy and would sleep most of the day. He kept crying and I don’t think we saw him smile once during that period”. Because Hamza and his children are stateless, they could not access the state’s healthcare system and they were never able to find out what was wrong with the boy. “Obviously we were desperate to get him cured—especially his mum who would get angry at me all the time for not figuring out a way. But I could not afford private healthcare. He did get better in the end. But he was always very ill. A very ill child.” Hamza brings out a pile of documents from his bedroom and lays them all out in front of him. He sifts through the pile, trying as best as he could to show his links to Jordan, to show that he belongs to the country. “I served in the Jordanian army for 6 years. I served my country. But they still will not give me nationality.” For Hamza, this lack of nationality meant being powerless to help his sick child.

Hamza’s neighbour, Um Ziad, shares a similar story. Her two eldest sons were ill when they were younger, with an illness she believes was curable. However, it was neither diagnosed nor treated since she could not take them to hospital because they are stateless and have no right to access free healthcare. When they were in their early teens a special needs school opened up nearby her house that provided education to physically and mentally disabled children. “I was overjoyed, but very quickly found out that they could not attend that either. That was just for citizen children. Again.” A few years later, she started to raise enough money to give them basic treatment, but by then their illness had progressed irrevocably. She blames their statelessness on not being able to make her sons well.
Mounira, Hamza and Um Ziad’s stories all suggest that statelessness may be prompting and aggravating health problems, while also creating a bar in access to treatment. There are many millions of stateless people around the world—people who are without a nationality, legally without a country. The problems that statelessness brings differ from country to country, but among them are denial of access to basic healthcare and psychosocial services in the country in which they reside. Added to this, restrictions on other basic rights and services have the potential to exacerbate health problems and impact on mental well-being. The simple fact of being legally invisible can also be a heavy emotional burden to carry. Yet, despite the severity and magnitude of this problem, very little attention has been given to the distinct situation of stateless people by the health field (the only exception, to date, being in this article by Kingston et al). At the end of 2014, the United Nations High Commissioner for Refugees launched a global campaign to end statelessness by 2024. For this ambitious goal to be achieved, we must better understand and document the effects of statelessness, including the health impact, so as to increase the knowledge-base on which to forge solutions.

This article was inspired by field research undertaken in 2014 by the author as part of a project commissioned by the Women’s Refugee Commission—Our Motherland, Our Country. The testimonials offered here were collected as part of this research. Names have been changed as requested by the individuals.
The International Day of Zero Tolerance to Female Genital Mutilation—we must end this human rights violation

Morissanda Kouyaté

In 1982, as a young chief physician working in the interior regions of Guinea, I admitted twin girls aged about seven years, who had undergone Female Genital Mutilation (FGM) carried out by a ‘traditional exciser’. Despite every effort to save them, both girls subsequently died from haemorrhage. Witnessing this tragic and wholly unnecessary loss of young lives prompted me to become a lifelong campaigner against this practice wherever it occurs.

The negative impact of FGM on girls and women is immense. This practice, which consists of the destruction of the external genital organs, is frequently carried out under the worst possible hygienic conditions and without any anaesthesia. The immediate and long-term physical consequences such as extreme pain, sometimes leading to haemorrhage, infections, infertility and even death, are coupled with emotional and psychological complications that very often become permanent.

FGM is practiced at varying levels in twenty-nine countries on the African continent. In some, such as Egypt, Ethiopia, Guinea, Mali, Sierra Leone, Somalia and Sudan the practice is almost endemic, with a prevalence of 85% among the general population. At the other end of the scale, FGM is performed principally on particular ethnic minority groups representing less than 25% of the total female population in countries including Ghana, Nigeria, DRC, Tanzania and Uganda. Beyond Africa, this terrible phenomenon also affects the African diaspora around the world. Girls are brought back to the country of origin of their parents to be subjected to FGM. FGM is also performed in parts of the Middle East and on communities living in Indonesia and Malaysia. Wherever it is performed, the practice of FGM constitutes a violation of the girl’s rights to physical integrity.

In recent years, thankfully, a growing African-led movement has emerged which is determined to eradicate FGM wherever it occurs. The efforts of the Inter-African Committee (IAC) and its partners, such as the African Union and the United Nations system, have seen FGM firmly included on the international agenda. This has led to important results: the adoption of the Protocol to the African Charter on Human and Peoples’ Rights, on the Rights of Women (article 5); the adoption of February 6 as International Day of Zero Tolerance to Female Genital Mutilation; and, above all, the adoption of the United Nations General Assembly, on December 20, 2012, of Resolution 67/146 prohibiting female genital mutilation worldwide and calling upon governments for its total elimination.

Today, February 6, 2014, is the International Day of Zero Tolerance to Female Genital Mutilation. This awareness day was proposed by the Inter-African Committee (IAC) and adopted by the international community. Its key objective is to make the whole world say No to FGM, but this year’s particular theme is focused on imploring health practitioners and regulatory bodies to end the medicalization of FGM, which has been a growing and extremely unwelcome development in recent decades.

Medicalization of FGM is the perverse consequence of the first stage of the combating the practice, where focus was placed on its medical and sanitary aspects. The arguments initially put forward, during the years 1970–1980, stressed the fact that FGM was practised under septic conditions, without anaesthesia, with serious medical-sanitary consequences. This led to the well-meaning but
tragically misguided conclusion FGM could be performed under medical supervision by trained personnel in order to limit the damage. For this year’s Zero Tolerance Day, we are reminding all health workers that FGM has no medical or health benefits whatsoever, and that the principle of ‘Do No Harm’ which governs the ethical behaviour of those involved in providing health care clearly makes conducting or aiding the practice of FGM insupportable.

I am confident, on this year’s Zero Tolerance Day, that we are making strides towards eliminating FGM within this current generation. Africans themselves, through the African Union, the African Heads of State and the African civil society, notably the Inter-African Committee (IAC), have decided to take the leadership in the fight against this plague and, as such, have called for an international mobilization for its total elimination in Africa and in the rest of the world.

The violation of rights has no nationality; neither have the solutions for its prevention and elimination. As a violation of the rights of girls and women, the fight against female genital mutilation is universal.
Healthcare professionals: reduce meat consumption to tackle climate change and improve public health

Francis Vergunst

Healthcare professionals have a responsibility to educate the population about health and reduce threats to public health. Climate change is recognised as a major emerging threat to human health worldwide but engagement with the problem within the health sector, as elsewhere, is widely recognised as insufficient. Fortunately many strategies to reduce greenhouse gas (GHG) emissions are also good for health. There is evidence, for example, that a controlled reduction in the production and consumption of animal products could substantially cut global GHG emissions and offer large public health gains through the reduced risk of several leading chronic diseases. As I will explain, there is a strong case for healthcare professionals to increase public awareness about the link between diet, climate change and health, and to strategically encourage a reduction in consumption of animal products.

We know that livestock production is a potent contributor to climate change. According to the United Nations Food and Agriculture Organisation, global livestock production accounts for around 15% of human produced GHG emissions, more than emissions from cars, planes, ships and all other forms of transport put together. Moreover, due largely to population growth and rising levels of affluence in low and middle income countries, global meat production is expected to more than double between 2003 and 2050. While it is true that novel technologies and improved efficiency in livestock farming will help reduce emissions in the future, modelled impact assessments show that this will not be sufficient to meet climate change targets—a reduction in production and consumption will also be necessary.

We know that too much meat is not good for us. In particular, red and processed meat consumed in large quantities has been linked with a range of poor health outcomes and premature mortality. Recent studies show that a reduction in consumption of these products would reduce the risk of coronary heart disease, obesity (and associated health conditions such as type 2 diabetes), and various cancers—all major current contributors to the global disease burden. While the health risks associated with such a reduction must be considered, there is little evidence that a cautious reduction, described below, would lead to adverse health outcomes.

McMichael and colleagues argue that a ‘contraction and convergence’ model is the most ethically defensible and politically feasible strategy to reduce GHG emissions associated with consumption of animal products. They note that the average adult’s meat consumption in high-income countries is currently 200–250g a day which, from a GHG emissions and global food security perspective, should be reduced to 90g a day with no more than 50g coming from ruminants (digastric grazers such as cattle, sheep, goats, etc.). The strategy would accommodate international differences in patterns of meat consumption; consumption would fall in high-income countries and rise (and then taper) in low-income countries, with predictable health benefits for both groups. The effectiveness of limiting meat consumption in order to reduce GHG emissions and improve health outcomes is supported...
by several modelling studies. Since red meat production has a far larger per unit impact on GHG emissions—as well as a larger health burden when compared with poultry and fish—reduction in consumption of these products should be prioritised.

There is a large public awareness gap about the livestock sector’s contribution to GHG emissions, resulting climate change, and the risk that this poses to public health. GHG emissions impact on health right now—for example through local environmental pollution—and will increasingly impact on health in the long run as climate change advances (e.g. through adverse weather events, food insecurity, increased geographical reach of infectious diseases such as malaria). Healthcare professionals have a professional mandate to inform the public and policy makers about these threats to health. A recent review of global public opinion about meat and dairy consumption and its role in climate change concluded that “closing the awareness gap is likely to be a precondition for voluntary behaviour change to reduce individual emissions, and for societal responsiveness to government interventions or public campaigns to encourage behaviour change”.

Should healthcare professionals actively encourage patients and the public to reduce meat consumption? Fear of consumer backlash means that such a proposal is unlikely to receive a sweeping public endorsement from the health sector and implementation, at least initially, may depend on initiative from individuals and their institutions. It’s worth remembering that past campaigns led largely by healthcare professionals have been highly successful at shifting consumer behaviour, most notably in the case of tobacco smoking, but they take time to gain momentum.

Like encouraging walking or cycling as an alternative to driving, the potential health and environmental benefits of reducing meat consumption are numerous and hard to overstate. If our primary duty as healthcare professionals is to ensure the health and wellbeing of those we serve, now and in the long-term, then it is difficult to argue against this position. No single strategy to reduce GHG emissions can satisfy all possible stakeholders but the intervention proposed here is appealing because it is straightforward to implement, internationally equitable, and good for our health too—that’s an excellent place to start.
Key data points for guiding the Ebola response

Ranu S Dhillon

While the general strategies for Ebola control—community engagement, contact tracing, patient transport, lab diagnosis, and isolation with treatment—are clear, ensuring effective implementation requires attention to numerous details, pinpointing and troubleshooting breakdowns, and tailoring approaches to location-specific challenges. The bottlenecks that may be present in one district may not be the same as elsewhere with seemingly similar problems (i.e. delays in getting patients isolated); this requires different corrective actions (i.e. more ambulances, better contact tracing). Managing a national Ebola response requires data that can facilitate the identification of site-specific issues and guide implementation. As transmission declines in Liberia, Guinea, and now hopefully Sierra Leone, battling the epidemic down to zero will require even more precise, data-driven action to stamp out the cases that remain. There are six data points not routinely captured or reported that could be generated with marginal additional effort that would add critical insight for guiding response efforts.

1. Symptom-to-isolation intervals

Reducing the window of transmission and improving case survival requires compressing the time between the onset of symptoms and when patients are isolated for treatment. The intervals between when a patient is first experiencing symptoms, identified as potentially having Ebola and reported (either by a contact tracer, health worker, or the patient herself), picked up by an ambulance, diagnosed by blood testing, and isolated for treatment should be measured for each district so delays in this chain of interventions can be identified and remedied (figure 1).

For example, in one district, the delays may take place in identifying suspicious cases due to poor awareness or problems with contact tracing—i.e., contact tracers are not seeing their contacts everyday (figure 2).

In another area, there may be undue breakdowns in transporting patients in a timely manner—i.e., not enough ambulances (figure 3).

Currently, the dates of symptom onset, diagnosis, and isolation are collected during case intake. The time when patients are first identified as having symptoms suspicious for Ebola and transported for testing would ideally be obtained from logs maintained by call centers and transport operators or, if smart technologies are used throughout the chain of interventions, automatically captured with timestamps. In the immediate term, these data points could even be approximated from patient history during intake interviews.

An ongoing picture of these intervals and the overall symptom-to-isolation time by locality would reflect how well the chain of interventions is being executed and highlight exactly where undue delays are taking place.

2. What percentage of cases are from known contacts?

Contact tracing, the daily tracking of people who have been exposed to someone with Ebola (‘contacts’) for 21 days, is the linchpin of epidemic control. This process allows those who develop Ebola to be identified at the earliest onset of symptoms and isolated before they can infect others. Discerning the proportion of cases that are emerging from...
known contacts who are being traced gives us a picture of whether all transmission chains are known and how well the investigation of new cases is working to identify contacts. There are several scenarios whereby new cases could emerge among people who are not recognized and tracked as contacts. These situations need to be evaluated to understand where case identification and contact tracing are breaking down or whether there are unknown transmission chains. A few circumstances are possible:

- Cases are coming from across the border from other Ebola-affected countries and not known as ‘contacts’ in the country where they are identified. If this pattern were common, it would reflect the need for response efforts to improve cross-border coordination of contact tracing, a discussion that is currently underway given the high mobility of people across the borders of Guinea, Sierra Leone, and Liberia.

- Cases are emerging from a locality where there is known transmission, but, due to community resistance, response efforts are not allowed into these communities to identify specific cases and identify and trace their contacts. This is a scenario that remains a challenge in several areas of Guinea where communities have even been violent against response workers.

- Cases are connected to a known transmission chain, but were not identified as a contact during the intake investigation of the patient from whom they contracted the virus. Identifying all contacts can be very complex. In some instances, patients may withhold the names of contacts, for example, of close family members, because of fear of stigmatizing them. Some patients may also be so ill by the time they are admitted for treatment that they are unable to provide a full and coherent listing of the people they may have exposed.

- If none of these other scenarios is likely, the case may reflect infection from an unknown transmission chain. This would be an alarming result that indicates that the virus is spreading off the radar of response efforts and at risk of unchecked transmission (figure 4).

3. Context of transmission

For all the precautions taken for preventing Ebola transmission, there are a few common instances that likely account for most infections. The likely context of transmission should be ascertained for each case and patterns understood for each district so response efforts can target modalities that seem to disproportionately be driving infection. For example, in one area of intense transmission, greater than 70% of transmission may be caused by unsafe burials while, elsewhere, the lack of infection control training and equipment for health workers may be the main mode of transmission. This is information that those investigating new cases and involved with contact tracing know.
subjectively, but is not collected systematically and anecdotally conveyed more widely.

Check all that apply:
• Cared for a sick person at home
• Travelled in the same vehicle as a sick person
• Health care worker with breach in protection and protocols
• Traditional healer treating a sick person
• Interaction with a health care worker or traditional healer who may be infected
• Attended a funeral of an infected person

4. “Epidemiological autopsy”
In general health systems management, ‘verbal autopsies’ are done for child deaths to discern the likely medical cause of death (i.e., malaria) and, more importantly, the systems gaps that failed to prevent it. A similar assessment should be conducted for each new Ebola case to discern where and why response efforts were unable to prevent transmission. For example, if a case was likely transmitted during an unsafe burial, did this happen because the community was unaware of the importance of safe burial? Or was it because, despite education efforts, they were still resistant to changing local practice? Or were they compliant and called for a burial team but, due to delays in the burial team reaching them, they went ahead with an unsafe burial?

These ‘causes of causes’ are also subjectively understood by those investigating new cases, but not captured systematically or disseminated to all response actors. This information need not be perfect or overly formalized. Even a subjective one or two points as to the ‘systems cause’ for each case would help elucidate where response efforts need to be strengthened.

5. Contact tracing indicators
Contact tracing efforts should be scrutinized to ensure this vital process is taking place reliably. A few key indicators can be regularly obtained to do this:
• Percentage of contacts visited today
• Percentage of contacts not visited for 1 day
• Percentage of contacts not visited for 3 or more days and potentially ‘lost to follow-up’
• Of those not seen for 3 or more days, is it because the contact is mobile and has left the area? People are very mobile in the three affected countries and especially so if they have been made newly vulnerable by the death of loved ones who have also made them ‘contacts.’

Understanding how many contacts are ‘lost to follow-up’ due to mobility can delineate whether special provisions (i.e., housing, facilitated transport) must be employed to ensure they can be tracked for the full 21 days.

These parameters would allow tracing efforts to be tightened and missed contacts to be captured before they are lost to follow-up. Many of these data points are being captured, but at a delay before they can be acted upon and not disaggregated for each locality where performance may differ.

6. Counts of survivors
Right now, epidemiological reports only list daily and cumulative tallies of confirmed and deceased cases. A daily and cumulative report of the number of survivors who have recovered from Ebola should be as prominently featured. This is important for gaining a complete picture of the epidemic and highlighting the victories that are taking place everyday.

Taming the Ebola epidemic and getting to zero will require tailored approaches driven by data. These six indicators can be easily and immediately captured through existing mechanisms and generated with little additional analytical work. These parameters provide distinguishing insights critical for making strategic and operational decisions on the ground and should become part of the information used for Ebola response efforts.
Why focus on nutrition in the final year of the Millennium Development Goals?

Jessica Johnston

With fewer than 360 days remaining until the Millennium Development Goal (MDG) deadline, a sharper focus on the criticality of nutrition to improving child survival is needed to accelerate progress towards the achievement of MDG4. Global child deaths have halved since 1990, but there are still 6.3 million children dying each year; achieving MDG4 requires a two-thirds reduction in the 1990 child mortality rate to below 4.3 million deaths.

Afghanistan ranks 12th in the world in terms of the annual number of child deaths, and is currently off track to achieve MDG4. Recent nutrition data show alarmingly high levels of malnutrition in the country, with some provinces reporting rates of chronic undernutrition in children to be as high as 70%. The high rates of undernutrition and slow progress in decreasing child mortality in Afghanistan point to an urgent need to better understand and integrate nutrition with maternal and child health investments in order to accelerate progress towards MDG4 achievement.

Today, 45% of all child deaths (nearly 3 million child deaths annually) are attributable to malnutrition, the effects of which are devastating. Acute food shortages linked to increased episodes of illness and infectious disease can rapidly lead to severe acute malnutrition (SAM), also known as wasting (low weight-for-height), while chronic poor energy intake associated with poor hygiene and sanitation are the primary causes of stunting (low height-for-age). Micronutrient deficiencies (vitamin A, zinc, iron, etc.) have also been shown to lead to more frequent infections, reduce children’s ability to combat diseases and impair long-term mental capacity.

Undernourished children are more susceptible to illness and, once ill, are less able to heal. Research shows that children who suffer from severe wasting are, on average, nine times more likely to die from preventable diseases than adequately nourished children.

Women cannot, and should not, be ignored in the battle to fight child undernutrition. Undernourished pregnant women, especially adolescents, have an increased likelihood of having low birthweight babies, or infants that are small for gestational age (SGA). SGA babies born at term are three times more likely to die than babies born appropriate-for-gestational age.

The first 1000 days, from the time of conception to the first two years of a child’s life, are a critical period of vulnerability and opportunity in child health. This is the window when children have nutritional needs greater than at any other time of their lives and also the greatest vulnerability to malnutrition and infection. The 2013 Lancet Series on maternal and child nutrition found that the greatest...
life-saving nutrition interventions included expanding management of acute malnutrition, zinc supplementation, and the promotion of breastfeeding and complementary feeding and several nutrition interventions for pregnant women. In 2015, nutrition investments need to track closely to the list outlined in figure 1, otherwise their impact on MDG4 will be blunted.

Recent nutrition collaborations across several development actors have provided a platform for greater impact and set the stage for success. In 2013, the Nutrition for Growth Summit successfully mobilised over US$4 billion in commitments, including a $700 million commitment from the Children’s Investment Fund Foundation (CIFF) together with UBS Optimus Foundation and the UK Government. In 2014, the Canadian government committed CA$3.5 billion to maternal and child survival with an explicit focus on nutrition, and the Innovative Finance Foundation announced an innovative financing facility that will leverage a US$0.10 tax on natural resources to create a fund aimed at reducing malnutrition in Africa. Also in 2014, a Global Financing Facility for Reproductive, Maternal, Newborn and Adolescent Health (RMNCAH) was announced, with initial investment of nearly US$4 billion; however, it is still unclear what, if any, explicit focus will exist for nutrition investments.

It is critical that new funding prioritises the populations where the most deaths can be prevented. According to 2013 UNICEF data, ten countries made up 60% of the global burden of acutely malnourished children: India, Nigeria, Pakistan, Bangladesh, Indonesia, Ethiopia, the Democratic Republic of the Congo, Sudan, Egypt, and the Philippines. These are also the populations where child deaths from pneumonia and diarrhoea are concentrated, and any efforts to improve the nutritional status of children will also reduce morbidity and mortality from these leading infectious disease killers. Focusing on improving nutrition in these most vulnerable populations presents an opportunity to save hundreds of thousands of children’s lives in 2015 and beyond.

There are a number of “ready-to-implement” programme opportunities that, if funded now in the most vulnerable populations, could save hundreds of thousands of children’s lives in 2015 and greatly accelerate MDG4 achievement:

1. Distribution of nutrition interventions (e.g., therapeutic foods, micronutrient supplements, education campaigns) as part of existing, planned polio and measles vaccination campaigns, child health weeks, general food distribution, and seasonal malaria prevention campaigns, prioritising the populations with the greatest numbers of undernourished children. For example, seasonal malaria prevention campaigns, led by the Malaria Consortium, Médecins Sans Frontières, the US President’s Malaria Initiative, and UNICEF will expand to reach millions of children in Africa in this rainy season.

2. Expansion of proven behaviour-change programming for improved nutrition, including programmes to promote early and exclusive breastfeeding, such as Alive & Thrive in Vietnam and Bangladesh. Breastfeeding is a key, high-impact intervention to prevent newborn mortality—a 2013 review of the impact of early breastfeeding initiation (within 24 h of birth) found that the risk of all-cause neonatal mortality was decreased by 44%. As countries like Nigeria and India invest in conditional cash transfer programmes to encourage more mothers to give birth in health facilities, it is imperative that the promotion of early and exclusive breastfeeding is included in the care delivered to mothers in these facilities.

3. Expansion of Community-based Management of Acute Malnutrition (CMAM) programming to reach an additional...
500 000 children in 2015. In northern Nigeria, CIFF has partnered with UNICEF and the Government of Nigeria to improve and expand coverage of CMAM. By the end of the project, the partnership will have reached 1 million children in Nigeria and averted the deaths of an estimated 100 000 children. Expanding CMAM coverage in 2015 to reach an additional 500 000 children in Nigeria and other high-burden countries (figure 2) presents an enormous opportunity and feasible goal to save thousands of children’s lives this year.

4. Training and equipment of community health workers (CHWs)—an untapped resource for nutrition—to educate and support mothers, diagnose and refer undernourished children, distribute health commodities (eg, oral rehydration solution, zinc) and monitor progress. While CHWs have already been shown as a feasible delivery platform for treatment of SAM in small programmes in countries like Malawi, Angola, and South Sudan, there exists an opportunity to maximise this delivery platform with other services at a larger scale for life-saving impact.

Also, in 2015 we must not miss opportunities to highlight occasions for greater collaboration with other sectors and investment in integrated programming that includes nutrition. For example, global and regional forums such as the World Economic Forum in Davos and the post-2015 Financing for Development Summit in Addis Ababa among others, present excellent opportunities to generate greater awareness about the criticality of nutrition to child survival. Such meetings can be used as “action-forcing events” for organisations to mobilise resources and strike partnership agreements that will have MDG impact and be announced on these highly visible platforms.

In the final year of the MDGs, a focus on nutrition can help save hundreds of thousands of children’s lives as well as increase the likelihood of saving additional lives post-2015. Further, the benefits of reducing malnutrition reach far beyond child survival and include significant boosts to educational attainment, lifetime earnings, and growth of countries’ gross national products. These improvements in the nutritional status of children will lay a foundation for the world of sustainable development that we are all seeking.

Refusing to let “business as usual” continue in the coming year will reinforce our collective commitment to ending child deaths from preventable causes by 2020. Anything less is unacceptable in 2015 and beyond.

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### The Lassa super-spreader and lessons from 17th century Milan

Gianni Lo Iacono

In Sforza castle in Milan it is still possible to see a memorial stone to the cruel and deadly punishments inflicted on two men during the great bubonic plague of that city in 1630. They were accused of being “anointers”—people who, it was said, smeared the walls of houses with a poisonous ointment to spread the pestilence. The house of one of the accused was demolished and a pillar, known as the Column of Infamy, erected on the spot.

I was reminded of all this recently when considering the implications of research results from our work on Lassa fever in Sierra Leone. Lassa fever, like Ebola, is a viral hemorrhagic fever endemic in areas of West Africa. Although the current Ebola outbreak (which has killed Dr Sheik Umar Khan, one of our key collaborators) has eclipsed much current interest in Lassa fever, the disease’s impact remains high.

According to one estimate, there are 100 000–300 000 cases of the disease each year in West Africa, and some 5000 deaths. People can be infected either by exposure to a locally common rodent, *Mastomys natalensis*, or to other infected humans. My work, for the Dynamic Drivers of Disease in Africa research consortium, was to formulate a mathematical model to assess the relative risk of these two modes of transmissions. But this is not what I want to talk about here. What I find fascinating is how people’s perception of the risk of Lassa fever is evolving; and what I find challenging is how our findings should be used to help inform them, especially when working in a socio-cultural situation very different from our own.

#### Evolving Perception of Risk

Lassa fever was first identified in the village of Lassa, Nigeria, in 1969, when it caused the death of two missionary nurses and the serious illness of a third. Other severe hospital outbreaks followed. The early perception that the virus was both highly contagious and virulent, likely raised the rather doom-laden message: “We all die of Lassa fever!” leading, in Western countries, to stringent requirements for containment of the patients.

Then scientists realised that simple barrier nursing methods could dramatically reduce the risk of human-to-human infection. Conceivably, this steered the message towards: “As long as you don’t mess with needles you’re fine!”—and this perception of the disease has since shaped the choice of policy makers. Most public awareness campaigns have as their primary aim reducing exposure to rats. Of course, this is a very sensible objective, but the role of humans in the spread of the disease could have been underestimated.

#### The puzzle of human-to-human transmission

Our research used mathematical modelling to analyse data from outbreaks known to be due to human-to-human chains of transmission, and calculated the ‘effective reproductive number’ (i.e. the number of secondary infections from a typical infected individual) of Lassa fever. Then we compared data from hundreds of Lassa-infected patients from Kenema Government Hospital, in Sierra Leone, who could have been infected either by rodents or humans, with the data from human-to-human chains. By considering the

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effective reproductive numbers, we inferred the proportion of patients infected by humans rather than rodents.

We found that, human-to-human transmission of Lassa fever in Sierra Leone may cause as many as 20% of cases. The interesting point though is that most infected people are not able to generate a sustained chain of transmission. The majority of cases caused by human-to-human transmission are probably due to only a small number of infected people, the so-called “super-spreaders”.

But we don’t yet fully know what makes someone a super-spreader. Is it his or her physiology? Is it the person’s home environment or their social interactions? Or, very likely, is it a combination of these factors?

**Awkward Questions**

Uncomfortably, super-spreaders resemble our alleged anointers of the 17th century—and this raises a series of questions for which I feel totally unprepared.

How do you tell people that among them there may be—albeit unwillingly—a super-spreader? What connotations and associations does the word for “spreader” have in Mende, the major language of Sierra Leone? How to make people aware of the inevitable uncertainty associated with your research? Will local people take any new message seriously, given that for many years they have been told to blame the rats?

Or would this message trigger further mistrust and suspicion? Could it threaten a sense of community already challenged by the current Ebola outbreak?

**Disease and Irrationality**

We have learned from history that horrible and poorly understood diseases are a potential source of misconceptions and irrational reactions. Just try to Google “Aids” with “god” and “punishment” to see this. Only a few months ago an angry crowd, attacked an Ebola treatment centre in Guinea, accusing its staff of bringing the deadly disease to town.

And of course it is always “the other” to blame, as so many names for syphilis illustrate: “French disease” for the British and Italians, “morbus germanicus” for the French, “Neapolitan sickness” for the Florentines etc., until of course someone decided that the disease was in fact carried by Christopher Columbus’s sailors from America (which might be true, making all Europeans happy, but still those Spanish sailors...)

All this shows the tremendous challenges that scientists, doctors, public health officials and educators face. To tackle Lassa fevers we need not only to be competent performing lab investigations, have rodent-catching skills and be able to calculate the reproductive number, we also need expertise in anthropology, knowledge of local languages and a good understanding of politics. This is not easy, but there is no other option.

In 1778, Milan’s Column of Infamy was demolished. However, as Alessandro Manzoni, in his book Storia della Colonna Infame, points out, authorities often prefer to see a miscarriage of justice than face a panic-stricken crowd. Somehow we need to find a way keep people informed, without returning to the anointers’ tale.
Grassroots movements Kicking Ebola Out

Gemma Bowsher

West Africa’s Ebola outbreak has dominated public consciousness over the last year, with the stream of information and misinformation strongly contributing to the fear and uncertainty surrounding diagnosis and transmission. Medical students in Sierra Leone and Guinea have launched the ‘KickEbolaOut’ Campaign in order to educate local populations about the disease in an effort to encourage the uptake of medical treatment.

At the turn of the year there have been more than 20 000 Ebola cases with the death toll surpassing 8000. It is the largest documented Ebola outbreak in history with Guinea, Liberia and Sierra Leone being the hardest hit countries. One of the major challenges in controlling the disease has been the spread of false information that has prevented many from seeking medical attention through fear and stigma. The students in Sierra Leone and Guinea have stepped in to fill the information vacuum—whilst doctors, nurses and other health professionals are occupied in the treatment centres, the students have been engaging the public through health education and sensitisation programmes.

The students who belong to the International Federation of Medical Student Associations, are entering communities and distributing information through leaflets, radio programmes and direct engagement. They have done so with limited funding, mainly through crowdfunding, in order to buy a minivan and disinfectant supplies for themselves as they access remote communities far from the focus of treatment efforts.

KickEbolaOut has demonstrated the power of grassroots student mobilisation in the face of a public health crisis. A model of South-South cooperation, the movement has changed the way disease information is delivered. Understanding that there is often a deep mistrust of the government’s involvement in the outbreak, Asad Naveed, President of the Sierra Leone Medical Students’ Association seeks to ‘build rapport before giving guidelines’. By dealing with the fear of the disease through education through various means, the movement has accessed groups that are challenging for conventional public health interventions.

The WHO has proved their confidence in the group—members have been selected to monitor their house to house sensitisation programmes supported by the Ministry of Health, integrating the group into the institutionalised disease response. Medical student groups from around the world have lent their support by fundraising and spreading the message through the movement’s social media campaigns. This very modern approach to traditional disease control demonstrates the capacity of young and future health professionals to take ownership of the challenges they will face throughout their careers.

There has been precious little to take comfort in during the course of the outbreak. Calamitous reports of case fatality rates and escalating mortality have secured the place of the outbreak in the history of notable epidemics. The KickEbolaOut campaign should encourage us however, that when the epidemic eventually dissipates, there will be a group of young professionals invested in changing the discourse around health and disease. A movement that will continue to engage the public from within the regions that have suffered the most, and will maintain stewardship of efforts to support the recovery for the future.

This article was co-authored with Rachna Venkatasami. She is a postgraduate medical student at Bristol University and is currently working at Medsin-UK as a policy analyst and a member of the Human Rights National Working Group.
Sierra Leone’s hookworms

Peter Hotez

The latest December *Ebola Situation Report* from WHO indicates that Sierra Leone currently has the highest total number of reported cases—almost 8000—having recently overtaken Liberia. Whereas the number of Ebola cases in Liberia has started to decline over the past month, the epidemic in Sierra Leone still shows no sign of coming under control any time soon.

Sierra Leone has a population of approximately 6 million people and even before Ebola struck, this nation was considered one of the worst in Africa in terms of life expectancy at birth (45 years for men, 46 for women) and other health indicators, as well as expenditures on health per capita. According to the UN Development Programme, the extreme poverty and low educational attainment in Sierra Leone account for its awful human development index (HDI)—today Sierra Leone ranks 183rd out of the 187 countries ranked according to their HDI. These factors, together with a decade-long civil war that ended in 2002, played an important role in disabling Sierra Leone’s health system and enabling Ebola virus infection to reach epidemic levels. As a result, WHO is aggressively working to rebuild Sierra Leone’s health system while simultaneously combating the Ebola outbreak.

Adding to Sierra Leone’s woes is a new finding from an extensive study of intestinal helminth infections in sub-Saharan Africa, which was led by scientists at the Swiss Tropical and Public Health Institute. They estimate that, of the 800 million people who live in sub-Saharan Africa, approximately 130 million (16%) suffer from human hookworm infection. The study also showed that Sierra Leone is tied with Togo as the most hookworm-endemic country in Africa, with 34% of the population infected with hookworms. Moreover 22% of the populations of Liberia and Guinea are also affected.

Is there a link between hookworm and Ebola in Sierra Leone? Although it is known that hookworms can increase susceptibility to certain viral infections, if there is an Ebola-hookworm link it is probably less direct. Of greater relevance is the observation that hookworms can live for years in the gastrointestinal tract of infected children and pregnant women to produce moderate to severe iron-deficiency anaemia. A *Global Burden of Disease Study* found that hookworm is a leading cause of anaemia in impoverished developing countries. The consequences of hookworm anaemia are profound both in terms of health and economic development. It robs children of intelligence points and cognitive abilities, while in adults it reduces worker productivity and causes increased maternal morbidity and mortality among infected pregnant women—hookworms are estimated to complicate more than 7 million pregnancies in Africa at any given time. Through these mechanisms hookworms can actually promote extreme poverty in a country such as Sierra Leone. Thus, hookworms could indeed be an important underlying factor in Sierra Leone’s ability to cope with an outbreak of Ebola.
To combat hookworm infection in sub-Saharan Africa and elsewhere, a new HOOKVAC consortium has been established to develop a new vaccine to prevent hookworm infection. Supported by the European Union and based on technology first developed by the Sabin Vaccine Institute product development partnership, HOOKVAC has started clinical testing of a new recombinant protein-based hookworm vaccine in the African nation of Gabon, where the rates of hookworm infection are also high. The term “anti-poverty vaccine” has been used to describe this technology because of the potential for a human hookworm vaccine to not only improve the health of 130 million children, pregnant women, and other African populations affected by this disease, but also to begin lifting them out of poverty and improving their future wage-earning. Outside of Africa, hookworms affect another 300 million people in the poorest countries of Asia and the Americas.

Through HOOKVAC, we will learn whether a new human hookworm vaccine is both safe and effective at preventing disease. Success on this front could mean great things for the people of Sierra Leone and other countries affected by this terrible poverty-promoting parasitic infection.

This is a joint post with Remko van Leeuwen, Project Director of the EU-supported HOOKVAC Consortium.
Adding it up: the costs and opportunities of universal access to contraception services

Ann Starrs

Despite significant improvements in access to contraceptive services over the past decade, there are still 225 million women living in developing countries who want to avoid pregnancy but are not using modern contraception. The consequences are huge: 74 million unintended pregnancies, 28 million unplanned births and 20 million unsafe abortions each year. In addition, tens of millions of women do not receive the basic pregnancy and delivery care they need to protect their health and that of their newborns.

There are millions of stories embedded in those figures: an adolescent girl, married or not, who knows that pregnancy will mean the end of her schooling and, most likely, the end of her dreams for a better life. A married woman who has 4 or 5 or 6 children already and knows she cannot afford to bear and raise another one, either in terms of her health or her pocketbook, and is desperately seeking an abortion as her only option. A pregnant woman living with HIV who cannot access the medicine she needs to prevent transmitting the virus to the baby she is carrying.

Being able to decide on the number and spacing of one’s children, and having a healthy pregnancy and childbirth, are basic human rights, and are fundamental requirements for enabling women to achieve their full potential—to get an education, to earn a higher income, to feed and care for their children, to contribute to their communities and ultimately build stronger nations.

So what would it cost to make these rights a reality? The Guttmacher Institute’s new report Adding It Up 2014 has done the math: Investing $25 per year per woman would provide a basic package of essential reproductive health services to protect the health of all women and newborns in the developing world. These services include contraception; pregnancy, delivery and newborn-related care, including care and medicines for pregnant women living with HIV; and treatment for other common sexually transmitted infections.

Furthermore, investments in modern contraceptive services actually save money as well as lives: For every additional dollar invested in preventing an unintended pregnancy, nearly $1·50 is saved in pregnancy-related care. And by satisfying all unmet need for reproductive health care, the number of unintended pregnancies and maternal deaths would plummet by nearly 70%, newborn deaths would drop by 77%, and new HIV infections in newborns would be almost eliminated.

The majority of these health benefits would be seen in the poorest countries, where health systems are generally...
the weakest. There are huge disparities in use of services between poor and wealthy countries, and between poor and wealthy women within countries. In sub-Saharan Africa, for example, 58% of women who want to avoid pregnancy are not using modern contraception; that figure is 73% among the poorest women, and 46% among the wealthiest income group. The discrepancies are even larger for maternal health services; in Asia (not including China) the proportion of women who deliver their babies in a health facility is 32% for the poorest women and 92% for the wealthiest. Ensuring universal access for everyone, and specifically targeting the poorest and most disadvantaged, would have a huge impact on improving health and survival in these societies.

It is clear why we must act, how much we need to invest, and the enormous benefits that will accrue when we do. The global community—national governments and international donors—needs to act quickly to ramp up investments in sexual and reproductive health services. As governments and international agencies consider development goals for 2015 and beyond, they should prioritize universal access to sexual and reproductive health services: ensuring access to these services is a cornerstone of sustainable development, and every woman’s right.
Tragedy continues to unfold in Bhopal

Dinesh C Sharma

It was on the night of December 2, 1984 when fumes of toxic methyl isocyanate (MIC) gas leaked from the pesticide plant of American company, Union Carbide, in Bhopal killing thousands of people and injuring several others. It was the worst ever industrial disaster to have taken place anywhere in the world since the beginning of the industrial revolution. Three decades on, the wounds are still to heal and people in Bhopal continue to suffer. Why is it that the world—India’s federal and local governments in particular—has failed to give justice to victims of the Bhopal gas tragedy?

An estimated half a million people were exposed to MIC which leaked from the pesticide plant located in thickly populated part of Bhopal. The leak was a result of unsafe industrial practices followed by Carbide as part of cost cutting measures it followed. All warning signals such as smaller accidents and leaks were ignored, and the Madhya Pradesh (MP) state government agencies too overlooked all safety standards. People living close to the plant nor local authorities were told about antidotes to MIC or safety precautions in case of an accident.

Exposure to MIC killed 7000 to 10 000 people within three days of the leakage and another 15 000 to 20 000 people are believed to have died due to long-term effects of the toxic gas over the next twenty years, according to an Amnesty International report which challenges mortality and morbidity data of Indian agencies. Lingering effects of MIC exposure continue among survivors who suffer from a range of respiratory, ophthalmic, reproductive, endocrine, gastro-intestinal, musculo-skeletal, neurological and mental disorders.

After a disaster of this magnitude, one would have expected Indian government agencies to initiate long-term follow up, treatment and rehabilitation of survivors and their families. A number of hospitals were established in Bhopal, research studies were initiated by federal agency—Indian Council of Medical Research (ICMR) and MP government established a new department for ‘gas relief and rehabilitation’. These turned out to be sub-optimal, unscientific and ill-planned efforts that failed to benefit survivors in any way.

Research studies were given up mid-way, data was collected but not fully analysed and the original cohort for research was lost. ICMR folded up its research efforts after ten years and then handed over the baton to the MP government which did not have any scientific expertise to carry forward follow up the cohort. Only in 2010 did ICMR establish a new research centre in Bhopal—National Institute for Research in Environmental Health (NIREH)—which soon got mired in several controversies.

A cohort of 80 021 persons living in gas-affected areas was recruited by ICMR soon after the disaster while 15 931 persons from areas not exposed to MIC served as control. Of them, just 16 860 exposed and 5741 from control areas were actually available in 2010, according to Technical Report on Population-based Long-term Epidemiological Studies Part II (1996–2010) published by the agency in 2013. Given massive cohort loss of 79% in affected and 64% in control areas over the 25-year period, experts and action groups thrashed as unrepresentative of the problem though it did point to substantial acute and on-going adverse health impacts in those exposed.

Apart from long-term impacts arising out of exposure to MIC among survivors and their offspring, communities living around the closed factory site are being exposed to additional health hazards from legacy pollution of the carbide plant. It may be shocking for the rest of the world to know that even after three decades the site of the accident...
has not been remediated. Stockpiles of toxic chemicals used in production processes, intermediary chemicals and finished products have continued to remain at the factory site which for many years was not even properly fenced.

While the factory was in operation from 1969 to 1984, all solid, liquid and tarry waste was improperly disposed in several dumps within the factory premises and in three solar evaporation ponds located outside the premises. Over the decades, all this chemical waste has leached into surface and groundwater. Residues of chemicals from Carbide plant have found their way into food chain and traces discovered even in human milk. Yet Indian government agencies and scientific bodies continue to squabble over remediation plans.

The charter of demands sent by survivor organizations on December 2, 2014, to the Indian Prime Minister lists 23 points on which action is needed from the federal government, MP government, American government and the corporate sector. Going through this charter, one would feel that the disaster in question has taken place only yesterday and not in 1984. The criminal and civil liabilities are still pending in Indian and American courts, the number of people affected by the leak is still contentious, there is dispute on amount of money paid as compensation, treatment protocols for survivors are not in place, the site of disaster has not yet been cleaned and survivors continue to die a slow death. The world has failed Bhopal.

The writer is a journalist and author based in New Delhi. His latest book is *Know Your Heart: The Hidden Links Between Your Body and the Politics of the State.*
A case for democratising global health diplomacy

Ophira Ginsburg and Richard Sullivan

Nations seek to enhance their economic opportunities and geopolitical power primarily through trade and security policies, the objectives of which often intersect with health issues. The WHO Framework Convention on Tobacco Control, the International Health Regulations (IHR) and the rapid global response to SARS and pandemic H1N1 have been generally viewed as positive examples of international cooperation for the global public good. However, the economic losses incurred in countries most affected by SARS and the growing international criticism of WHO and the IHR in light of the woefully inadequate global response to the current Ebola epidemic present difficult questions about our national and global priorities.

Notwithstanding some successes, more often than not national self-interests are at odds with global health objectives. This is perhaps best highlighted by opposition to the World Trade Organization’s Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). TRIPS is viewed by many global health advocates and anti-globalization activists as a stark example of where national trade objectives trump health rights, by hampering efforts to make essential medicines affordable and accessible in low- and middle-income countries. Developing country and civil society pressures led to the 2001 Doha Declaration on TRIPS and Public Health, which reaffirmed and expanded upon the flexibilities countries have to issue compulsory licenses or imports of low-cost generic versions of patent drugs when facing a public health emergency. But high-income countries with powerful commercial interests in pharmaceuticals have been removing some of these flexibilities in so-called ‘TRIPS+’ agreements, underscoring the ongoing tension between health goals and private economic interests in foreign policy practice.

Perhaps a more contentious example is the use of health interventions by state and non-state organisations to further foreign, specifically national security, policy objectives. Civilian-military health diplomacy is an increasingly important aspect of NATO and USA military doctrine…winning hearts and minds with an ear to the ground is the new American way of war. This is in spite of the fact that many policy analysts argue that there is little evidence of the efficacy of militarised health in terms of foreign policy gains, and significant opposition from international humanitarian medical agencies. MSF is especially vocal about the problems their staff face as the conflation of military operations and health delivery erode community trust, whilst armed groups become skeptical of the impartiality of “real” humanitarian workers, accusing them of supporting one or another side in conflict zones.
With increasing globalization has come rapid urbanization, deforestation and other forms of habitat encroachment which increase animal-human contact. These changes along with increasing global air travel have made infectious diseases control a key aspect of health in foreign policy. The catastrophic spread of Ebola in Western Africa has yet again focused our attention on the unpreparedness of the global community in such crises. Furthermore it has already had unanticipated impacts on even the most independent of humanitarian agencies, most notably the exceptional volte face of MSF calling for militarised interventions to control and stabilise the worst affected countries. Yet, while global infectious threats may be considered in the “high political” frames of security and trade/economics, even these are only prioritized when perceived as an obvious direct threat to a country’s national interests.

It is easy to surmise why, despite their far greater burdens of premature deaths and disability, the non-communicable diseases (NCDs), maternal and child health and other “non-securitized” public health threats have not yet been given the same weight in any states’ foreign policy agenda. The UN 2011 high-level meeting on non-communicable diseases (NCDs) was only the second such UN meeting regarding a health issue, the first being it’s Special Session on HIV/AIDS in 2001 and a third, more recently, on Ebola in 2014. But aside from ethical and human rights motivations or, for those governments less idealistic, for the sake of good optics, no real incentives exist for states to take the necessary actions required in the immediate term to address growing health inequities. Compliance with the ambitious mandate of the forthcoming Sustainable Development Goals will be solely voluntary. So what incentives need to be developed, and how might the democratization of global health diplomacy play a role?

The newly minted concept of Global Health Diplomacy (GHD) captures a multi-level and multi-sector policy process that shapes and manages the global environment for health, by integrating the ‘high’ politics of foreign diplomacy with the ‘low’ politics of global health. Several high-income countries have created discrete offices or centres for GHD, most notably the USA’s Office of Global Health Diplomacy within the State Department to which former U.S. Global AIDS coordinator, Dr Eric Goosby was appointed as its first ambassador. But the North-South directionality implied in this definition of GHD is increasingly being challenged by the new development models emerging from low- and middle-income countries that have achieved financial self-sufficiency regarding health, some of which have since become aid donors and international suppliers of health technologies. Cuba’s long-standing success in exporting medical staff and providing training opportunities to build local capacity in Latin America and sub-Saharan Africa provides a salient example of South-South engagement to pursue GHD.

Improving health globally will increasingly rely on global health diplomacy and policy driven by experienced, well-informed front-line health workers be they clinicians, epidemiologists, public health experts, educators, logisticians and others working collaboratively between countries to drive long term partnerships. Democratising GHD can give drive and ownership to grass roots social enterprises to develop and test real-world solutions to global health challenges. Non-state actors can engender grassroots trust through soft power far more effectively than governmental representatives. Person-to-person and inter-institutional collaborations enhance the mutual sharing of knowledge and resources. There are also a growing number of global health curricula in high-income countries, from the undergraduate level through to and post-doctoral programs. Among these graduates will be countless potential global health diplomats.

The efforts needed to make real impact on the growing health equity gap between countries surely must include more than just governments, national consular offices and bureaucratic chains of communication. Sustained progress will require evidence-informed implementation alongside high-level meetings, action plans and commissioned reports. The latter are important, but there is no substitute for locally-resourced, rigorously conducted research on the impact, risks and benefits of health interventions. The evidence-base from local programs must be expanded and shared widely to inform global health policymaking. The impact and sustainability of successful health interventions might be greatly enhanced through democratising GHD, for example by bringing into foreign policy and trade discussions more people with hands-on field experience in global health. Likewise, ensuring that foreign policy and trade experts are invited to contribute to global health policy discussions will improve multi-sectoral communication and can encourage policy coherence.

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Walk and chew gum: why bold investments can help stem multiple health crises simultaneously

Erin Hohlfelder

Ebola has generated news around the world this autumn as an unprecedented global health crisis requiring urgent global action. At the same time, far from the headlines, millions of children continue to die from simple, preventable diseases like pneumonia and diarrhoea. Vaccines are some of the lowest-cost, highest-impact ways to help reduce these preventable child deaths, and yet today nearly one in five children around the world does not have access to these life-saving interventions.

Gavi, the Vaccine Alliance, finances the purchase of vaccines in more than 70 of the world’s poorest countries and works actively to shape vaccine markets, aimed at generating more suppliers and lower prices. As an alliance of national governments, donors, the private sector, and technical health partners such as WHO and UNICEF, Gavi draws on the unique skills of many actors to ensure better collaboration, innovation and results.

To date, Gavi has had tremendous success in strengthening developing countries’ immunisation programmes and saving children’s lives. Through donor contributions, innovative financing streams, and increasing amounts of country co-financing, Gavi has supported the immunisation of some 440 million children and has saved more than 6 million lives since 2000.

Multilateral aid reviews by British, Swedish, and Australian governments each place Gavi among the top performers in terms of value for money, organisational strengths, and contribution to development. For the past 2 years, Gavi has also ranked in the top 5 of the Publish What You Fund aid transparency index.

But even the most effective health programmes cannot continue to succeed without new funding. Gavi relies on a growing pool of donor resources and country co-financing to successfully implement its strategy. In order to continue scaling up its important work, Gavi will need an additional $7.5 billion from donors for 2016–2020, culminating in a replenishment meeting hosted by Germany in late January 2015. If it can mobilise these resources, Gavi projects that this support could immunise an additional 300 million children and save 5–6 million more lives.

Over the coming months, world leaders will decide how much they are willing to invest in Gavi. Early signs from donors are promising, with at least $1 billion pledged from the Norwegian Government and an increase from the European Commission in an otherwise flat budget environment. But overall success is far from guaranteed and many donors must match their own bold rhetoric with bold new pledges. In particular, our eyes are on countries including the USA (where President Obama highlighted ending preventable child deaths in his State of the Union speech), Canada (where Prime Minister Harper has focused
significant political attention on maternal, newborn, and child health issues), Japan (which to date has contributed by far the least to Gavi of the G7 members), and Germany (which will want to make the hosting of replenishment a success and generate momentum ahead of the G7 Summit in June). These donors and also their peers (looking at you, UK, France, Italy, Sweden, and Australia!) have a choice to make about what message they send and how many lives they want to save.

Global health emergencies like Ebola may grab headlines, thereby threatening to tamp down on governments’ ambition for bold commitments in other areas. But it is in fact these emergencies that show us why it is more important than ever to step up investments in complementary health programmes that can save lives and help build up systems.

The Ebola crisis highlights that we cannot be satisfied with insufficient resources for Gavi, or for any one health programme. Indeed, we must re-evaluate how we can invest in and build more resilient health systems across some of the world’s poorest countries, because the toll of Ebola has extended far beyond the 5000 deaths it has caused directly. New data show that routine immunisation rates have dropped from 97% to a staggering 27% this year in Liberia alone—to say nothing of its effects on malaria control programmes, maternal health programmes, and care-seeking behaviour more broadly. Until we can ensure that even the most fragile countries are prepared for future outbreaks, many of the hard-earned gains in global health to date stand to crumble with alarming speed.

As we approach the 2015 deadline of the current Millennium Development Goals (MDGs), the world has made impressive gains on reducing child deaths (MDG 4). Indeed, in 1990, there were nearly 12.7 million under-5 deaths—we have roughly halved that number today. Yet at current rates of progress, the world will not meet MDG 4 until 2026, which would result in tens of millions of deaths that would not have happened if the goal had been met on time. This is unacceptable. In order to reverse these trends and make faster progress, donors must prioritise resources for programmes like Gavi, which will save children’s lives in the most cost-effective ways, alongside resources for Ebola and other threats.

We as a global health community have to be able to walk and chew gum at the same time, ensuring that preventing a death from Ebola doesn’t mean a child dies from another preventable disease instead. The world has the power to ensure we both contain the Ebola outbreak and make sure all children can grow up healthy, regardless of where they were born. But doing so will require leaders around the world to step up their political will and their resources to tackle these challenges together, with urgency.
The role of universities and NGOs in a new research and development system

Chris Redd

On May 14, 2014, a British Parliamentary Committee on Science and Technology wrote to the minister in charge of science and universities, David Willetts, to warn against Pfizer’s mooted takeover of AstraZeneca. The $69 billion bid stirred controversy in the UK, because it was seen as a threat to British science and the public interest. These discussions approached the fundamental problems of our research and development (R&D) system, exposing serious concerns about all aspects of the pharmaceutical business model. More recently, Ebola and antibiotic resistance have kept our attention on the pitfalls of commercially driven drug development. Coupling that with soaring prices on new drugs for cancer and hepatitis C, one sees a growing consensus across all sectors on the need to change. An international coalition of patients, clinicians, students, civil society, and politicians is beginning to face up to a system that is desperately close to breaking.

The words of Paul Hunt, former UN Special Rapporteur on the right to the highest attainable standard of health, seem finally to be striking home. Pharmaceutical companies exist to fulfil a function in society, Hunt said in 2009, and so “they must demonstrably do everything possible...to fulfil their social function and human rights responsibilities.” Following this logic, a system which does not honour human rights is dysfunctional and is one we need to change.

Current attitudes are summed up in a recent report from the UN Conference on Trade and Development, which concludes that the R&D system is simply falling apart, even citing pharma executives in its analysis. On the global scene, progress has been made too. The WHO has finally begun to implement the suggestions of the Consultative Expert Working Group. At the 67th World Health Assembly, the four demonstration projects, albeit less-innovative ones, were approved, and a resolution was adopted for the establishment of a pooled funding mechanism.

The non-profit sector has already begun to move into this space, with DNDi exemplifying a burgeoning non-profit sector in drug development. Other notable examples include Bioventures for Global Health, and the Medicines for Malaria Venture. The public-private partnership (PPP) model has been shown to be effective—if only because there is no other way to access the vast drug libraries of pharmaceutical companies. Even within the PPP model, reflecting a broader theme, commercialisation is seen as a
tiny motivating factor. Some of the most promising cases of drug development are the open source initiatives, which abandon the traditional paradigm of patent monopolies in search of a more collaborative approach.

At the same time, a competing dialogue has been developing. Encouraging a British Invention Revolution by Sir Andrew Witty, CEO of GlaxoSmithKline and Chancellor of the University of Nottingham, was published this summer. The report, commissioned by the UK government, calls for universities to serve a third function in addition to education and research: to facilitate economic growth as a core strategic goal.

Witty’s report represents a secondary discussion on new R&D, and one which must be given due attention. While to some they may seem innocent and well-meaning, arguments like this are behind legislation such as the Bayh-Dole Act in the US, which has driven universities to patent their research. Making university research funding dependent upon the economic growth it produces is tantamount to tying the research agenda to profit. Under the watches of pseudo-democratic organisations such as the World Trade Organization, this model is exported the world over, often in exchange for supposedly favourable trade agreements.

Universities, as centres of public science, must not be co-opted by commercial interests under the guise of economic growth. The Manchester Manifesto emphasises the reciprocal relationship between science and society, working together to further public understanding and promote mutual benefit. Universities have a social function, which is demonstrably not to make money. The steps they can take to honour human rights, for example, stretch far and wide.

And yet universities themselves have been sluggish to respond. In the UK, six universities have spoken publicly about the need to balance commercial interests with ethical ones, starting with Edinburgh in 2009, and most recently including the University of Exeter this August.

These statements, however, were the result of student activism rather than episodes of altruism. Furthermore, it seems absurd that universities don’t already consider the ethical aspects to their decisions. Finally, these commitments are often vague and non-binding, lacking in concrete steps and processes of reporting or evaluation. Unfortunately, universities in the rest of the world are not doing much better. At the moment, the most comprehensive data on the subject show that, by and large, (US) universities are falling short.

There are signs, at least in the licensing of health technology patents, that things are beginning to change. In July, a report by the UK All Party Parliamentary Group on Tuberculosis called for socially responsible licensing to be implemented across all UK research funding. On the international level, India and others have spoken in the World Trade Organization at length to try to reframe the way universities are perceived in R&D.

One of the best examples of the importance of the public versus private science debate is the Human Genome Project. It may seem absurd, but Sir John Sulston and colleagues were actually forced into a race to keep the Human Genome in the public domain. Fortunately, they succeeded in safeguarding this knowledge for society, and taught us a lesson we must not forget.

In the first Access 2 Medicines week (November 1–7, 2014), the members of Universities Allied for Essential Medicines attempted to bring this debate to the public by providing a platform for all parties to add their voice to the discussion. With their petition, they hope to convince universities that, as hubs of innovation, universities have the potential and responsibility to deliver great advances in global health, and that they can lead the way in establishing a new, open R&D paradigm based on collaboration.
Breaking the R&D deadlock: could Open Labs be the key to cracking the world’s toughest health problems?

Leszek Borysiewicz

In January, 2010, an unprecedented step was taken to progress research into diseases of the developing world when global pharmaceutical company GSK announced it was creating the world’s first Open Lab. The doors of its Tres Cantos diseases of the developing world research facility just outside Madrid would be unlocked and external researchers would be invited in, to work alongside GSK scientists. 4 years since its creation, the Open Lab model is emerging as a success story. The Tres Cantos facility is now a thriving international hub for research into diseases of the developing world and GSK is currently establishing a second Open Lab for research into non-communicable diseases in Africa. There’s now a growing consensus that this open innovation approach is key to tackling disease in the developing world.

It’s imperative that we find new, better treatments for the diseases affecting the world’s poorest communities. Primarily because the scale of human suffering at the hands of these diseases is immense and we have a responsibility to address this. But also because helping people live more productive and prosperous lives will inevitably boost economic development in these countries, the positive effects of which would reverberate globally.

Yet despite the evident benefits, investment has been scarce. The biology of many diseases of the developing world is notoriously complex and when this is viewed in the context of the limited commercial opportunity in this field, it’s not hard to see why companies have shied away from investing. Based on a recognition that the challenges of this area are too great for any single country, organisation, or government to succeed alone, the Open Lab has turned the traditional R&D model of closed innovation—of companies working behind closed doors and guarding the findings of their research—on its head. Here, external researchers from leading research institutions around the world are invited to work with GSK scientists on their own projects, accessing GSK drug discovery and pre-clinical expertise.

This is open innovation at its best. With this intensely collaborative mindset, The Tres Cantos Open Lab has created a “safe environment” with no strings attached, which has encouraged scientists to openly discuss their research, share data, work across scientific boundaries and institutions, and disseminate knowledge through joint publications.

While it’s still too early to evaluate the success of the Tres Cantos Open Lab in terms of drug approvals, it’s safe to say the Open Lab approach has been an unprecedented success in encouraging research into diseases of the developing world and in creating an energy and excitement in this field that was previously lacking.

In less than 4 years since its establishment, the Open Lab has received more than 150 grant applications and approved 42 projects, involving 37 different organisations in 14 countries.

This success has led GSK to apply what it’s learned from the Open Lab model to help kickstart research that could ultimately lead to new and better treatments for non-communicable diseases (NCDs) in Africa. The unique manifestations of certain NCDs, like diabetes and cancer, in the African sub-continent and in other less developed countries have long perplexed even the brightest scientific minds and there is an urgent need for further investment in this field.

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Yet despite the evident benefits, investment has been scarce. The biology of many diseases of the developing world is notoriously complex and when this is viewed in the context of the limited commercial opportunity in this field, it’s not hard to see why companies have shied away from investing. Based on a recognition that the challenges of this area are too great for any single country, organisation, or government to succeed alone, the Open Lab has turned the traditional R&D model of closed innovation—of companies working behind closed doors and guarding the findings of their research—on its head. Here, external researchers from leading research institutions around the world are invited to work with GSK scientists on their own projects, accessing GSK drug discovery and pre-clinical expertise.

This is open innovation at its best. With this intensely collaborative mindset, The Tres Cantos Open Lab has created a “safe environment” with no strings attached, which has encouraged scientists to openly discuss their research, share data, work across scientific boundaries and institutions, and disseminate knowledge through joint publications.

While it’s still too early to evaluate the success of the Tres Cantos Open Lab in terms of drug approvals, it’s safe to say the Open Lab approach has been an unprecedented success in encouraging research into diseases of the developing world and in creating an energy and excitement in this field that was previously lacking.

In less than 4 years since its establishment, the Open Lab has received more than 150 grant applications and approved 42 projects, involving 37 different organisations in 14 countries.

This success has led GSK to apply what it’s learned from the Open Lab model to help kickstart research that could ultimately lead to new and better treatments for non-communicable diseases (NCDs) in Africa. The unique manifestations of certain NCDs, like diabetes and cancer, in the African sub-continent and in other less developed countries have long perplexed even the brightest scientific minds and there is an urgent need for further investment in this field.

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Launched by the company in March 2014 with a commitment of £25 million funding over 5 years, the Africa NCD Open Lab will create an innovative research network focus on improving understanding of the causes, presentation and progression of disease in this setting, and to inform prevention and treatment strategies of NCDs in African patients.

GSK has today launched the first call for proposals for the Africa NCD Open Lab, inviting researchers in sub-Saharan Africa to join this open innovation network. Up to £4 million is being made available in this first funding round, to support successful proposals from researchers in Côte d’Ivoire, Cameroon, Ghana, The Gambia, Nigeria, Kenya, Uganda, and Malawi.

The Open Lab approach is gaining widespread support and significant financial endorsement from the wider research community. In 2013, GSK was awarded £5 million by the Wellcome Trust in support of its open approach, providing an opportunity to progress the most promising projects in the Tres Cantos Open Lab portfolio to the next phase of drug development. And the South African and UK Medical Research Councils have pledged a combined total of £4 million to support South African researchers doing research into NCDs in Africa, aligned with the objectives of GSK’s Africa NCD Open Lab.

Given its successes to date, it’s not hard to see the Open Lab approach extending to other areas where the traditional R&D model is failing to reap results. Areas where complex disease mechanisms aren’t sufficiently understood, or where successful drug development and launch has proven difficult, or where costly R&D and low potential return impedes commercial models could all benefit from increased openness and joint working.

All future open innovation approaches can learn much from the Open Lab model, at the heart of which is a communal commitment and sense of urgency to finding solutions to global health problems the world has lived with for far too long.

This is a joint post written by Prof Sir Leszek Borysiewicz, Chair of the Tres Cantos Open Lab Foundation Board, and Vice-Chancellor of the University of Cambridge; Dr Mike Strange, GSK’s Head of Operations for Diseases of Developing World R&D and Interim Head of the Africa NCD Open Lab; and Prof Rifat Atun, Professor of Global Health Systems at Harvard University.
An overlooked WWI legacy: maternal and child health in sub-Saharan Africa

Chris Simms

An important legacy of World War I was the rise of maternal and child health care in many European centres; a related yet overlooked legacy is the simultaneous transfer of these services to their colonial possessions during the years of conflict and those immediately following.

In England, the surge of maternal and child health care was prompted by humanitarianism and concerns about the loss of lives, plummeting birth rates, a depleted workforce, and the ability of the Empire to defend itself. Women’s groups, medical associations, religious charities, and other parts of civil society contributed to the development of services. The provision of antenatal care, delivery assistance at birth, and health education in the areas of hygiene and nutrition—together with a better standard of living—led to improved health outcomes: infant mortality rates which declined by 7% from 1905 to 1913 fell by 20% during the period 1914–18. In some industrialised centres with little evidence of wage increases or water and sanitation improvements, infant mortality rates still fell significantly; in Wigan, England, it declined from 179 deaths to 117 (per 1000 livebirths) between 1913 and 1919.

Colonial administrators expressed similar concerns in sub-Saharan Africa during the war years about very high levels of infant mortality and the viability of the local workforce. The Imperialist rhetoric at the time was to introduce “modern and civilizing ideas” to the colonial possessions; the introduction of maternal and infant health in particular, “was designed to improve the colonial labor supply, pacify indigenous populations and promote modernization”. The rise of humanitarianism and volunteerism seen in England spilled over into the colonies through volunteerism and provided the means to deliver maternal and child health services to Africans, mainly by medical missionaries.

Although reliable household survey data show that maternal and child health care has a large impact on childhood mortality (which is typically 50–100% higher for women who receive no antenatal care or delivery assistance at birth than for women who receive both) and medical missions provided 25–50% of maternal and child health care in sub-Saharan Africa throughout most of the 20th century, “little scholarship addresses their influence on African health care and health status” and a vast mission archive remains almost completely unexplored. This neglect is partially explained by the justifiable view that traditional missionaries (as distinct from the new breed of independent evangelists) were a colonial construct used to justify the actions of imperialist powers, and generally an embarrassment to academics.

Yet from the medical or public health point of view, evidence from Tanzania, Zambia, and many other parts of sub-Saharan Africa would suggest that traditional medical
missions have been professionally staffed and managed—at least since the 1960s independence era. Indeed, studies suggest that, rather than being a source of embarrassment, medical missions have shown what can be achieved when health initiatives are planned and implemented as if ordinary people mattered. Delivered mainly by women working at the grassroots level, often incorporating local knowledge and sometimes reproducing “aspects of indigenous models of the healer”, they provided, in essence, family-centred health care.

Furthermore, medical missions often protected the communities they served from some of the most egregious policies implemented by the international community. For example, over the past 30 years or so—an era of deregulation, free flow of capital, and proliferation of other neoliberal policies—the IFIs and donor aid agencies (by their own account) implemented adjustment operations and health-sector reforms without paying attention to their impact on the most vulnerable. Their austerity measures typically led to a 50% cut in health-care expenditures in sub-Saharan Africa, a collapse of health-care systems, and a reversal of child survival trends.

In Zambia, where maternal and child health care fell into disarray and infant mortality rates skyrocketed, the World Bank (without a trace of irony) reported that “the people have nowhere to turn for help. Those (rural) buildings which have been historically PHC centers or district hospitals are empty shells. Many institutions are losing qualified health personnel, are utterly devoid of basic health materials”. Yet in districts where medical missionaries delivered basic services to Zambians, quality and access by the poor were generally maintained by staying focused on the careful allocation of scarce resources to cost-effective care that targeted the most vulnerable. Although their catchment areas were more geographically remote, had higher levels of poverty and childhood malnutrition, more female-headed households, less food security, and were more vulnerable to drought, they provided 75% more assisted deliveries per head than non-mission districts and had childhood mortality rates that were 12% lower. In fact, so striking were the differences that statistical analysis of district data showed that neither poverty nor malnutrition but rather access to maternal and child health services explained variation in child survival.

As HIV gripped Africa in the 1990s, mission health facilities with strong community care networks were well placed to tackle the crisis at the local and household level and typically responded a full 10–12 years before the international donor community and national governments took substantive action. By 1988, mission facilities in Mbeya, Tanzania, for instance, had already launched robust programming that included a sweeping condom distribution initiative, voluntary counselling and testing, community education programming, home-support programmes, and eventually prevention of mother-to-child transmission programmes. In contrast, the World Bank, the lead donor in Africa’s health sector, repeatedly eschewed involvement in the pandemic in favour of its health reform package. It warned in 1992 that, “an expanded role of the Bank in AIDS should not be allowed to overtake the critical agenda for strengthening health systems”. It was only by 2000 that the donor community began to invest in the prevention and control of HIV, by which time 30 million Africans were dead or dying.

Negative sentiments towards missionaries have been bolstered in recent years by some Christian fundamentalists who have sought abstinence-only approaches to HIV prevention and by the appalling rhetoric of mission fringe groups that has encouraged the criminalisation of homosexuality in parts of sub-Saharan Africa—notwithstanding the bearing of which have a bearing on the traditional medical missionaries under discussion. The risk, however, of dismissing missionaries as an embarrassment, too “intimately tied up with colonialism and exploitation” is that a one-sided view of events persists unchallenged (that of the military and bureaucracy); it means missing the opportunity to obtain a bottom-up view of colonial and post-colonial history, one that incorporates the voice of ordinary people (the so-called subalterns). Ironically this is the type of information that most national aid agencies now insist on when taking a “livelihoods approach” to development.

It also implies that lessons-to-be-learned are neither identified, nor acted upon, and that past mistakes will be repeated. For some, of course, failure to design and implement development strategies as if ordinary people mattered would help explain repeated policy miscues and the rise in inequalities in sub-Saharan Africa over the past 30 years. The simultaneous rise of maternal and child health care in sub-Saharan Africa and England is interesting because both were driven by the practical and the altruistic—a good combination when enduring social policy is the objective.
The role of quality improvement in maternal and newborn health beyond 2015

Mamuda Aminu and Nynke van den Broek

Although substantial progress has been recorded since the launch of the Millennium Development Goals (MDGs), it is clear that many of the targets, particularly those related to maternal and newborn health, are lagging behind. Recent estimates published by the World Health Organisation (WHO), in collaboration with other bodies, indicate that globally up to 289 000 women die annually during pregnancy, childbirth or within six weeks of delivery, with developing regions accounting for 286 000 (99%) of the deaths. In addition, over 2.7 million babies die within their first month of life and another 2.6 million are stillborn. What role can quality improvement play in consolidating the gains from MDGs and improving patient-focused care beyond 2015?

Coverage for maternal and newborn health care services has improved significantly in many settings over the last two decades, with increasing numbers of women accessing health care services and improvements recorded in maternal and newborn health (MNH) outcomes—it is critical that the quality of care does not lag behind.

In a classic definition, Donabedian defined quality in health care as “the application of medical science and technology in a manner that maximises its benefit to health without correspondingly increasing the risk”. Quality of care should go hand-in-hand with coverage, however, it has received insufficient attention in the work monitoring towards achieving the MDGs.

The problem

More studies in developing countries are reporting high numbers of mortalities occurring in health facilities. In Bangladesh, Halim et al reported that of 571 maternal deaths occurring over a one year period in four districts, reviewed using verbal autopsy, almost half (48%) occurred in health facilities. Moreover, a recently concluded study by Mgawdere et al (not yet published) found that 62.3% of maternal deaths in one district of Malawi occurred in health facilities.

The majority (two-thirds) of the estimated 2.7 million annual deaths among newborn babies across the globe occur in the first three days of life. These are mainly as a result of infections, complications of prematurity, birth trauma, and birth asphyxia. In fact, WHO has estimated that 1.4 million newborns could be saved through neonatal care if it becomes labelled as a “Life-saving” care package.

Despite the significant advances in developing countries, much remains to be achieved in order to meet the MDGs. For example, the Global Newborn Action Plan (GNAP) goals to reduce stillbirth rate by 40% and neonatal mortality by 42% are far from being achieved. The maternal mortality ratio (MMR) in sub-Saharan Africa remains alarmingly high compared to the rest of the world. For example, Nigeria still maintain the highest maternal mortality ratio in the world, which is 928/100,000, whereas the UK maintains a ratio of 9/100,000. It is critical that maternal mortality rate (MMR) is reduced to meet the MDGs.

In order to achieve the MDGs and beyond, improvements in quality of care are necessary. This includes increasing the availability of skilled healthcare workers, improving the technical competence of healthcare workers, and improving the delivery of MH services. There is a need to focus on quality improvement in the delivery of care in health facilities and to incorporate these improvements into the MDGs goals.

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result of complications (such as prematurity and low birth weight, birth asphyxia and newborn infections) that relate to the quality of care mothers and babies receive during birth and in the first 24 hours of life.

Way forward
Quality of care can be viewed from three angles: health managers’, health care providers’ and patients’ perspectives. However, in many settings where quality improvement measures are being implemented, the patients’ viewpoint is still usually at the bottom of list of priorities.

Meaningful improvement in quality of care can only be achieved if attention is given to quality issues from the patients’ viewpoint by adopting patient-reported outcome measures generated from patients who regularly access and use healthcare services. The resultant benefits of such an approach will improve patient satisfaction and ensure a higher chance of seeking care.

A number of strategies have been employed to improve quality of care with varying levels of success. Mortality and near-miss reviews have proven effective in many low-resource settings and require minimal resources to implement. Studies from both developing and developed countries have highlighted the significance of these reviews in improving patients’ experiences and outcomes.

Capacity building in low-resource settings is vital. At the Centre for Maternal and newborn Health, Liverpool School of Tropical Medicine, we train health care providers from 12 countries in sub-Saharan Africa and Southeast Asia to enable them conduct morbidity and mortality reviews and improve the quality of care they provide.

Implementation challenges
One of the most daunting challenges in implementing quality improvement measures, including death audits or reviews, is the lack of universally accepted classification systems for cause of and factors associated with mortalities. The multiple classifications systems available often show high levels of variability, are difficult to apply and do not allow for comparison across settings.

These difficulties may explain in part why the use of classification systems has not been fully embraced in many developing countries. For example, a systematic review studying causes of stillbirth in developing countries reported that out of 59 studies, only 12 (20%) reported the use of a classification system, and between them, they used seven different classification systems.

To fully benefit from the advantages of quality improvement in MNH, there is an urgent need to build capacity of health care providers to be able to conduct maternal and perinatal death audits as well as standards- or criterion-based audit. We also need to establish clear guidelines and adopt suitable classification systems to ensure uniformity and allow comparison among different countries and settings.

As these challenges differ between settings, cadres and work environment, what could be the most important challenge(s) for implementing quality improvement strategies in MNH in your own setting?
Malaria eradication: let battle commence

Richard Feachem

Yesterday in New Orleans, in the keynote speech at the opening of the annual meeting of the American Society of Tropical Medicine and Hygiene, Bill Gates framed malaria control as a global health success story and made a call for malaria eradication in his lifetime. Since he has just turned 59, life tables suggest that he means by 2038; assuming of course that he is an average white American male, which he is clearly not! This call for nothing less than malaria eradication comes 7 years after a similar call by both Bill and Melinda Gates at a famous gathering in Seattle in October 2007. Much has changed in the intervening period.

In 2007, the "e" words, elimination and eradication, could still not be used in polite malaria company, and a massive lack of ambition had overwhelmed the malaria community since the late 1970s. Accordingly, the call by Mr and Mrs Gates in 2007 was met with scepticism by many.

Today, the global intellectual landscape looks very different. Driven by dramatic progress among the 34 malaria eliminating countries, and by the work of bodies such as the Malaria Elimination Group, the Asia Pacific Malaria Elimination Network, and the Elimination 8 in southern Africa, elimination is a popular word and the elimination agenda is centre stage in global strategic thinking, led by WHO and Roll Back Malaria.

The new frontier of debate is now eradication. Is it possible? I fully agree with Gates that it is possible in his lifetime. The key is to have firm and unambiguous commitment to eradication. Without that we will certainly not eradicate malaria.

The specifics of Bill Gates’s call for eradication were important and interesting. He urged realism and the avoidance of the hubris of the 1950s. He referred to eradication as a necessary objective and linked this to the rise of artemisinin resistance and the need to eliminate Plasmodium falciparum from southeast Asia.

He called for a balanced and multidisciplinary approach and cited the value of experts in parasitology, entomology, primary care, social science, communications, and more. He also appealed to the younger scientists and practitioners in the hall to dedicate their careers to worthy causes such as malaria eradication.

Bill Gates also highlighted the necessity to develop new tools. Specific research and development priorities should include digital mapping, a single-dose radical cure, novel vector control methods, and more sensitive and field-friendly diagnostics. But making better use of today’s tools and operational research on delivery and implementation are also a priority.

Some in his audience had just returned from the ninth meeting of the Malaria Elimination Group in Sri Lanka. Here we heard in detail the remarkable story of Sri
Lanka’s journey to no local transmission of malaria since November 2012 and of Sri Lanka’s plans to achieve complete elimination. Maintaining the gain in Sri Lanka will require continued investment by the Sri Lankan government, the Global Fund and other partners. This was not done following the near-elimination in Sri Lanka in 1963, resulting in massive resurgence. Financing really matters, both to achieve elimination and to sustain it.

Three crucial elements of the eradication agenda are well known to Bill Gates and his malaria team, but not emphasised in the speech, possibly because the audience mainly comprised doctors and medical scientists. These are political commitment, sustained and adequate finance, and good management. Political commitment is essential. Sri Lanka has it. Some countries, like India today, do not. Organisations like the African Leaders Malaria Alliance and the newly formed Asia Pacific Leaders Malaria Alliance are tailor-made to strengthen and sustain political commitment at the highest level. Adequate financing is self-evidently essential. It is in jeopardy today for two reasons. First, countries with low or no malaria tend to cut their malaria budgets. Second, new Global Fund policies concentrate investment in the poorest high burden countries, which is not consistent with ensuring successful implementation of a global eradication strategy. Good management can overcome challenging problems, while poor management will fail even in tractable situations. Most Ministries of Health (in rich and poor countries) are poorly managed and, not surprisingly, so are most national malaria control programmes. This neglected field needs urgent attention.

So there we have it. No more malaria three decades from now. Perhaps not in my lifetime, but hopefully in Bill and Melinda’s and surely in the lifetime of the smart young scientists and implementers in the audience yesterday. It will be their commitment and energy and innovation that will finish the job. Malaria eradication will be a massive and historic achievement for humanity. Let’s get it done!
Stopping the next Ebola before it starts

Mariame Dem

At last there has been a glimmer of light in the fight against Ebola. First Senegal and now Nigeria have been declared Ebola-free. This took massive efforts to quarantine those infected, and monitor all of their contacts, until the spread of the deadly virus was contained. This was no small feat for these developing countries—particularly when we see how wealthy nations, including the United States, also struggle to track and monitor their own Ebola cases. How Senegal and Nigeria managed to halt the virus, and why Liberia and Sierra Leone continue to struggle so terribly, comes down to the relative strength of their health systems.

Years of conflict effectively destroyed the health systems in Liberia and Sierra Leone, never to fully recover—held back by their governments’ own competing priorities, and the donor community’s focus on individual projects and ‘wins’ over longer-term investment in systems.

The UK’s and US’s humanitarian responses to the outbreak, while delayed, are welcome. But how much less would the world be spending to control this outbreak, had these countries been supported to rebuild their failing systems in the first place?

Senegal and Nigeria are also developing nations. But both were strong enough to mobilise dozens of health workers to track and monitor those who’d come into contact with Ebola, an effort the World Health Organization has called ‘a piece of world-class epidemiological detective work.’ There is still much work to be done, but for now these two nations have gone more than 42 days without new infections.

Sierra Leone and Liberia were not capable of following suit. Their governments are weakened, their infrastructure broken. In the UN Human Development Index, Liberia ranks 175 out of 187 countries. Sierra Leone is at 184. These are two of the poorest nations on earth.

When hospitals do not have running water for doctors and nurses to wash their hands between patients, when patients desperately ill with fever, vomiting and diarrhoea are without even a working latrine, when there is no way to clean and sanitise bed sheets between patients, when health workers do not have proper protection as they risk their lives—how can they possibly be expected to cope with and contain a virus like Ebola?

There is a tendency in the developed world to shrug and say ‘there is no more we could have done’ to prevent the tragedy that has unfolded in West Africa.

But there is a global responsibility to act. Ebola knows no borders. It is clear we cannot afford to not try.

Humanitarian agencies have stepped in and an army of volunteers—mainly local—are now waging war against this virus. Bleak as the situation is, there are small signs of progress. Survivors are now emerging from Ebola treatment centres.
centres to tell their stories, so that others may learn that they offer hope, not just certain death.

But months from now, if and when Ebola is contained, these fragile states must not be abandoned, without analysis of what went wrong.

Schools have been closed, food prices have spiked and their economies have lost momentum. The malaria season is about to start and famine now threatens.

Ebola has all but destroyed their health care systems. Before this crisis, Liberia had just over 50 doctors for its population of 4·3 million people; Sierra Leone had about 95 for its population of 6 million. After this crisis, when the temporary treatment centres are taken down and emergency response teams move on, there will be even fewer.

Yet of the hundreds of millions of dollars that will be spent battling Ebola, little to none of it will go into lasting infrastructure or ensuring effective systems are in place for next time. These nations must be supported to build up their health, water and sanitation sectors, so that they might have a fighting chance at managing their next crisis.

This is a difficult sell to international donors. It is much easier to celebrate the opening of a village’s new water tap, or a group of children successfully vaccinated against disease, than to talk about the long-term partnerships and financing necessary to create effective national sanitation and water coverage.

But what is needed is partnerships and financing to build management systems as well as infrastructure. Support for national and local governments to become capable of managing their own affairs is more important than ever if we are to avoid a repeat of this terrible epidemic. It will cost far less in the long run.
World Health Summit 2014: did it deliver?

Anand Bhopal and Rita Issa

Following a regional meeting in Sao Paolo in April, the World Health Summit returned to Berlin for its sixth year. From October 19–22, around 1000 people from across academia, government, civil society, and industry gathered in the beautiful surroundings of the German Federal Foreign Office for a meeting focused on four key areas: Education and Leadership, Research and Innovation, Evidence to Policy, and Global Health for Development. Earlier this year Richard Horton reflected on the question “What is the World Health Summit For?” In light of this, we consider whether the summit can be said to have ‘delivered’?

The opening ceremony heard speeches from the German ministers for Foreign Affairs and Health, the French minister for Development, and academics from Brazil, Germany and Australia—reflecting the cross-cultural and cross-disciplinary approach that was to be a prominent feature of the event. The summit itself began with a special session on Ebola at which Liberian Ambassador Ethel Davis and Rwandan Minister for Health Patrick Ndimubanzi highlighted country needs, and Chairman of NHS England David Heymann provided a historical context on this Ebola outbreak. The day continued with plenaries on ‘Climate Change and Health’ and ‘Big Data and Medicine’ interspersed with breakout sessions on a range of topics including Global Health Education, Transparency and Clinical Trials, Trade and Health and Translational Medicine. The next day moved to focus on Universal Health Coverage and Health Financing with a look to the Sustainable Development Goals. Drawing together the first two days, and in a move to action, the final day heard voices from civil society collaborating with policy and academia in sessions such as ‘Civil Society Mobilisation for Health’, and the final keynote speech ‘Healthy Cities for Prevention’ brought together themes previously discussed and provoked useful discussion on how health systems and society must adapt in a changing world. Through varied and well thought out sessions, the summit programme successfully gave gravity to the acute and chronic pressures faced by health systems, and responded to the pre-WHS statement by the academic alliance M8 of the need to see ‘Health as More Than Medicine’.

The vision of the World Health Summit is to improve global health through “collaboration and open dialogue”—to this end, effective delegate participation is fundamental. Large plenary panels at times left little opportunity for audience interaction, however, the breakout sessions went some way to reconcile this. The invariably strong line-up of speakers representing academia, industry, government, civil society and the student voice generally encouraged open debate regarding the practical challenges of changing policy and improving global health.

World Health Summit
An overlying stream on the future of medical education is a pressing issue which the World Health Summit did well to address. Discussions highlighted the need of medical curricula to adapt in order best serve communities locally and populations across the world. The focus on building the right attitude rather than merely the skills and knowledge was a recurring theme which builds on several influential publications in recent years, including the *Commission on Medical Education for the 21st Century*. Over 40 students from across the globe attended the World Health Summit; the inclusion of three ‘young leaders’ in the opening ceremony, two medical students on the panel of workshops and a *New Voices programme* reflected genuine facilitate youth engagement.

Despite the variety of representatives from a multitude of backgrounds, being located in government offices and run under the patronage of German Chancellor Angela Merkel, President of France Francoise Hollande, and President of the European Commission José Manuel Barroso, makes the World Health Summit inescapably political in nature. However, the rationale of the organisers in allowing the Berlin Mayor, the International Olympics Committee and the World Federation of the Sporting Goods Industry to use the platform to promote the Berlin Olympic bid at the closing ceremony is questionable. Not least because the *lacklustre evidence of the population health benefits from hosting major sporting competitions* creates an uneasy relationship with the ‘Evidence to Policy’ focus across the summit. The World Health Summit provides an important platform for non-state actors in global health; this power should be carefully exercised.

Whilst awareness of this forum has increased, challenges for the World Health Summit remain. It is the organisers’ imperative to avoid the event being cast as another ‘global health talking shop’; ultimately, the meeting will be delivered on results. There are many positive indications such as the intent of producing policy documents from certain workshops (carried on online after the summit); we will be looking to these documents and other such tangible outcomes as a reflection on the success of the summit.
Universal health coverage in Africa: time to step up advocacy

Biodun Awosusi

We have fewer than 500 days to the deadline of the Millennium Development Goals (MDGs). Since their launch in 2000, the goals have mobilised a wide variety of stakeholders for an inspiring journey. Despite some major success, Africa lags behind in many of the targets. Governments still aren’t spending enough on health: fewer than 10 countries in Africa budget at least 15% of their national budget for health in line with the 2001 Abuja Declaration. People aren’t getting the services they need, especially in rural areas, and financial hardship associated with ill-health worsens poverty. There is growing momentum that universal health coverage (UHC)—a goal that everyone should have access to the quality health services they need without risk of financial ruin—can transform health systems in Africa.

UHC is a viable platform that can unite advocates across the health sector for maternal and child health, sexual and reproductive health rights, mental health, communicable diseases, neglected tropical diseases, and non-communicable diseases. WHO Director General Margaret Chan described UHC as, “the single most powerful concept public health has to offer”, and World Bank President Jim Yong Kim has said “the most equitable and sustainable way to achieve the health outcomes we all want is through Universal Health Coverage.” Despite its promise for Africans, advocacy for UHC within Africa is growing but slow.

**Kenya**
In Kenya, the Health for All campaign mobilises support for UHC by working closely with government and other stakeholders at the national and county levels. It tasks government at all levels to prioritise budgets for health, invest in human resources for health, and improve access to essential medicines for all Kenyans. The Health for All campaign has also successfully supported the Ethiopian Health Insurance Agency through media campaigns to raise awareness of UHC issues.

**Nigeria**
In Nigeria, a consortium of civil society actors joined forces with national and international organisations in March 2014, to hold a national stakeholders meeting on the eve of the Presidential Summit on Universal Health Coverage. Since the summit, the National Health Insurance Scheme has intensified internal reforms and embarked on high-level advocacy to states to get their buy-in. The result is that many states in Nigeria are increasingly supportive of developing initiatives that can increase access to quality health care.
Ghana
This wave of change is also occurring in Ghana where the Universal Access to Healthcare Campaign (UAHCC) advocacy drew attention to the weakness of the National Health Insurance Scheme. The evidence compelled National health Insurance Authority management to introduce measures which have revolutionised the operations of the entire scheme. Currently, the UAHCC is collaborating with the National Health Insurance Authority to raise sustainable and innovative financing for the scheme and to secure UHC in Ghana.

Zambia
Oxfam’s Vote Health for All Campaign in Zambia seized a key opportunity preceding the 2011 elections to mobilise the people to demand increased access to health care and more funds for health. A recent campaign case study shows that Zambia’s health-care budget rose by $126 million with resultant improvement in access to health care for the populace.

Malawi
In Malawi, the Malawi Health Equity Network advocates for increased government funding for health and improvement in the welfare conditions of health workers. It uses government data to advocate to key stakeholders in the country particularly health and finance ministry officials and lawmakers.

Despite the relevance and impact of these campaigns, significant gaps exist. The poor and vulnerable have limited or no access to health care and the vicious cycle of poverty, ignorance, and disease persists. There is limited information on financial risk protection in many countries in the region. Health insurance schemes are fragmented and leave out the informal sector—which usually represents a huge percentage of the population. Inefficiencies in the use and allocation of available resources and inadequate human resources for health limit progress towards UHC. Health systems are unable to respond effectively to threats of communicable diseases like Ebola virus disease, as the Liberian and Sierra Leonean experiences aptly demonstrate.

Achieving UHC is a political process that involves continuous negotiations among stakeholders with varied interests. Country-led campaigns will likely succeed if relevant stakeholders, including governments, development partners, and civil society organisations are identified and mobilised to support policies that promote “equity, efficiency and effectiveness” within the health system. In countries like Nigeria, Ghana, and Tanzania, where general elections are approaching, UHC should be a political issue in the electoral process. A succinct country profile on progress towards UHC can be prepared, drawing from the examples of other countries like Thailand, Ghana, and Indonesia, that have made UHC a national priority.

Regional integration facilitates cross-country learning and knowledge management for UHC. An emerging knowledge-driven African civil society network for UHC is able to harmonise existing country-led campaigns and support emerging advocates as countries chart their course towards UHC. The role of these “grassroots’ voices” and the network will reinforce global advocacy for UHC by Article 25, Beyond 2015 and Health for All Post-2015 campaigns.

As Dr Kim once remarked, “[UHC] is our aspiration, a progressive pathway that will save lives, increase economic growth, and help millions of people lift themselves from poverty.” Let’s make it happen.
A networked approach to improving the resilience of communities confronted by the threat of Ebola

Nicholas Mellor

The current Ebola virus disease (EVD) epidemic shows no sign of abating, and, with little effective infection control or prevention in place, the transmission is escalating on an unprecedented scale. In the absence of effective infection prevention and control at community level, the current epidemic curve indicates that cases are likely to escalate further, and the disease could become endemic.

The R0 figures from a recent modelling study (see table) show that the epidemic is still expanding and, since these data is based on recorded patients and deaths, the true case load will be higher still.

The conclusion is that “without drastic improvements in control measures, the numbers of cases of and deaths from EVD are expected to continue increasing from hundreds to thousands per week in the coming months”. Since the average stay in hospital in this study was 6-4 days, the number of beds required to treat patients approximately corresponds to the weekly case incidence.

A major effort is underway to establish Ebola treatment centres, but the bed capacity is in the hundreds and not thousands. There are currently approximately 1000 beds in the region, with the number to be increased to about 4000 over the next few months. In Guinea, for example, the current shortfall is 2310 beds. Questions remain as to how these centres will be staffed, inducted, trained and supported; as well as the risks associated with so many people travelling into and out of the affected region.

Large centres may be logistically easier to set up, but they also have the drawback that they can lead to greater movement of people, increasing the infection risk for the surrounding communities and those along the roads to those centres.

If it was possible to build and staff these centres faster than the epidemic accelerates, they would play a key role in controlling the epidemic and restoring trust and confidence in the health system, governments, and international agencies. If the epidemic accelerates faster than the centres can be built, then it is crucial the investment in treatment centres is complemented by a community-based approach and mass mobilisation around infection prevention and control, so that the success of the international intervention is not seen only in terms of these new centres to cope with the case load. Social mobilisation is being ramped up with the launch of the Ebola Communication Network on October 8.

How do we scale up community training in the midst of such a crisis? Across the region there are many partnerships often supported internationally to support local initiatives to improve schools, community clinics, or even hospitals. These formal and informal networks provide a resource that we can build on. But how can we provide them with the kind of training material that will rapidly address their greatest needs?

The convergence between technology and communications networks has given us the tools to create a virtual school of infection prevention and control that can reach all these communities. Electricity, computers, and connectivity may not be omnipresent, but access is improving all

### Country Basic reproduction number, from initial phase Estimated current reproduction number Current doubling times (days) Predicted cases by Nov 2, 2014

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<th>Country</th>
<th>Basic reproduction number</th>
<th>Estimated current reproduction number</th>
<th>Current doubling times (days)</th>
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the time, and it is one of many infrastructure initiatives being considered by the UN Mission for Ebola Emergency Response (UNMEER). The sheer innovation seen in how mobile telephones have been used in east Africa for mobile banking to market trading shows how we should never underestimate the capacity for innovation and adaptation technology provides.

We have never before had such a powerful capability in our hands. Internet-based educational platforms have been used by the oil and gas industry to provide training in remote locations, and MOOCs (massive open online course) are already contributing to Ebola awareness in west Africa on a scale most people would not have believed possible only months ago.

A key element of this approach is to create programmes for training trainers which can be cascaded down, creating a fresh cadre of practitioners and trainers. This pyramid approach, combined with remote teaching, not only enables training to be scaled, but also supported in remote locations (as long as there is connectivity), without the attendant risks and logistical issues of people having to travel. Such an approach has been illustrated in a previous blog post.

Carrying out Ebola preparedness training on this scale in communities which may have little in the way of a relevant infrastructure in terms of access to sufficient water, safe sanitation, and a means of receiving a sustainable supply of consumables—such as gloves and other personal protective equipment—is unchartered territory for everyone. Connectivity should not be prioritised over water—it should be prioritised as well as water, sanitation, and personal protective equipment. The one thing we can be sure of is that we will learn a lot as we proceed down this path, and that the best practice will be shaped by those who are solving the problems as they occur in the frontline.

We need a mechanism for both empowering local people and capturing their insights, so our networked-based approach to community capacity building evolves with ever greater impact and is replicated across the region, and potentially wider still. We are confronted by an unprecedented challenge—but we have never had such resources to draw upon. This is an opportunity not only to transform how this epidemic is brought under control but also how we improve the resilience of health-care systems across the world.

This is a joint post with Simon Mardel, University Hospital South Manchester NHS Foundation Trust, Manchester, UK (currently seconded by Exxon Mobil to Ebola Emergency Operations Centre, Lagos, Nigeria); Richard Allan, The MENTOR Initiative, Crawley, UK; Victoria Collins, University of Leeds School of Medicine, Leeds, UK; Elizabeth Collins, Leicester Royal Infirmary, Leicester, UK; and Susan Davey, Leicester Royal Infirmary, Leicester, UK.
Realpolitik and global pandemics

Vin Gupta

President Barack Obama’s call to the UN for a more urgent multinational response to the Ebola outbreak that has stricken West Africa was essential. Worst-case projections have nearly 1.4 million people infected by January 2015 if additional interventions are not undertaken to stem the epidemic. Problems centering on misperceptions of disease transmission, poor hygiene, and misguided policies such as Liberia’s border closings have only exacerbated the spread of disease. In our globalised world, a collaborative approach is crucial, as communicable diseases know no borders. While the ethos of recent statements put forward by the WHO, the UN, and the US Centers for Disease Control and Prevention (CDC) advocates for just such a response, a closer look suggests that at least in recent times, realist tendencies permeate initial responses to global pandemics. Ultimately, how we respond initially will dictate the severity of human and economic losses incurred.

Take, for example, regional responses to India’s battle with bubonic plague in 1994. The western state of Gujarat saw nearly 700 cases of the disease during a 6-month period, triggering widespread fears and mass migration out of the state. Some figures had at least 300,000 citizens transiently fleeing the province, the biggest recorded post-independence movement of people. The entirety of the international response was anything but helpful: neighboring Gulf countries cancelled both inbound and outbound flights out of India and domestic produce was rejected at several international markets. Indians had external visa limitations placed on travel. Moscow, for instance, quarantined travelers from the subcontinent for over 6 days and banned all tourist travel to the region. Several other countries embraced similar tourism policies. Given that this disease entity is spread by the bite of a flea and rarely via human-to-human contact, the global response, which helped contribute to nearly $600 million in lost wages and sales, was misguided and self-serving.

Though ultimately a robust international response contended with the H1N1 epidemic in 2009, the initial phases of the global response were characterised by a similar tendency to close off borders in a form of bio-protectionism. Cuba and Argentina temporarily banned all flights into Mexico, France urged similar action between the EU and Mexico, and the then-US Secretary of Homeland Security Janet Napolitano argued that all options to contain the disease, including border closure, would remain on the table. These policies were either effected or debated in spite of clear recommendations from health policy makers stating...
otherwise: acting director of the US CDC Richard Besser noted that border closures would ultimately prove futile in the face of an infectious disease. The economic toll for Mexico was felt predominantly in its tourist and agricultural industries, amounting to nearly $2.8 billion dollars lost during fiscal year 2009 as a direct result of implicit or explicit international policies intended to quarantine the country.

Perhaps unsurprisingly, in spite of clear evidence that Ebola is only transmitted via direct contact with bodily fluids, a similar willingness to cordon off West Africa has been demonstrated by the global community during this current pandemic. China has scaled down its iron ore mining activities in Liberia, several international airlines have halted service to the region, including the world’s largest international carrier, and potentially lifesaving pharmaceuticals have been at least momentarily reserved for patients holding passports from countries of the developed world. Additionally, calls from American legislators have been made seeking full travel bans for the citizens of Guinea, Liberia, and Sierra Leone. Informal public opinion polls have also heightened the call for travel restrictions and border closures.

The global community’s early response to pandemics is of obvious importance. The US Congress appropriated nearly $6 billion on preparedness strategies for global epidemics alone between 2006 and 2009, as there is a clear recognition that prevention with early detection and response are associated with better overall outcomes. Yet, global pandemics are associated with enormous economic costs, often out of proportion to the actual loss of life incurred.

If we cannot prevent their onset, we in the global commons must work to prevent the severity of penetration of pandemics. To this end, minimising policies and rhetoric that focus on protecting national borders, minimising trade, and halting tourism will go a long way towards enhancing global cooperation from the outset. Particularly when the pathogens at play will propagate regardless of external efforts to quarantine affected regions, this policy of embrace from the start will likely result in more rapid solutions and diminished human and economic tolls.
Putting children at the centre of the end of AIDS

Charles Lyons

In the 15 years since the Millennium Development Goals were adopted, the number of people accessing antiretroviral therapy (ART) for HIV/AIDS has dramatically increased, from less than 1 million people to 12.9 million in 2013. Despite the global effort to scale up treatment, children have largely been left behind. The consequences of this failure to act are grim: only one quarter of the 3.2 million children living with HIV were able to access treatment in 2013, and today, like every day, more than 500 children will die of AIDS. Quite simply, the global community has failed to adequately address and prioritise paediatric HIV treatment around the world.

This failure undermines efforts to tackle this disease and makes the global goal of ending the AIDS epidemic by 2030 effectively impossible. The challenges to reaching children with these life-saving services are numerous. Children born to HIV-positive mothers are often not tested for HIV, and those that are may still not be initiated on treatment. It is well established that without early HIV diagnosis and ART, half of all children living with HIV die by the age of 2 years, and 80% will die before their fifth birthday. Yet studies show that the average age of children initiating treatment hovers around 4.5 years of age.

Stigma, lack of health workers trained in paediatric care, and long walks to clinics compound these challenges and raise barriers between children and lifesaving treatment. Additionally, children don’t just need any treatment, they need therapeutics specifically tailored for their unique needs. There are limited drugs available for children today; new paediatric specific formulations and medications are desperately needed. Many medications currently approved for children come in bitter-tasting liquids or large, hard-to-swallow pills, making children less likely to start taking them and to take them consistently.

Putting children at the centre

Much like the epidemic at large, ending AIDS in children will not be accomplished if business continues as usual. Real change demands the rapid scale up of paediatric treatment initiatives and programmes, including improvements for diagnosing children with HIV, developing new child-friendly drugs and drug formulations, increasing effective communication modalities, and creating new models for providing treatment services closer to where children live.

We also need leadership and advocacy that puts paediatric HIV at the forefront of global conversations and decisions. During 2014 there has been renewed interest in addressing this inequity and increasing international recognition...
of paediatric treatment as a high priority, as seen through ambitious target setting, pointed investments, and a focus on treatment innovation.

At the AIDS2014 conference in Melbourne, UNAIDS unveiled aggressive new treatment targets for children and adults. Known as 90/90/90, these targets call for 90% of all people living with HIV to know their status, 90% of all people diagnosed with HIV to be receiving ART, and 90% of all people on ART to achieve viral suppression. All of these are set to be met by 2020. The Elizabeth Glaser Pediatric AIDS Foundation is collaborating with UNAIDS, UNICEF, and WHO on an action agenda around 90/90/90 targets, specifically for children, and on national-level efforts to integrate HIV and maternal, neonatal, and child health (MNCH) platforms in order to improve health services for HIV-infected and HIV-exposed children.

August 2014 saw the launch of the Accelerating Children’s HIV/AIDS Treatment initiative during the Obama Administration’s US-Africa Leaders’ Summit. This new partnership between the US President’s Emergency Plan for AIDS Relief and the Children’s Investment Fund Foundation aims to double the number of children receiving ART in ten high-burden, priority countries during the next 2 years.

And in the spring of 2014, UNITAID, in partnership with non-profit organisations Drugs for Neglected Diseases initiative (DNDi) and Medicines Patent Pool (MPP) launched their new Pediatric HIV Treatment Initiative, with the goal of overcoming barriers to the development and distribution of paediatric drug formulations and combinations.

These initiatives and targets represent the kind of prioritisation, investment, and recognition that paediatric HIV treatment needs. But to truly address the existing inequity, more must be done at a global scale.

The importance of ambition and prioritisation
As the Millennium Development Goals expire at the end of 2015, discussions that will determine the final form of the Sustainable Development Goals and define the post-2015 development agenda are entering an important phase at the UN.

Whilst current proposals for the post-2015 framework do not include a stand-alone goal on HIV, there is strong international support for including ‘ending AIDS by 2030’ under an overall health goal. Ending AIDS is an ambitious target, and ending AIDS in children is one of the most crucial components of achieving that target. Therefore the global community must embrace a more proactive approach to ending paediatric AIDS.

It is no longer acceptable for adult-focused HIV service delivery platforms to be the only way we find and care for HIV-infected children. In areas with a high burden of HIV, paediatric HIV testing and treatment services need to be available at key entry points where children are accessing health services, including maternal and child health clinics, outpatient clinics, and malnutrition centres.

Today, complacency is a very real enemy to our efforts to combat the HIV/AIDS epidemic. Too often, we encounter the sentiment that, with the incredible advances in treatment and prevention, the end of AIDS is all but inevitable, a simple matter of the passage of time. This could not be further from the truth.

Ending AIDS in children will require an even bigger global commitment in the years to come than ever before. Without investment now, the challenges will only grow more difficult and the obstacles harder to surmount. We must have the ambition to rise to meet this challenge, until no child has AIDS.
Evaluating Ebola interventions: adaptive designs should be commonplace

Steve Kanters

The weekly number of new Ebola virus disease infections is growing exponentially, and stopping the epidemic is likely to take months or years. Consequently, a panel of experts convened by WHO announced on September 5 that the use of select unapproved drugs and vaccines to fight the Ebola outbreak is imperative. But the shortage of therapeutics in question and the urgency of the situation point to the need for more flexible, and ethical, methods with which to test them.

There are no established cures or treatments for Ebola. There is, however, a collection of experimental drugs and vaccines at various stages of development. Whether any of these new interventions offer a benefit to patients is unknown and there is some reason for cynicism. The two treatments that have garnered the most attention in the media are ZMapp, a mixture of three humanised monoclonal antibodies, and TMK-Ebola, an RNA interference therapeutic. Both have been used on individual Americans and Europeans who have contracted the disease. Only TMK-Ebola is currently being tested in a phase 1 clinical trial—ie, a trial in healthy volunteers to determine tolerability, the very step that the WHO expert panel suggests skipping. Presently, the most limiting factor with respect to doing clinical trials is the low drug stocks for these experimental therapeutics. In particular, the last dose of ZMapp was recently given and new stock will require the growth of tobacco plants over the next few months. Nonetheless, the Wellcome Trust recently established an international consortium to conduct clinical trials of experimental Ebola therapeutics in west Africa. It aims to facilitate rapid and straightforward trials, and is currently working with local communities to ensure their involvement. It has not, yet, reported what such clinical trials would look like.

Accelerating the availability of experimental therapeutics, as is being suggested by the WHO expert panel and will be implemented by the Wellcome Trust, is a very important step in the right direction. Allowing the use of experimental therapeutics on infected individuals (ie, skipping phase 1 trials) is not entirely new. Similar steps were taken, through activist pressure, in the early AIDS epidemic. Some of these experimental drugs benefitted AIDS patients, while many others did not. Still, there is no denying that this was an extremely important step in curbing the AIDS epidemic.

Accelerating the availability of experimental therapeutics is important because the road to licensure for therapeutics has become more and more complex, typically starting in laboratory tests and going through four phases of trials that often take upwards of 10 years. These long and rigid standards, by agencies such as the US Food and Drug Administration (FDA), are to avoid the sale of a drug like thalidomide, whose side effects left approximately 10 000 infants with malformed limbs. These modern standards have averted adverse events of comparable scale to thalidomide, but it is worth reflecting on how many lives have been affected by the delayed availability of effective treatments. Using an experimental drug in a country like Liberia, Guinea, or Sierra Leone further raises important questions over whose standards of evidence should be met before allowing access to a previously untested-in-humans drug. Getting approval from the FDA makes some sense for ZMapp, as the company producing it is based in the USA. However, Tekmira Pharmaceuticals is Canadian, so why should an agency such as the FDA need to overlook the application of TKM-Ebola in west African countries? However we decide to move forward, flexibility will be required from the agencies that will overlook these procedures.

There is no doubt that clinical trials are required in moving forward. The use of experimental therapeutics should be used to acquire critical scientific knowledge as well as help patients in dire need of treatment. Although some may argue that randomising patients to the possibility of no treatment is unethical, medical ethicists have argued to the contrary. Moreover, it might be tempting to rely on historical data as a comparator, but this presents severe limitations, in the absence of placebo, as unknown variables may affect a clinical outcome.

Standard clinical trials consist of determining the number of patients required, randomising these patients to treatment arms, and determining safety and efficacy through analysis of the resulting data over a pre-planned period of time. Planning and conducting a standard clinical trial relies on ample knowledge of the population, therapeutics,
and biological mechanisms of the disease at hand. Choices of trial duration, sample size, treatment allocation, dosage, and outcome measures, among others, depend on pre-planned and assumed knowledge. In reality, however, many trial designs would be altered if much of the knowledge accrued over the course of the trial were known beforehand. By the time we realise that trials should have been changed, or adapted, the strict rules of standard clinical trials often do not permit for a protocol change. A more flexible clinical trial environment may result in more efficient findings.

Adaptive clinical trials, on the other hand, are a broad class of trial designs characterised chiefly by frequent interim analyses. These frequent interim analyses allow trials to overcome the shortcomings listed above by prospectively adapting as information on unknowns becomes clearer using data accrued over the trial. It is important to note that changes made to a trial through adaptive design are pre-specified rules that ensure that changes are not solely data driven, but also founded in theory. In doing so, adaptive trials can be flexible, and timely, and yet retain validity. The upcoming Ebola trials will be marred with unknowns that are required to conduct standard trials. These include uncertainties about the interventions, such as efficacy, dosage, co-interventions, and adverse events, and uncertainties about the population as the epidemic continues to cause societal and economic turmoil. In light of this, two adaptive trial designs, and variations on them, should be viewed as more efficient and ethical procedures to assess efficacy and safety of Ebola therapeutics.

The first, and simpler, suggested adaptive trial design would combine response-adaptive randomisation and adaptive stopping rules. In combination, these optimise trial timing by stopping the trial as quickly as possible following the ascertainment of treatment benefit or harm. Clearly, a trial design that is more timely and whose end is based on either efficacy, inefficacy, or pre-determined sample size is more ethical than traditional designs, which primarily end based on predetermined sample sizes or time-periods. Furthermore, adaptive randomisation is a randomisation schedule that allows more patients to be given the treatment that appears to be more effective as the trial is conducted. This reduces the number of patients exposed to less effective treatments. For example, if after the first month of trials the probability of survival in TKM-Ebola, say, is found to be 90% compared to 30% in patients receiving supportive care, then patients will subsequently be randomised at a 3:1 ratio in favour of TKM-Ebola. Ebola treatments lend themselves well to this design because treatment duration is relatively short. Therefore, this simple adaptive trial design would likely reduce the number of patients exposed to less effective treatments as well as shorten the trial duration.

The second, more complex, suggested adaptive trial design would add to the previous design by including multiple doses. Adaptive trials can also be used to answer larger questions, such as dosage, co-interventions, and method of delivery. This would especially be useful for the Ebola clinical trials given the experimental status of the therapeutics currently under consideration. However, more complex questions require more complex trials. In particular, this design requires a greater degree of preparation to ensure valid adaptations at the frequent interim analyses and it is likely to extend the length of the trial. Although it would add to the preparation needs, the reality is that trials are most likely months away from starting due to the supply shortages, logistical hurdles of ethics and national approval agencies, and negotiations between drug developers, academics, and funders. Thus, this second trial design, that would shed light on many of the unknowns regarding experimental therapies, should not be discounted due to its added complexities.

Current trial designs and agency standards are too rigid and dated. If ethics are to be considered in deciding how trials should be conducted to acquire scientific knowledge regarding the efficacy and safety of therapeutics, then adaptive trials should become more commonplace, not just within the context of the Ebola epidemic. The use of adaptive trials will ultimately save lives. A lack of understanding of methodology should not be an excuse for poorly designed clinical trials.

This is a joint post with Edward Mills (co-founder of Global Evaluative Sciences and Visiting Associate Professor at the Stanford Prevention Research Center).
The time is now for patient-centred innovation
Stefanie Weiland and Stephanie Koczela

Patient-centred or people-centred care is the idea that the patient should be at the centre of the health system so that care “is respectful of and responsive to individual patient preferences, needs, and values”. This is not just “fluff”: new studies are showing that patient-centred care is associated with better recovery from discomfort, better emotional health, and fewer diagnostic tests and referrals. Many of our colleagues in research agree; in fact, “the science and practice of people-centered health systems” was the theme of the Third Global Symposium on Health Systems Research that has just concluded in Cape Town, South Africa.

As managers of rapidly growing primary care organisations serving low-income and middle-income communities in India, Kenya, and Burundi, we share a firm commitment to achieve patient-centred care and keeping the patient at the centre of every decision. Yet we recognise that, in reality, we and many others running health-care organisations risk losing sight of this in our day-to-day work. Patient-centred care is not a clear-cut prescription that can be applied to achieve the right outcomes—this aim will require continuous refinement, innovation, and testing.

To aid ourselves in refocusing on the patient, we worked together to develop a list of five key principles and tactics that we have personally found to be critical when working to achieve patient-centred care. We are sharing this list here in the hope that it may be useful to others, and so that others can add their own thoughts and experiences:

Include patients in the innovation process.
If we really listen to patients, they will tell us what to improve and even how to improve. Let patients be your partner on services, quality improvements, treatment plans, and more. A key way to do this is simply by spending time with your patients, asking them questions, and truly listening, whether in focus groups or during informal conversations. We cannot measurably impact patients’ well being unless we see the system from their eyes. We have all been patients ourselves. We are not serving cases or statistics, but people. Together, we have incorporated human-centred design and other methodologies to systematically improve care delivery processes. At the same time, we need to make sure that we don’t lose the personal touch, for each person walking into our facilities is unique. In short: know your patient.

Focus on primary care.
A patient is not an AIDS patient one day and a TB patient another day. Their health cannot be siloed and neither can they. Primary care treats the patient as a person, as a whole, in the context of their family and their environment. The
primary care as a family doctor, but we need to speed this recognition up, or we will perpetuate a system that treats only disease, too late, and too expensively. Let’s treat people with a focus on their health at the first point of contact to reduce the burden on the whole system.

Accelerate the innovation process.

When developing new innovations and processes, many organisations tend to get caught up in long research and planning periods, pilots, and official evaluations to determine feasibility. Unfortunately, this can slow down innovation and keep patients in the wrong care for longer. How many patients will keep receiving poor, inadequate, out of date, or wrong medical advice during slow proof of concepts and slow evaluations? The cost of this is too high. Therefore, we should speed up the innovation process through rapid testing methods such as Plan-Do-Study-Act to develop effective, sustainable, patient-centred solutions. Don’t get stuck in endless planning. Keep moving forward!

Include soft skills in your medical training.

Soft skills, or the ability to effectively communicate and interact with a patient in a way that makes them feel comfortable, are often ignored or de-prioritised in medical training and education. This is creating a generation of doctors who may know how to correctly diagnose a patient, but are not necessarily able to make the patient feel ownership in their own care. As a result, patients risk missing important follow-ups, misunderstanding treatment, and feeling a combination of fear, confusion, and frustration with their health experience. The importance of this training therefore cannot be emphasised enough. What’s more, we must include nurses, paramedics, clinic managers and other non-clinical staff in these soft skill trainings. Their interactions with patients also constitute part of the patient experience, and they should be keeping the patient at the centre of their decision-making, too.

Collaborate with like-minded innovators.

None of us are alone in our efforts to provide patient-centred care and there is no need to tackle this in isolation. Spend time with a supportive group of people where you can talk openly about what you’ve tried, what works, and what doesn’t work. In our meetings in the Primary Care Learning Collaborative, we openly shared our failures and frustrations with each other, and always came back with many new ideas and energy to put them into action. A group of people is always smarter than the smartest person in the group.

Patient-centred innovation is worth the investment, both in time and money. So be encouraged; stay motivated. Don’t lose sight of the mission to keep the patient at the centre. Serve the patient well, because she is your mother and he is your brother. They are us, and we all want affordable, quality health care.

So our question now to our colleagues—programme managers, health innovators, entrepreneurs—is which principles do you use in your work to achieve patient-centred care? Which tools and concepts help you put the patient first?

This post was co-written by representatives of five organisational members of the Center for Health Market Innovations (CHMI)’s Primary Care Learning Collaborative, a peer-learning vehicle that facilitates knowledge-sharing among participating organisations on topics directly addressing the challenges of quality, sustainability, and scale. The organisations employ chain and franchise models to deliver primary health care in Kenya, Burundi, and India. Specific members and authors include: Stefanie Weiland and Monica Slinkard, LifeNet International, Burundi; Stephanie Koczela and Rob Korom, Penda Health, Kenya; Devashish Saini and Naveen Vashist, Ross Clinics, India; Melissa Menke and Vincent Mutugi, Access Afya, Kenya; Sundeep Kapila and Garima Kapila, Swasth India, India.
Ebola—what went wrong?

Simon Mardel

Slow response, a breakdown of trust, inadequate resources, an international community distracted by the Middle East, and a failure of global governance have all been suggested in recent weeks as reasons for the Ebola outbreak’s escalation. But there may be a simpler, more practical explanation.

Traditional surveillance methods are failing in this outbreak. There are potentially a massive number of unrecognised cases - an underestimation of "2-4 fold... in some areas" according to the WHO Ebola Response Roadmap. It is not only the absolute number of cases that is of concern, but the unrecognised cases and failure of surveillance to trace their contacts. In countries currently affected, containment is being assisted by 'shut down' or 'reduced access' to normal health-care facilities. This will not apply in neighbouring countries while transmission is unrecognised; additionally, the loss of epidemiological link will make recognition of cases by health care workers even more difficult.

The behaviour of the virus is not due to variations in individual immunity, evolution of the virus over time, or by multiple transmissions. It appears better explained by the health-care environment. Gone are the days when this was a mission hospital disease, where severe illness in a government hospital would lead to transmission only to family members providing hands-on nursing care. Such models of care are still common, but in emerging health economies more procedures are performed by midwives, doctors, and nurses than ever before. However, standards of infection prevention and control have, if anything, fallen over recent decades.

The diagram illustrates the potential points of breakdown in the surveillance process. Effective surveillance relies on the interaction between health-care workers and patients. Health-care workers must properly identify the patient, perform a thorough assessment of symptomatic patients to determine the need for isolation, and follow-up all known contacts. Inadequate contact tracing, follow-up, and poor clinical assessment of the patient will contribute to the breakdown of the process. This is exacerbated by patients’ refusal to receive treatment, concealment of symptoms, or denial that have disease and culminates in further spread.

Ineffective surveillance highlights the need for containment efforts to shift focus to the use of standard precautions. This should be as part of the routine care of all patients, in all countries at any one time where there is a risk of exposure to bodily fluids, regardless of the patient’s infections status.

As both a first and last line of defence against Ebola there should be reinforcement of basic measures to control infection. We believe a concerted effort could achieve this ambitious goal without distracting from the equally essential public health response.

‘Standard precautions’ provide the foundation for infection control in all health-care settings, and for around 30 years guidelines from WHO and the US Centers for Disease Control and Prevention (CDC) have reiterated that they should be applied to every patient, in every health setting, and in every country. The challenge is to apply these standard precautions much more reliably throughout health care globally. Although rates of health-care-acquired infection in UK hospitals have fallen to around 7% (of all patients admitted to hospital), these rates are as high as 25% in Africa and many countries probably have rates of 15%—a rate that was not uncommon previously in the UK. The need for a more global escalation of existing measures has never been so great.

We suggest a three-fold strategy for a global improvement in the use of standard precautions.

First, by strategically addressing the scarcity of physical resources for standard precautions in most of Africa. Provision of adequate supplies of water close to the point of care for hand hygiene, sanitation, waste handling, and sustainable supply chains for protective equipment is essential. Collaboration between non-governmental organisations and other regional agencies should support the provision of adequate water supplies and personal protective equipment in all health facilities.
Potential donors should exploit other economic multipliers of this investment such as:
- Interagency agreements to share specifications and purchasing
- Avoid inflation of local prices
- Assurance to low-cost suppliers of long-term large-scale purchasing
- Removal of existing import duties on items with such clear benefit to public health

Second, to facilitate good infection prevention practice, we endorse a brief checklist similar to the phenomenally successful WHO surgical checklist. It could be based on previous WHO aide memoirs/checklists for standard precautions and should become routine at daily handovers for nursing, medical, and other at-risk staff in every health setting globally. It could also include a daily reminder of critical information that is being cascaded down from national public health authorities to reach the staff who assess patients. Support for such an approach is already evident from emergency department staff, microbiologists, infection control teams, and public health leaders in the UK and Nigeria, and is likely to be reinforced by recent events surrounding the importation of a case of Ebola virus disease to a hospital in Texas, USA.

Third, there needs to be a more coordinated, hard-hitting campaign to change long-term attitudes and behaviour in infection prevention and control. This includes appropriate media campaigns and training to ensure the public and health-care workforce are well educated in infection prevention.

A strategic approach will help to bring the epidemic under control. It will address key weaknesses in health systems around the world, improve their resilience, and reduce the risk of future outbreaks. Everyone must take responsibility rather than seeking scapegoats in a chronically underfunded global health system whose needs are so often eclipsed by issues of national insecurity and priorities shaped by political expediency.

This is a joint post with Nicholas Mellor, Co-founder of Merlin; Richard Allan, CEO, The MENTOR Initiative; Victoria Collins, University of Leeds School of Medicine; Katie Eves, Project Manager, The MENTOR Initiative; Elizabeth Collins, Lead Nurse, Department of Infection Prevention, Leicester Royal Infirmary; and Susan Davey, Senior Nurse, Department of Infection Prevention, Leicester Royal Infirmary.
Sustainability by technology

Hussam Jefee-Bahloul

Capacity building of societies in conflict and post-conflict settings is a necessity for long term stability. While most traditional efforts to train lay mental health counsellors in such settings involve field missions of training workshops, the limitation of such “in-and-out interventions” is lack of sustainability. In this post we discuss a sustainable model to provide initial training and supervision of lay counsellors using teleconference technology.

As reported by Mollica et al in their 2004 *Lancet* paper, one of the key points in rebuilding mental health systems post conflict is to “train all front-line responders in basic mental health principles such as psychological first aid”. To this end, two facilitators in New Haven, Connecticut, USA provided training on how to use psychological first aid (PFA), and ongoing supervision, to three volunteer lay counsellors in a clinic in Turkey. The clinic in Turkey provides psychological care to hundreds of Syrian refugees in the Kilis area. The clinic is run by a Syrian psychiatrist. Last year, the clinic was no longer able to keep four staff psychologists due to financial issues. The clinic’s psychiatrist and medical director concluded that volunteers in the clinic must be trained to assume more vital roles. As those volunteers were not paid employees, enhancing their capacity was essential to the function of the clinic. The three volunteers are Syrian youth refugees who were forced to leave their colleges after the conflict erupted. Educated Syrian refugee youth has been identified as a target population of interest for capacity building in this conflict setting. As our three volunteers had no background in mental health, the plan was to train them in PFA as a first step and later in the lay conselling manual developed by the International Federation of Red Cross and Red Crescent (IFRC).

During the initial training, video-conference presentation (using the online feature of PowerPoint in conjunction with Skype), role-play assignments, case discussions, and Q&A sessions were conducted. The volunteers gained mastery in using PFA techniques as shown in role play, pre- and post-measurement tests, and in the ongoing supervision. As a result of our training, volunteers were assigned triage responsibilities in the busy mental health clinic to help connect patients needing basic necessities or referring those in need of higher-level of psychiatric care. Sustainability in our model is ensured by continuous weekly videoconferencing sessions that cover ongoing cases, key PFA concepts, difficulties in the practical application of gained knowledge, and ongoing communication-skills training by role-play. Not surprisingly, the role-play element of training was identified by the trainees as the most beneficial learning experience. It is worth noting that the excellent internet connection in Turkey had allowed for good and barely interrupted videoconferencing sessions.

This experience had limitations, given the small cohort. However, the feasibility aspect of such a project should be...
highlighted. The importance of such training is its ability to build refugees’ capacity and enhance their ability to serve the community. Use of technology made the training more accessible and sustainable. Our pilot cohort will receive training in the IFRC lay counselling manual soon. In addition, more volunteers are to be trained in the coming months. On the basis of the existing experience, future volunteers will be educated more about the “training” nature of our sessions, as our current cohort had an initial impression of a “classroom” nature, resulting in test-anxiety. Education on the expected lack of knowledge (before) and improved knowledge (after) the training had helped relieve some of the anxiety.

To conclude, we report the successful use of technology in creating a sustainable model of training and capacity building in a conflict setting. We believe this model will help in resolving the dilemma of lack of capacity post-conflict and lack of resources on the long run. Mental health providers who cannot dedicate special time to travel, but who are willing to help, will be able to support these training and supervision projects. The ability to create sustainable training systems allows for better training, and perhaps improved clinical outcomes.

This blog was co-authored with Dr Andres Barkil-Oteo from the Psychiatry Department at Yale School of Medicine.
We know it works, so let’s keep women’s health central in global development

Ann Starrs

When I started working in the field of maternal health over two decades ago, half a million women were dying in pregnancy or childbirth every year, and people were just beginning to understand the connection between women’s health and economic growth. We’ve come a long way since then: maternal deaths are down by almost half, and we have ample evidence that women’s health and wellbeing are directly linked to a range of good outcomes—from reducing poverty and hunger to ensuring healthy lives for families to promoting equitable and inclusive societies. These achievements were core targets within the Millennium Development Goals.

This week, leaders from around the world have convened at the UN as they enter the final year of the lengthy, complicated process of reaching consensus around the Sustainable Development Goals. It is essential to include sexual and reproductive health and rights in the discussions this week, and in the goals themselves.

Today, more than 220 million women around the world want to avoid a pregnancy, but are not using a modern method of contraception. Some of these women lack access to services altogether, some are concerned about side effects, while others cannot obtain a method that meets their needs. This huge unmet need contributes to 85 million unintended pregnancies every year, the vast majority among women who live in the world’s poorest countries. When faced with an unwanted pregnancy, millions of women will decide that they are not in a position to have a child at that time. Yet, because abortion continues to be highly restricted in many developing countries, women with an unwanted pregnancy have few options. Many will resort to clandestine abortions, often performed under unsafe conditions. As a result, thousands of women will die, and many more will suffer serious and often lifelong injuries.

In addition, far too many women still lack the essential services they need to protect their health and that of their newborns, such as routine checkups during pregnancy and care for complications during delivery. This year, nearly 3 million infants will not survive their first month of life, and nearly 300,000 women—many of whom never intended to become pregnant in the first place—will die from pregnancy-related causes.

The health, social, and economic impact of fully meeting women’s needs for contraception and other reproductive health services around the globe is striking. The result would be far fewer unintended pregnancies (and unsafe abortions), dramatic declines in maternal and infant mortality, and a range of other benefits that would further the goals of the Sustainable Development Goals. We know it works, so let’s keep women’s health central in global development.
mortality, and reduced transmission of HIV infections (data forthcoming). Women who are able to plan their births are better able to complete their education, participate more fully and productively in the labour force, accumulate higher household savings, and raise healthier and better educated children. These family-level benefits accrue at the community and national levels as well, spurring economic development and growth. In a recent report published by the Copenhagen Consensus, 30 of the world’s top economists ranked investment in sexual and reproductive health and reproductive rights among the top 13 (out of 169) targets under consideration for the Sustainable Development Goals, finding that every dollar invested in family planning reaps $150 in benefits.

By now, every UN delegate knows that a country cannot thrive if half its population—women—are denied the opportunity to achieve their full potential. But for that to happen, women and couples must have the information and services to be able to make decisions about their own sexual and reproductive health, including the timing and spacing of pregnancies. Access to these services is both a basic human right and fundamental to economic development.

Various UN bodies have been working intensely over the past year to mould the post-2015 development agenda. It is encouraging to see that, thus far, sexual and reproductive health has been included in most drafts and discussions related to the Sustainable Development Goals. As the governments of the world convene this week to discuss them, they need to look at the evidence. But they also need to listen to the voices of the millions of girls and women around the world for whom access to contraception and safe abortion is integral to their survival, to their health, and to their wellbeing. Few investments reap such rewards, and ultimately, it’s all of us who benefit.
Why the NCD response needs universal health coverage

Chelsey R Canavan and Jonathan Jay

Universal health coverage (UHC) and non-communicable diseases (NCDs) are high priorities in global health—just look at the proposed post-2015 development goals. The increasing burden of NCDs is widely recognised, and a growing list of countries have joined the UHC movement. But what’s less widely understood is why a UHC approach is necessary for an effective NCD response.

To be clear, UHC in itself won’t be the answer to the NCD epidemic. NCDs are uniquely responsive to social determinants of health: the circumstances and environments in which people live. These factors contribute heavily to NCD risk factors like unhealthy diet, physical inactivity, and tobacco and alcohol use. The health system alone cannot get to the root of these problems.

Nevertheless, UHC efforts offer unique strengths for confronting the NCD epidemic in low- and middle-income countries (LMICs). Today, the staggering rates of unnecessary death, disability, and illness from NCDs in these countries are signs that our health systems aren’t fit for purpose. Done right, UHC reforms can dramatically reshape these systems around the most pressing needs. In fact, UHC might be the only realistic path to closing the NCD services gap, arguably doing more for NCDs than for any other health area.

NCDs cause 8 million premature deaths in LMICs each year, many of which are preventable or treatable with proven health system interventions. A woman in North America has an 80% chance of surviving breast cancer; in a developing country she has less than 40%. And for a child in a LMIC who comes down with strep throat, there’s a serious concern that it could lead to rheumatic fever, followed by the onset of rheumatic heart disease, all because of a shortage of the standard drug penicillin.

This divide reflects an unconscionable gap between burden of disease and health spending. Despite the large and growing challenge of NCDs, governments and donors allocate minimal resources to this area. National governments in LMICs haven’t responded to the need. For example, in Nepal (one of the few countries for which data on NCD spending is available) a meagre 7% of the national health budget is devoted to NCDs, despite accounting for 60% of the disease burden. And donors haven’t picked up the slack: only 1% of all development assistance for health went to NCDs in 2011.

Contrary to common misconception, the greatest burden of NCDs—both in terms of health consequences and impoverishment—falls on the poor. And since a large and increasing share of the cost of NCD care comes from out-of-pocket payments, NCDs are a prime cause of catastrophic health expenditures and reinforce societal inequities.

And yet, countries like Rwanda, Mexico, and the Philippines are proving it’s possible to expand access to critical NCD care and treatment in LMIC settings.

Chelsey R Canavan is a research and communications specialist for Management Sciences for Health, a global non-profit that develops sustainable health systems in Africa, Asia, Latin America, and the Middle East.
In the Philippines, NCDs account for more than 30% of premature deaths. Recognising this large and growing problem, the country has set about providing a set of low-cost early screening and treatment services. These include assessments for risk factors like tobacco use and overweight; referrals for treatment of heart disease and high blood pressure; and inclusion of essential drugs for hypertension and diabetes.

This Package of Essential NCD Interventions (Phil PEN) is just a start, but it’s an important one. The programme is being provided through PhilHealth, a national health insurance scheme that covers the majority of the population. And that’s no surprise—like Rwanda and Mexico, the Philippines is demonstrating that a UHC programme is an efficient vehicle for scaling up NCD services.

Under a UHC agenda, countries must define a package of health services that will be covered by health insurance (or its equivalent). Often limited to start with, this list of services is expanded over time, as funding increases and health needs shift.

To define this essential package of services, governments and health officials consider various factors, including the primary causes of illness, and the effectiveness and affordability of interventions. This is where we can expect to see expansion of NCD services. As policymakers consider the highest-impact interventions their pool of funding can buy, it’s simply impossible to ignore the benefit of NCD services.

A good place for LMICs to start is with NCD “best buys”, a core set of NCD interventions recommended by WHO. They include cervical cancer screening, counselling and drug therapy for cardiovascular disease, and other high-impact interventions. Importantly, they cost between just US$1 and $3 per person to implement in LMICs—partly self-financed by revenue-generating interventions like tobacco taxation.

Such highly cost-effective interventions should be affordable even for most low-income countries, with the increased domestic financing and individual contributions that are built into UHC reforms. Countries can build on this core set of NCD services over time, especially as economic growth and political commitment generate more funding for UHC.

As we see it, UHC is the only option for scaling up towards comprehensive NCD services for everyone. The alternatives just won’t work. Freestanding public health programmes—say, to provide mammograms or to identify school children with asthma—can scale up a single service but don’t mean much without a strong health system behind them. Given the nature of NCDs—caused by shared risk factors, closely interconnected with other health conditions, and often requiring complex, long-term care—governments will never move the needle without a robust, fully functioning health system.

Neither can governments leave prevention and treatment to individual consumers and providers: out-of-pocket payment, which is the status quo in many LMICs, simply means people don’t seek care, or they risk their financial welfare paying for it. A household in India, for example, can expect to spend up to 34% of its income caring for a diabetic family member. Inaction on the gap in NCD services is inexcusable, exacerbating inequity and fuelling the epidemic.

So while we mustn’t overestimate the promise of UHC for NCDs—addressing NCDs requires many societal changes that UHC activities can’t plausibly encompass—we should recognise UHC’s importance to a future in which health systems respond effectively to the epidemic. That’s a healthier and more just future that we’d like to be part of.

This is a joint post with Jonathan S Jay. Jonathan is an attorney, bioethicist, and senior writer for MSH. Previously affiliated with Georgetown University and the National Institutes of Health, Jay serves as coordinator of Health for All Post-2015, a global campaign of civil society organizations advocating for universal health coverage in the post-2015 development agenda.
Ebola, or the messy cocktail of public health and globalisation in post-colonial Africa

Jose Martin-Moreno

Ebola virus disease (EVD) is ravaging west Africa, with more reported cases in the last six months than in the previous 37 years. As infected aid workers and travellers from developed countries trickle home for better health care and experimental treatments—unavailable to the thousands of Africans infected with EVD—the spectre of a global Ebola pandemic has appeared, and with it the accompanying sensationalist and fear-mongering media reports, moral and ethical hand-wringing, and finger-wagging at Big Pharma. Even the shrill voice of international alarm, though, has not yet managed to drown out the increasingly desperate calls for equipment, training, and help from those on the front lines of the outbreak.

Finally—and only after the threat has touched the citizens of developed countries—the West has woken up to the pressing imperative for a coordinated, global response. However, centuries of shared history between the West and this particular corner of Africa (slave-trading, noblesse oblige colonialism, exploitation of natural resources, support for corrupt leaders and military coups, and a few botched pharmaceutical trials on African children thrown in for good measure) have left an ugly legacy. Western Africa today is characterised by chronic poverty, weak institutions, negligible capacity to protect the health or physical safety of its inhabitants, and a deep-seated and understandable mistrust of both government institutions (foreign and domestic) and external aid. The resulting vacuum of credibility and community leadership is only imperfectly filled by traditional faith healers, community elders, and others. This context is fertile ground for a disease of EVD’s aetiological characteristics, making WHO’s Ebola Response Roadmap an ambitious—but hopefully not impossible—plan of action.

One of the most fundamental hurdles that international actors must overcome is to engage local populations—those most affected by the outbreak—in halting the spread of the disease. Former Director General of Health Services in Uganda, Francis Omaswa, described trust-building efforts as the cornerstone of response efforts in 2000, and indeed, neither national authorities nor foreign agencies can impose outbreak control measures on local communities (as made obvious by the armed “liberation” of quarantined patients in Monrovia). Nor do these actors necessarily have the credibility to convince mistrustful communities that the disease is not a myth or a creation of Western laboratories to eradicate them.
To tackle this breach in communication, the local media and the health-care professionals long based in these countries—from west Africa or elsewhere—can and should be empowered to act as cultural mediators between public health organisations and the general population. Local engagement should include scrupulous respect for local customs, the recruitment of formal and informal community leaders and healers, close and transparent communication with print and broadcast media, and direct communication campaigns, with regular press conferences and internet and mobile communications. Only a constant flow of accurate information from a variety of trusted sources can help west Africans overcome the fear, denial and panic that typically accompany epidemia and which are exacerbating an already extreme crisis.

Just as importantly, health-care workers, medical facilities, and communities urgently need massive amounts of equipment, supplies, trained manpower, and technological support. The departure of foreign doctors without even the most basic personal protective equipment has intensified existing shortages of medical personnel. Likewise, health-care worker strikes and desertions stemming from the high risk of contagion and death among staff have led a systemic collapse of health-care services, making it virtually impossible for anyone in the affected regions—Ebola patient or not—to receive medical care. Meanwhile, food prices are soaring, threatening to reverse the fragile progress that this region has managed to achieve (often despite, not because of, Western involvement). The suspension of flights, ships, and ground transport that could alleviate at least the material needs has contributed to the widespread impression among west Africans that they alone in this crisis.

While organisations such as WHO, the CDC, Medicins Sans Frontieres (MSF), the World Bank, and others have stepped up efforts to mobilise and coordinate funding, personnel, and medical supplies, others, including the International Monetary Fund and the European Investment Bank, have failed to commit even basic funds towards essential diagnostic and laboratory needs, which are not only desirable from a human perspective of solidarity, but imperative in stopping the outbreak—and its economic impact—in its origins. Given that even optimistic estimates predict that the current outbreak will rage on until at least the end of the year, the immediate and sustained support of the international community is absolutely crucial. WHO’s recent and intense action in particular is a positive sign that UN institutions (and the member states that govern them) are beginning to marshal a response, and there is no doubt that, eventually, the outbreak will be contained—as all past Ebola outbreaks have. But each passing hour will make it more difficult, more costly, and more destructive to west African communities.

The unconscionable delay is, perhaps, tinged with the cynicism that has often characterised humanitarian aid in Africa: a short-term, short-sighted commitment to the self-sustaining “crisis caravan”, lacking any real capacity-building or transfer of ownership and leadership to local stakeholders. Yet the underlying reason that this outbreak continues—the weakness of the public health system as a whole—makes stop-gap measures insufficient. Without access to clean water, calls for hand-washing are irrelevant; without reliable stocks of essential medicines and supplies in health centres, the reluctance of patients to face a painful and unattended death among masked strangers is understandable. Without effective public health communication on the benefits of early detection and supportive care, the high fatality rate will likely remain intractable. In short, unless we work with Africa on its own terms to strengthen public health capacity in the long term, the international community will not be able to avert future outbreaks any better than it has been able to control this one. Our collective failure to engage Africans as equal partners will ultimately condemn them to relive this human tragedy once again.

This is a joint post with Meggan Harris, Gilberto Llinás, and Juan Martínez Hernández.
NCDs: can we and should we not do better?

Sandeep Kishore

On July 11, I spoke as a physician, as a scientist, but most of all as an advocate, to the UN High-Level Meeting on the global response to non-communicable diseases (NCDs). I focused on trade justice, money, and the rights of people living with NCDs to position NCDs as the social justice issue of our generation. Can we and should we not do better?

Money

Let’s be honest. I am painfully aware that some UN Member States have called for “no new resources” for the NCD epidemic. And many have wondered where the public sector investment is. At the international level, I understand that the contributions for the global coordination mechanism—a unique global partnership to address the greatest disease burden in mankind’s history—averages just US$10,000 per member state.

$10,000. That’s it. That is a paltry $1.8 million in total. Or 0.00002 cents per person. How is it possible for a country spending as little as $19 per person per year on health to have any measurable effect on preventing, controlling, or monitoring NCDs?

We know that to have an impact on NCDs, we have to engineer a broader agenda on health and human development. And while calls for increased financing go on, one concrete step is the development of NCD units at the country level whose mandate is to institute action across clinical, public health, and regulatory domains. Our experience is that these NCD units have not even scratched the surface of their true potential.

One way to help these units to actualise their potential is to invest in human capital to lead these units. From my work with the Young Professionals Chronic Disease Network, with members in over 130 countries, I can affirm that there are nutritionists from Dhaka to Delhi, lawyers from London to Lagos, physicians from Nairobi to New York, and people living with NCDs who are stepping up with passion—but have little to no support.

We, as the next generation, have no outlet. And this generation—my generation—has untold and untapped human capital to lead on NCDs, but needs guidance. And we need it now.

To this end, what if the global coordination mechanism, the NCD partnership, could help address this gap at the country level? Imagine this: a fellowship for the future, an NCD Core Fund, that is resourced, modestly, to equip and position 10 young leaders from each WHO Member State to staff NCD units in all Member States by 2018.

Bangladesh affirmed this need during the High Level Meeting. The delegate affirmed that Bangladesh and other low-income countries simply did not have the operational, financial, or human capital to address NCDs in a durable fashion. Bangladesh amplified the call for a global resource pool for NCDs.

Solidarity on trade and health

6 months ago, I bore witness to the testimony of South Africa’s Director General of Health, Precious Matsoso, to the WHO Executive Board. She testified, powerfully, that a US-based public relations firm enlisted by more than two
dozen pharmaceutical companies was planning a subversive campaign to halt reforms to South Africa’s intellectual property and trade policy. These reforms, if passed, would have safeguarded access to medicines for all diseases—from HIV/AIDS to cancer, from diabetes to dengue.

Admirably, WHO Director-General Margaret Chan and Member States rose in solidarity with South Africa to speak out against undue corporate influence. And one such ally to South Africa was, to my surprise, Australia. Australia relayed its own battle to invoke Trade-related Aspects of Intellectual property rights (TRIPS) flexibilities in their fight against tobacco, including the landmark Plain Packaging Act in 2011.

Australia dared to challenge the tobacco industry. But the storyline of what happened next is all too familiar. Three major tobacco firms came together to fund a $9 million campaign to destroy Australia’s efforts. Lawsuit after lawsuit ensued.

Whether it is access to medicines, tobacco control, salt reduction, or reduction of marketing of sugary drinks to children, we understand the enormous pressures our governments face behind the scenes to stand up for the public’s health. We get it. And as civil society, as the people, our avowed responsibility is to stand with our governments. But must be clear: we are also watching. We are mobilising a people’s movement. Initiatives such as NCD Countdown 2025 will use country templates to ensure our countries are moving towards the goal of a 25% reduction in premature mortality by 2025 from NCDs.

**The transformative advocacy of people living with NCDs**

Were it not for the transformative advocacy of people living with NCDs in the first instance, the NCD movement would be dead on arrival.

In 2011, when world leaders, including heads of state, met for the first ever High-Level Meeting on NCDs, our collective peacefully assembled outside UN Headquarters in a demonstration for equity, action, and targets.

One of the people standing with us was a close friend of mine, Gloria Borges. At the tender age of 28, she was diagnosed with stage IV colon cancer. After dozens of surgeries and more than 40 rounds of chemotherapy, she summoned the strength to travel to New York City. She took the bullhorn. And this was her message to our governments on September 19, 2011: “Do something.”

On January 5 of this year, Gloria Borges passed away. I dedicated my statement on behalf of civil society to her and all the Gloria Borges around the world. Let us not succumb to the chronic disease of inaction; to the cancer of empty rhetoric.

We can start with solidarity on trade, leveraging platforms to empower the next generation in a fellowship for the future, and tapping into the soul of a generation—of people—to obliterate the social injustice of NCDs.

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*Sandeep Kishore’s presentation to the High-Level meeting can be viewed here.*

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The truth about unsafe abortion

Faustina Fynn-Nyame

There are just 500 days left to achieve the UN’s Millennium Development Goals. Established to drive global development and end poverty, the goal on maternal health is lagging behind and remains the most off-track. As world leaders debate their progress and what should take their place, we are calling on them to honour the promise to make contraception available to every woman; to improve access to safe abortion where legal; and to make sure that, even if it is not legally available in a country, lifesaving aftercare always is.

Maybe the truth’s just too much for people. That’s what I think sometimes, when the pain and anger subsides. There are times when the truth about unsafe abortion is too much for me too. Often it keeps me up at night.

Like the time we had to help a terrified young schoolgirl who took a chokorboma to solve her problem. Someone gave it to her because that was the way they did abortions there, but she could have had no idea what the reality would be. Made from a glass coke bottle and filled with god only knows what, the chokorboma literally exploded within her. Her body was left unrecognisable.

I have never seen anything like it. It was horrifying. Screaming and screaming, the 15-year-old girl was carried into our clinic, shaking uncontrollably and rigid with pain. I can still see her face even now. I will never forget it.

She was one of the lucky ones, I try to tell myself. A worried neighbour had at least brought her to us, and we were able to save her life, but there was little we could do to heal her. I knew she would never be the same again; never be able to have children or enjoy intimacy. The poor girl had been broken. Physically and mentally scarred, she was going to have to live with the consequences of that for the rest of her life.

There it is. The truth: the reality of “unsafe” abortion, that innocuous word that is apparently so easy to ignore.

Can you imagine willingly putting yourself at risk like that? Being so desperate to end your pregnancy that you will quite literally risk your life? Every year 21.6 million women are that desperate—99% of them are in the developing world. Thousands of them die and millions more are left seriously injured like this poor girl from Ghana.

And the worst part of it is that we’ve done that to these women. We’ve failed them by not getting them contraception to avoid pregnancy in the first place, by stigmatising abortion and burying it underground, and by not getting them the medical care they need when it goes so horribly wrong.

Abortion is an uncomfortable issue for most people. I get that. It will never be legal everywhere. Again, I get it. But we have to face facts here. Legal or not - and by extension safe or not - when backed into that corner, a woman will do anything she needs to and we have to stop ignoring that.

Through our campaign, Make Women Matter, Marie Stopes International is pushing to end the damage caused by unsafe abortion. Our petition calls on the UN Secretary General and Co-Chairs of the Open Working Group on Sustainable Development Goals to ensure that the next development agenda delivers on women’s rights and empowerment, universal access to sexual and reproductive health and rights, and improved access to safe abortion.
Regaining trust: an essential prerequisite for controlling the Ebola outbreak

Francis Omaswa

The Ebola outbreak afflicting a number of west African countries has become a real African and global threat, as WHO confirmed last week. Travelling via Nairobi or Addis Ababa, the two major airline hubs that connect west and east Africa, passengers are warned to be careful, to avoid contact with crowds, or to cancel air travel altogether. Many health workers have succumbed to the infection and the USA is evacuating its infected health professionals. There is panic among communities in the affected countries. Governments and international agencies have weighed in. However, it appears that a trust gap has developed between the health system and the general population which has made control efforts difficult in west Africa. So how can this trust be regained?

Until the current west African Ebola outbreak, Uganda held the record for the largest epidemic, with 425 recorded cases of Ebola during the year 2000. I was then Director General of Health Services and oversaw efforts to control this epidemic. The single most important lesson we learned was that building and holding public trust by the government and health personnel is the foundation for all control efforts. Ebola evokes fear and apprehension at individual and community levels, which easily results in herd responses, negative or positive. We achieved public trust in Uganda through very intensive communication with the public. Epidemic status reports were issued through press statements every morning, lunchtime, and evening along with a press conference each morning. The media are critical in building and sustaining trust and their own confidence has to be won.

This was not easy and required personal sessions with the leaders of the media houses on a regular basis. There were also hotlines for anyone to seek or convey information open 24 hours at the Ministry of Health Headquarters and at the District Medical Office in the affected districts.

The second key intervention we made was the recruitment of the support of community or village leaders working alongside the Village Health Teams who are a cadre of community health workers that already existed in the public health system structures. Controlling the epidemic is about early detection, isolation, treatment of new infections, contact tracing, and safe handling of body fluids and the remains of those who die.

These things can only happen by staying very close to all families and households. In Uganda this was achieved by building community trust of the public health system, including recruiting support and oversight by local formal and informal community leaders. Top Ministry officials moved to live in the affected districts to support and direct control efforts and the Minister and Director General visited
weekly using helicopters to go to the villages addressing public meetings and inspiring local health workers.

The third key intervention was the introduction of technology for quick field diagnosis of new infections. This enabled suspected but negative individuals to leave isolation quickly and return to normal life. It also enabled early initiation of treatment measures for those who test positive. This was the contribution of partners such as the US Centers for Disease Control and Prevention, who brought in the field laboratory, and WHO, that came with supplies and technical expertise to support and stay with us in Uganda. This global solidarity, however, can only work where there is effective local leadership that is trusted by the local population.

Finally, controlling an Ebola outbreak is about the strong primary health-care principles that we have always aspired to—ie, leadership from the top, integrated with routine governance of society and involving the active participation of the people themselves. Once we have controlled this outbreak, let’s institutionalise these practices because we need them anyway but also because there will be another Ebola outbreak soon enough.
Empowering women and girls: the impact of gender equality on public health

Deborah Derrick

Several news stories in recent months have illustrated gender inequalities on a global scale. Social media campaigns like #YesAllWomen and #BringBackOurGirls have helped to raise awareness of injustices and encourage female empowerment. What has gone mostly unspoken in these discussions, however, are the ways in which these social inequalities affect public health.

Dr Nafsiah Mboi, Indonesia’s Minister of Health and Chair of the Global Fund to Fight AIDS, Tuberculosis and Malaria’s board, has said that “in many societies, women and young girls do not enjoy the same access to health as men, let alone the same rights or opportunities. But a society that does not cure and treat its women and young girls with love and care and with equality will never be a healthy society.”

Many in the global health community are working to weave a focus on women and girls more tightly into the framework of global public health efforts. The Global Fund, for its part, is committed to addressing the social, legal, cultural, and biological issues that underpin gender inequality and contribute to poor health outcomes. As the world’s largest public health financier, it has been supporting programmes to address the health needs of women and girls, including investing in more than 10% of the total foreign aid for maternal and child health every year since 2005. It is also supporting half of all women receiving antiretroviral treatments for HIV/AIDS in Africa. In addition, at its March board meeting, the Global Fund launched a new Gender Equality Strategy Action Plan, placing increased priority on addressing gender inequalities and strengthening efforts to protect women and girls’ rights to health care.

Reaching women and girls is critical to achieving impact. HIV/AIDS is the leading cause of death worldwide for women aged 15–44 years. Globally, adolescent girls and young women aged 15–24 years are twice as likely to be at risk of HIV infection than boys and young men in the same age group. Among adult women ages 20 to 59 in low-income countries, tuberculosis is one of the five leading causes of death. And, in Africa, an estimated 10,000 women and 200,000 of their infants die annually as a result of malaria infection during pregnancy.

Gender inequalities are a strong driver of HIV/AIDS, tuberculosis, and malaria. Women and girls tend to have unequal power in sexual relationships, economic decision-making, and access to health information and services, all of which greatly influence their vulnerability to disease. Traditional power dynamics among couples may undermine a woman’s ability to receive antenatal care, including services to prevent mother-to-child transmission services (PMTCT) when an expectant mother is HIV-positive. Gender politics can prevent a woman from accessing insecticide-treated nets to prevent malaria, or from taking malaria-stricken children to health services without a partner’s permission. Transgender women, sex workers, and women who use drugs are also particularly marginalised, and face challenges...
in access to health care. The action plan is designed to address these harmful gender norms and scale up services to reduce gender-related vulnerabilities to infection.

The Global Fund action plan is also strengthened by the 2013 rollout of the new funding model, in which country coordinating mechanisms (CCMs)—the group of government, civil society, and health partners that identify a country’s needs, apply to the Global Fund for financing, and provide implementation oversight—is charged with integrating gender issues into their health plans. Under the new funding model, a country’s CCM is required to: establish greater gender balance among its membership; provide analysis of gender inequalities and related disease response; produce evidence-informed programming with sex- and age-disaggregated data that demonstrates investment for impact; and respond to the needs of most-at-risk populations of women, specifically female sex workers, transgender women, and drug users.

The Global Fund is also working to empower civil society organisations, including organisations of women who are living with or are directly affected by the three diseases, by conducting comprehensive training on gender issues, identifying capacity gaps, and providing technical assistance. The Global Fund has already trained more than 100 women in 33 countries on the strategy—with further training planned—to help enhance the involvement of civil society and gender advocacy in Global Fund-funded health programmes and community systems.

The gender equality plan is already having an impact. For example, during its 2013 grant review process, Cambodia expressed a willingness to expand HIV interventions addressing the vulnerabilities and specific needs of women and girls. To that end, the Global Fund’s grant approval committee recommended that the country set aside a certain percentage of money for programmes directed at this population. To help ensure measurable results, conducting a gender assessment of the national HIV responses has also been built into the grant as a requirement for future funding. Together, the Global Fund, Cambodia’s Ministry of Health, and partners are accelerating efforts addressing gender-related challenges in HIV responses.

Gender-focused health strategies can act as a catalyst for global change in the health and social welfare of women and girls. As former Secretary of State Hillary Clinton said at the 2012 Global Health Summit, “improving women’s health has dividends for entire societies.” We must, as the Global Fund’s Dr Mboi suggests, consider health and gender holistically, helping women and girls achieve a better quality of life and increasing our impact in the fight against HIV/AIDS, tuberculosis, and malaria.
A 21st century upgrade for global health

Gemma Bowsher

The current academic system is failing to meet the information requirements of global health. Global health has long relied on research carried out by large institutions in the global north, with scant attention paid to the untapped potential of local health-care workers in the countries most affected by the burden of disease.

Currently only 10% of global health research accounts for conditions that constitute 90% of the disease burden. This discrepancy was highlighted by a recent study that identified inadequate local research infrastructure as the root of the problem, as well as the WHO’s most recent world health report, which focused on the inequalities in research output between high-income and low-income countries.

There is an urgent need to refocus research into local needs. What is needed in these contexts are simple, high-quality, practical evaluations to guide local practice and support the development of home-grown researchers to solve local problems.

The current academic system has failed to adequately reflect on the structural aspects of this north-south inequality. Research is almost exclusively expensive, and the vast majority of funds are channelled by donors towards specialist research units in established institutions. Credibility is based on publishing experience, which fosters unnecessary elitism in research. This is further compounded by the publishing system; an over reliance on closed access published literature in mainstream journals will never meet the information requirements of those working day to day in health care in developing countries.

As students and young researchers, we face an uphill struggle to contribute in a field where an existing body of published work is a necessity for recognition. This self-reinforcing dilemma fails to acknowledge that even with limited resources, students and young researchers have much to contribute to global health, particularly those working in countries suffering a disproportionate burden of disease. Involving more young people in this vital field opens doors to innovative ideas that can lead to real change in the research agenda. Empowerment and engagement of these individuals should be a priority for research institutions.

One organisation, The Global Health Network is seeking to rectify this imbalance by leading the way in bringing research capacity to all through its recently launched process map. This revolutionary new tool provides step-by-step guidance on how to conduct a global health project, such that would-be researchers in the field have access to the information they need to guide them through the process. It also incorporates a central hub that links them with others working in similar fields, fostering south-south partnerships and seeking to equalise the power balance of research activities. This sharing of knowledge allows individuals to learn from others’ successes and provides a model for strengthening best practice at a global level.

This project certainly reflects advances in digital capability; with ever-expanding access to information technology in the developing world, coupled with the increasingly recognised power of online networks, opportunities such as...
this have suddenly become possible in a world where distance has become an irrelevant barrier to the transmission of ideas.

The real shift here is in the way we view research. Tackling the issues of capacity and collaboration, the process map is attempting to radically change the rules of the research game. By tapping into the latent power of the health workforce and capitalising on their powers of observation and cohesion, the process map is combating the inequalities in research capacity that act as a barrier to the delivery of effective interventions. This pluralist approach works on the basis that anyone can carry out health research anywhere, given the appropriate tools. In the future we hope to see research reflecting local needs rather than narrowly defined donor priorities.

The Global Health Network’s process map is one example of the future that global health desperately needs in order to secure equitable research capacity for the next generation of researchers. Where innovation still stumbles, however, is at the interface of academia and publishing. The digital revolution is vital to bringing global health research firmly into the 21st century—the process map is a step in the right direction.

This is a joint post with Nathan Post (co-founder of the Junior Humanitarian Network) and Amelia Martin (Director of International Affairs at Medsin-UK).
Putting collaboration at the heart of applied research and delivery for global health

Bertie Squire

The Collaboration for Applied Health Research & Delivery (CAHRD) is a new initiative from the Liverpool School of Tropical Medicine (LSTM) that aims to take a fresh approach to a range of research and delivery work which is still in search of an agreed definition. What does this mean for the way in which health systems can be transformed to improve the health of low-income and middle-income populations?

At LSTM we do not claim to have all the answers, by any means, but we are serious about taking a truly collaborative approach to what World Bank Director for Health, Nutrition and Population Tim Evans called “the science of delivery” in his Leverhulme Lecture in Liverpool Town Hall on June 12 this year. The lecture was a centrepiece of the CAHRD Consultation which took place over one and a half days last month. It was an intense couple of days for the almost 170 participants, and the culmination of months of work and preparation: how do you successfully establish creative dialogue and productive joint working across and between a range of developing country contexts, health topics, and disciplines? This was the challenge we felt we had to meet in our approach to a kind of research that is notorious for disputes about definition. Several terms have been used to describe the territory, or parts of it, including “operational research”, “implementation research”, “translational research”, “applied research”, “delivery research”, “health services research”, and “health systems research”. Evans called it the “third wave of research in global health”—the newest and emerging wave that builds on the preceding biomedical first wave and clinical-epidemiological second wave. At CAHRD we have chosen to call it “applied health research and delivery” in line with Remme and colleagues. It also resonates with the concept of T2 translational research advocated by Woolf and colleagues.

We started by selecting four areas of work where LSTM already has productive global collaborations with coordinating centres in all four of its research departments, including both those you would expect to have a large portfolio of applied health research and delivery work (the departments of International Public Health and Clinical Sciences) and those more naturally associated with bench science (the departments of Vector Biology and Parasitology). The four workstreams chosen were lung health, maternal and newborn health, neglected tropical diseases, and health systems. Each workstream was tasked with writing a discussion paper about the three issues that would be, for them, the major health challenges over the next 10 to 20 years, along with some initial ideas on pathways towards solutions for these challenges. The 12 discussion papers were then shared between the four workstreams and thereby subjected to a range of internal and external peer-review. This process started the dialogue within LSTM and also, to some extent, within existing networks.
The next stage was to invite a range of external panelists to help us to set a strategic direction, by using the papers as a starting point for substantive discussion with as many of our colleagues from developing countries as possible. We circulated the papers in advance and then set up a range of different discussion formats over a one and a half day meeting in Liverpool. On day 1 there were plenary presentations open to all, followed by discussion in small, closed groups and then the Leverhulme Lecture. Day 2 started with a debate in the Question Time format, chaired by Peter Sissons—one of the UK’s most experienced broadcast journalists and LSTM vice-president. This gave us the chance to mix some more junior researchers with experienced colleagues on the panel, and allowed for indepth debate around five questions which we selected from around 60 submitted in advance from across the collaborative networks. The consultation ended with feedback from the group work in open plenary, with additional discussion on conclusions and next steps.

We were both excited and apprehensive about how the whole process would go, and I am pleased (and relieved) that the discussion was lively and energetic and generated a plethora of ideas and directions which we would not have captured by continuing to think in our existing silos. Mwele Malecela, Director of the National Institute for Medical Research (NIMR) in Tanzania, said “CAHRD is an excellent example of developing policy and research in collaboration between the Global North and the Global South”. Himansh Bhushan, Deputy Commissioner, Maternal Health in Charge, Government of India, echoed Malecela and added that CAHRD might be a way to further efforts in developing countries to “reach the unreached with quality services”. Amuda Baba, representing IPASC and from the fragile Ituri region of Democratic Republic of Congo, said that the consultation had reminded us all to think about “whose health system is it that we are talking about”, and called for local engagement and investment. Jeremiah Chakaya from KEMRI, Kenya, and Irene Namakhoma from REACH Trust, Malawi, picked up this call and both look forward to the day when developing countries seriously invest in, and use, applied health research, matching resources generated from developed countries.

We have together set the collaboration off to an enthusiastic start. Our next challenge is to ensure that we now capitalise on the energy and ideas. As we keep our sights firmly on the medium- to long-term future, I firmly believe that we need to keep in mind that CAHRD’s focus on poorer populations looks set to remain a key priority. As Chris Whitty, Chief Scientific Advisor to the UK’s Department for International Development, predicted during the consultation: “While the numbers in the middle classes in developing countries will clearly grow—gross national income (GNI) in developing countries is set to double in the next 10 years)—the numbers of skilled health providers is set to expand more slowly. By the laws of supply and demand, these providers will be pulled away from providing quality health care for the poorest”. We really have to collaborate effectively, and energetically, to disprove that prediction.
Focusing on key populations affected by HIV: a smart investment for greater impact

Kimberly Green

In an era of limited resources, HIV prevention, care, and treatment efforts need to focus on the smartest investments. This means investing in programmes that can have the greatest impact in halting HIV transmission and turning back the epidemic. From a public health perspective, the effective use of resources requires focusing on key populations who have the highest level of HIV infection and tackling the barriers that discourage and prevent them from accessing health systems and services. These populations are broadly defined as sex workers, men who have sex with men, transgender people, and people who inject drugs.

As the world gathers at the 20th International AIDS Conference (AIDS 2014) in Melbourne, Australia, July 20–25, 2014, we have an excellent opportunity to share how investing in evidence-based strategies can change the trajectory of the epidemic once and for all.

We know what works to prevent HIV acquisition and transmission among key populations and how to link these groups to HIV treatment and retain them over time. Yet, in reality, sex workers, men who have sex with men, transgender people, and people who inject drugs are often unable to find and access respectful and high-quality HIV services. Limited systems capacity, stigma and discrimination, violence, discriminatory laws, harmful gender and other social norms, exclusion from meaningful input into programmes, and lack of government support to scale up and sustain current donor-supported services for key populations remain persistent obstacles.

Programmes for key populations are especially weak and fragmented in sub-Saharan Africa, where the focus has primarily been on curbing the epidemic among the general population. Recent efforts to provide HIV services for key populations in the region have encountered new barriers. State-sponsored attacks and deeply discriminatory laws prohibiting same-sex relations in Nigeria and Uganda further exacerbate the many challenges already facing key populations in accessing HIV prevention and care.

Turning the tide

The good news is that some countries, such as Ghana, Senegal, and South Africa, are addressing human rights violations at the community and systems levels with a measurable impact. They have done this by including key populations in their national strategic plans and budgets, by conducting routine HIV surveillance to understand the burden of HIV in these populations, and by providing HIV prevention and treatment at scale using dedicated community providers who are drawn largely from key populations themselves and health-care workers who are passionate.
about providing quality care. The result: key populations are increasingly empowered to hold their governments accountable for delivering sustainable services that address their needs.

We can do much more. A number of proven strategies can help ensure key populations are reached with effective interventions, including:

- **Identifying target populations and locales and comprehensively assessing risk.** We can develop better methods and metrics to map subnetworks of key populations, their HIV risk, and their access to services. We also must assess the impact of gender norms on access to services, social cohesion, police violence, and other community and structural factors that influence risk.

- **Diagnosing “leaks” and revealing barriers within the HIV services cascade.** Use of the proven cascade framework, an easy-to-understand analytic approach to address gaps in the HIV prevention-care-treatment continuum, will help identify opportunities to improve services to stop the spread of HIV—from HIV testing through care and treatment. It is a powerful tool for advocacy, consensus-building, and planning that can help transform how governments view, value, and invest in HIV services for key populations.

- **Scaling up “what works” to ensure the most strategic use of resources and access to newly emerging technologies.** Innovative, cost-efficient approaches help to make tailored comprehensive service packages easily available. HIV mobile health technologies (mHealth) to improve tracking and retention and create new prevention technology and point-of-care diagnostics are good investments, and all need to be tested, disseminated, and brought to scale.

- **Strengthening key population organisations to address structural barriers.** Key populations can be supported in organising to advocate for changes in the actions of law enforcement and court personnel, health-care workers, and policymakers. Highly effective key population organisations can be trained to mentor counterparts with less capacity, enabling organisations serving key populations to deliver high-quality HIV services.

- **Ensuring key population interventions are sustainable over the long term.** Government buy-in and financial support towards HIV services for key populations are essential. It goes without saying that both political will and financial resources are necessary to ensure we have optimal impact on HIV infection in key populations.

AIDS 2014 provides yet another opportunity to share what we know works in HIV prevention, care, and treatment. Let’s not waste this chance to focus on the people who are most in need and on the strategies that can create cost-effective and lasting impact.

This is a joint post with **Ward Cates**, FHI 360 Distinguished Scientist and President Emeritus.
World Cup reaches fever pitch, but there is another goal worth fighting for

Esther Worae

World Cup fever. Everyone’s been gripped. The anticipation, victorious highs, and even the com- miserating lows. The World Cup has that unique ability to bring people and countries together behind a common cause.

There will be nearly 77 000 people watching the final at Estadio Nacional in Brazil on Sunday. You can imagine the packed stadium and the endless sea of faces.

But as the world waits with bated breath, I’ve found myself distracted by another number. A number that I find harder to picture: 289 000—the number of women who died from pregnancy or childbirth last year. That’s nearly four times the number of people we’ll see in the crowds this Sunday.

Giving birth is a beautiful thing, miraculous even, but things can go wrong and sadly in countries like mine, too many women are still dying unnecessarily in this rite of passage.

One of the simplest ways to save these women’s lives is to give them the opportunity to use contraception so they can give their bodies time to recover between births; save for the health-care costs they’ll need to see them through to a safe delivery; or even avoid a pregnancy all together.

But for more than 220 million women around the world that is simply not an option, because even though they want to use it, they are unable to access contraception.

It’s not just complications from the childbirth or pregnancy that is causing these women’s deaths. Unsafe abortion is a very real problem too. In Ghana where I am from, everyone knows a family member, a friend, or a friend of a friend who’s died as a result of an unsafe abortion. The stories are so brutally desperate they turn my stomach. Sticks, wire hangers, even glass forced inside a woman; herbal concoctions and poisons drunk; I’ve even known of women asking their friends to punch them over and over to end the pregnancy. It’s heartbreaking.

But what’s worse is the fact that it needn’t be this way. Change is possible if we get behind this cause.

Today, July 11, is World Population Day, established by the UN to raise awareness of global population issues. So here it is: break down the barriers blocking women and girls from using contraception and we’ll put an end to this needless loss of life, and make unsafe abortion a thing of the past.

The UN’s consultation on the goals that will succeed the Millennium Development Goals (MDGs) next year has just one more round of amends before it is ready for debate. Worryingly, sexual and reproductive rights are unlikely to make the final draft.

But there is still time for our world leaders to address these issues.

A global campaign to Make Women Matter is calling for universal access to contraception to improve the lives of women and put an end to preventable maternal deaths. Sign the petition today and let’s make this goal a reality.
Scabies joins the list of WHO neglected tropical diseases

Andrew Steer

Scabies has been added to WHO’s list of neglected tropical diseases (NTDs), in recognition of the very large burden of disease caused by the mite Sarcoptes scabiei. Listing of scabies as a WHO NTD shines a much needed light on this disease of the poor, making the problem more visible to the international public health community and providing a potential pathway for integration of control of the disease into established NTD control programmes.

Scabies is a true NTD, sharing key features of all NTDs.

**Scabies is a proxy for poverty and disadvantage, affects populations with low visibility and little political voice, and causes stigma and discrimination**

Scabies affects people from every country and is one of the commonest dermatological conditions in the world. It affects more than 130 million people worldwide at any one time, with the highest rates occurring in countries with hot, tropical climates, where infestation is endemic.

Scabies disproportionately affects people with low incomes and those who are politically marginalised, whether they live in urban areas, such as in the favelas of Brazil, or in rural areas, such as in many remote islands in the Pacific. Unlike many other NTDs, scabies can also occur in temperate regions where it similarly has a predilection for vulnerable communities in which overcrowding and poverty coexist.

People with scabies infestation are easily recognised, particularly since infestation often occurs on exposed areas of the body, especially the hands. Scabies is therefore highly stigmatising. In resource-poor tropical settings, the sheer burden of scabies infestation, as well as its complications, imposes a major cost on health-care systems. In 2010, it was estimated that the direct effects of scabies infestation on the skin alone led to more than 1.5 million years lived with disability; the indirect effects of complications on renal and cardiovascular function are far greater.

**Scabies has an important and under-recognised impact on morbidity and mortality**

Widely believed to be just a “nuisance” disease that causes a “bit of itch and scratch”, the reality is that scabies causes considerable levels of disability and death, mostly via secondary bacterial infection. By itself, scabies infestation causes intense and severe itching that leads to often under-appreciated interruption to activities of daily living and disordered sleep. The size of the problem of the “downstream” complications mediated by infection with the bacteria Streptococcus pyogenes and Staphylococcus aureus is only beginning to be understood. Infection by these bacteria can lead to very extensive skin infection (photo), further complicated by abscess formation and sometimes very extensive skin and soft tissue infection. These bacteria

Scabies has been added to WHO’s list of neglected tropical diseases (NTDs), in recognition of the very large burden of disease caused by the mite Sarcoptes scabiei. Listing of scabies as a WHO NTD shines a much needed light on this disease of the poor, making the problem more visible to the international public health community and providing a potential pathway for integration of control of the disease into established NTD control programmes.

Members of the International Alliance for the Control of Scabies

Andrew Steer is a principal research fellow at the Centre for International Child Health at the University of Melbourne, Australia; group leader of the Group A Streptococcal Research Group at the Murdoch Children’s Research Institute, Melbourne; and consultant paediatrician/infectious diseases physician in the Department of General Medicine at the Royal Children’s Hospital Melbourne.
can move into the bloodstream, causing severe sepsis which frequently causes death. In addition, skin infection caused by Streptococcus pyogenes can develop into serious autoimmune conditions including kidney disease (post-streptococcal glomerulonephritis) and possibly rheumatic heart disease. Rheumatic heart disease causes more than 300,000 deaths in the world per year.

Scabies has been relatively neglected by research
In comparison to many other tropical infections, and even most other NTDs, relatively little research has been undertaken into many aspects of scabies infestation. Although significant steps in our understanding have been made over the past decade, partly facilitated by an increasing amount of genomic data for Sarcoptes scabiei, better evidence for diagnosis, treatment, and public health control is needed, as well as strengthening of the epidemiological links with cardiac and renal disease.

Scabies can be controlled and prevented using effective and feasible solutions
Treatment of scabies is not straightforward. The treatments most available in resource-poor settings (when they are available) are messy creams that are often irritating to the skin. Application of these creams is required over the whole body on two separate occasions separated by at least 7 days. In addition, family members must also be treated. Adherence to these creams and uptake of treatment by family members is poor, leading to frequent reinfection and chronic disease.

Population control of scabies and its complications has been identified by some countries as a public health priority and an International Alliance for the Control of Scabies (IACS) is now working as a global network committed to this goal. Because of the significant issue of reinfection outlined above, there is increasing interest in evaluating the role of mass drug administration (MDA) strategies for population-based control of scabies. This is a key area where it is hoped that listing of scabies as a WHO NTD will lead to synergies with the broader NTD community because agents such as ivermectin, used in large NTD control programmes for lymphatic filariasis and onchocerciasis, are also effective against the scabies mite. Large studies of MDA using oral ivermectin are underway in Australia and the Pacific. If these studies provide encouraging data to move forward with implementation on a larger scale, and integration into existing clinical and public health NTD programmes and systems will be crucial to success.

Scabies has been a truly neglected NTD. However, the addition of scabies to the WHO NTD list is an important early step towards greater recognition of this pathogen as a cause of considerable global morbidity and mortality. This recognition, and alignment of public health efforts with existing NTD programmes, will hasten the aspirations of achieving public health control in countries where the disease is endemic. Listing of scabies as a WHO NTD could not have happened without the continued advocacy of members of IACS and the encouragement of the WHO NTD department.
Success factors for women’s and children’s health: poverty does not always block health-care progress

Carole Presern

Social and economic development is a mysterious business. In some low- and middle-income countries, economic growth brings very little change to the lives of women and children, especially those in the poorest communities, while other countries achieve near-miracles on very little. What makes the difference?

Since 2011, the Partnership for Maternal, Newborn & Child Health (PMNCH), WHO, the World Bank, and the Alliance for Health Policy and Systems Research have been trying to figure this out, working closely with ministries of health, academic institutions, and other partners.

A series of multicountry, multidisciplinary studies explored the reasons why some countries have made fast progress to reduce maternal and child deaths. The survey was part of a global stocktaking in the run-up to 2015, the deadline governments set in 2000 for achieving eight Millennium Development Goals (MDGs). Some low- and middle-income countries are on track to get there; others with comparable income aren’t and challenges remain. Why?

We focused on MDGs 4 and 5, reducing child mortality and improving maternal health, which many studies have called key to achieving all the other goals. We looked at more than 250 health and development indicators for 144 low- and middle-income countries. We examined data and research literature, field reports, government policies, non-governmental involvement, and other factors such as governance and leadership.

In 2012, we had found ten countries punching well above their spending weight in this area: Bangladesh, Cambodia, China, Egypt, Ethiopia, Laos, Nepal, Peru, Rwanda, and Vietnam. In our report, Success Factors for Women’s and Children’s Health, we call them “fast-track countries” because they are reducing maternal and child mortality at rates that will achieve the two MDGs ahead of comparable countries. What can be learnt from these countries? What strategies have they used to make these improvements? What are these countries doing that others aren’t?

First, there is no standard formula for success. Each fast-track country has developed strategies suitable for its unique context, challenges, and strengths. However, fast-track countries have acted in three main areas to reduce maternal and child mortality.

The first area is investment across various sectors. Fast-track countries’ investments tackle a range of problems, not just health. Targeted investments create synergies that have improved gender equality, education, nutrition, energy and pollution management, and general economic growth. Vietnam, for example, achieved universal primary school enrolment in 2000 for both girls and boys. In
Rwanda, 64% of parliamentarians are now women, in part from new quota and ballot requirements.

The second common area involves strategies to make the best use of available resources. One strategy is to spread the issue around, with actors across society playing leadership roles and working in partnership. Fast-track countries break down the “silos” that often keep educators, health-care providers, funders, business owners, sanitation experts, religious authorities, and so on from talking to each other. Women’s and children’s health involves all those areas and more, it turns out. In Egypt, for example, a group of university professors formed a “happy family society” back in 1937 and worked with religious leaders to obtain a fatwa, or declaration of doctrine, that Islam did not oppose family planning. Demand for contraception rose.

Another strategy uniting fast-track countries is use of up-to-date evidence to support decision-making and accountability for results. In Ethiopia, scorecards are used at all levels of the health system—community, regional, and national—to monitor progress on women’s and children’s health. Fast-track countries also use a “triple planning” approach, focusing on both quick wins and longer-term gains and adapting fast to sustain progress.

For example, after the genocide in 1994, Rwanda deployed community health workers and volunteers to meet urgent health needs, but also invested in long-term efforts to build its professional health workforce with medical colleges and international collaborations. To sustain its progress, Peru made a concerted effort to address the unequal access of the rural poor and the urban wealthy to quality obstetric care.

Most of the fast-track countries used principles of human rights and development effectiveness to guide action. New laws and policies addressed gender and economic inequality by guaranteeing rights for all to quality health care and legal standing. Nepal’s interim constitution explicitly names health care as a human right, and Supreme Court rulings based on that right have expanded service delivery and community involvement. Laos set up policies and programmes to improve women’s rights and participation at all levels of society.

In many fast-track countries, government interacts with health and development partners to align their work with country priorities. For example, Rwanda holds a monthly Joint Action Development Forum in every district, where all partners review data on their progress, coordinate, and plan next steps. Each district has an annual performance contract with the president’s office.

None of these countries made constant progress. Most still lag in one area or another. But together they demonstrate that improved health outcomes can be achieved with relatively few resources if investments are used strategically. While further collaboration across interest areas is needed in all countries, our studies confirm that if the political and social will to take action is present, poverty alone cannot stop progress on women’s and children’s health.

This blog is part of a series linked to the Success Factors for Women’s and Children’s Health studies presented at this year’s Partners’ Forum. PMNCH, WHO, World Bank, and the Alliance for Health Policy and Systems Research, worked closely with Ministries of Health, academic institutions, and other partners on a three-year multidisciplinary, multicountry initiative that aimed to understand what factors enabled some low- and middle-income countries to achieve rapid reductions in maternal and child mortality.
Cultural, social, and medical equity could provide lasting solutions to Sri Lanka’s suicide epidemic

Tom Widger

After a decade of decline, Sri Lanka’s suicide rate—once among the highest in the world—is reported to be on the rise once again. It’s too early to tell whether this is a temporary blip or the beginnings of something more serious. But what is known is that the fall in the suicide rate was the result of “means restriction”—chiefly banning the most toxic pesticides—not falling levels of suicide attempts overall. Although Sri Lanka has gained a reputation for progressive agrochemical regulation as a result, the evidence suggests that the number of suicide attempts has actually increased, with suicidal behaviour remaining a leading cause of serious injury and death in the country.

The relation between suicide and culture is one that suicidologists are finally starting to take seriously. As suicide rates rise across Asia (a region already reporting more than 60% of the world’s suicides), many experts are questioning the validity of prevention programmes developed in and for Euro-American contexts. Although the methods by which people harm themselves or commit suicide might be universal, how, why, and with what consequences suicidal behaviours are performed are always culturally specific. If the very practice of suicide is culturally variant, intervention strategies should be too.

In the Euro-American context, many people understand suicide to be the result of deep-seated psychological illnesses like depression—up to 90% of cases by most estimates. Suicidal ideas and plans often develop over a period of days, weeks, or even months, meaning that family and friends have opportunities to spot danger signs and intervene. People contemplating suicide might start hoarding medicines or talking about life after they’re gone; they might complain about being “trapped” by circumstances beyond their control and of not knowing how to escape. Thoughts like these can be enough to encourage suicidal people to seek professional help or for others to encourage them to do so.

But in Sri Lanka, suicidal behaviours more often seem to arise impulsively, with little or no warning. Researchers working on suicide in the country, including psychiatrists, psychologists, sociologists, and anthropologists, agree that only a minority of suicide cases are linked with depression—somewhere between 10% and 40%, depending on whom you ask (and many wouldn’t accept the application of a western diagnostic category at all). Instead, a family quarrel or sudden disappointment might cause feelings of overwhelming suffering, frustration, and anger, leading to the
swallowing of poison as a public statement. Suicidal ideas and plans more often develop in a matter of hours or even minutes—leaving very little time for family or friends to see the danger signs and intervene.

This difference poses real challenges for suicide prevention in Sri Lanka. It’s not clear at which point, between the precipitating event and resulting act of self-harm, interventions can be made. It’s also not clear what, beyond means restriction, might even be appropriate. Frontline mental health providers increasingly favour the prescription of antidepressants, even though the majority of those who self-harm are demonstrably not depressed. Beyond this, there are currently several prevention programmes active in Sri Lanka, some run by government agencies and others by local and international non-governmental organisations. Many share the view that suicide is ultimately a mental health problem that can be tackled through counselling, or that resilience to suicidal ideas can be imparted through life-skills training. Although these programmes are designed and run by excellent and committed professionals, the jury’s still out as to whether they can bring about lasting change.

A crucial problem is cost. Given the sheer size of the suicide and self-harm epidemics, the government would struggle to provide services at the scale and depth required. Local suicide prevention and mental health charities fail to attract funds from within Sri Lanka, and now the country has obtained middle-income status, international donors are looking to put their money elsewhere. In the competition for resources, suicide—a difficult problem even in better circumstances—loses out to more treatable (and politically relevant) health problems like cancer or diabetes.

But sustainability might be achieved if interventions are designed so they are culturally, socially, and medically equitable.

First, prevention programmes need to be designed with local meanings of suicide in mind—they need to be culturally equitable. Simply applying global solutions to a local practice isn’t limited to Sri Lanka, but represents a common misunderstanding that non-fatal acts of self-harm are just cries for help by attention seekers. But if instead recognised for what they are—as culturally meaningful practices transforming social relations between oneself and others—health and social service professionals will be better placed to respond with empathy and ultimately help suicidal individuals to a place where such drastic measures needn’t be taken.

Sri Lanka’s continuing self-harm epidemic represents a major challenge. After more than five decades of world-high suicide and self-harm rates, the time has come for a significant rethink in how we understand the problem. If Sri Lanka rises to meet the challenge in the same way it met the earlier challenge of pesticide regulation, an equitable solution to this protracted epidemic might be found.
Different roads to ‘universal health’ in Latin America

Luis Ortiz Hernández

Civil society groups at the World Health Assembly last month criticised the emphasis on insurance schemes that blindly promote private sector participation in the push for so-called universal health coverage (UHC). Evidence to support the claim for such public-private partnerships remains extremely thin and recent research shows it could jeopardise public health in the South.

A new study by the Municipal Services Project compares health outcomes in Chile and Costa Rica, countries which have come to epitomise opposite approaches to ‘universal health’ in Latin America. Chile’s focus has been on insurance-based UHC while Costa Rica has built a single public health system. The research demonstrates widespread and consistent advantages for promoting universal health through a strong public system that funds and provides all medical and preventive services to citizens rather than through a fragmented public-private mix.

It is important to note that both countries have achieved the lowest infant mortality rates and the highest life expectancies in the region thanks to major advances in primary care. But Chile’s health ‘market’ has led to inefficient use of resources, with higher administrative costs and more irrational medical procedures (eg, caesareans) resulting from oligopolies and collusion among private providers.

One of the major goals of UHC is economic protection for poor households when they face illness. Yet Chileans systematically need to make higher out-of-pocket payments to get medical care in comparison with Costa Ricans. This situation is produced in part by the fact that Chileans pay for health conditions, services, or products that are not covered by their insurance (eg, prescription drugs).

In contrast, Costa Rica’s public health care system remains relatively affordable and more efficient, with total per capita health expenditure standing at US$811 compared to $947 in Chile. Importantly, Costa Rica has also emphasised preventive health activities. Expenditure on prevention and public health services from 2002 to 2006 in Costa Rica is more than double that of Chile (6-7% vs 2-3%). This focus on prevention is more cost-effective and can yield greater public health effects in the long term.

Using comparable data (Latinobarómetro), the study shows that twice as many people reported facing access barriers to health care in Chile than in Costa Rica, citing distance to hospital, time to obtain an appointment, and cost of seeing a doctor as the major reasons. In addition, lack of access to health services for economic reasons in Chile still stands at 4.2% compared to 0.8% in Costa Rica.

Finally, Costa Ricans continue to be largely satisfied with the quality of their health-care services, more so than...
Chileans. Interestingly, LAPOP 2012 results show that most people in both countries think that government, rather than the private sector, should be responsible for health care (71.1% in Chile and 67.5% in Costa Rica).

According to the notions of "active purchasing" and "management competition"—frequently used to promote insurance schemes—the existence of different providers competing for resources should have produced higher levels of quality at lower costs in Chile. The evidence presented here shows that such assumptions are not always true.

The Chilean health system is an example of how segmentation produced by the coexistence of private and public insurances is detrimental to efficiency and equity. Collusion among private providers and oligopolies are realities that are ignored in the competition argument.

Debates over the best institutional arrangements to organise universal health care are far from over, but this case study demonstrates that insurance schemes as promoted by the UHC agenda are neither the only nor the best option.
The need for evidence-based practice in African blood transfusion services

Imelda Bates

June 14, 2014, is the 10th anniversary of the first World Blood Donor Day. This year’s campaign, “Safe blood for saving mothers”, will raise awareness about the importance of timely access to safe blood transfusions to prevent maternal deaths. Half of the world’s maternal deaths from severe bleeding occur in Africa. Catastrophic bleeding around the time of delivery is the most common cause of maternal death in Africa, accounting for 34% of these deaths. Once bleeding starts, death can occur within 2 hours. This is why providing immediate access to blood transfusions is absolutely critical for reducing maternal mortality rates.

‘Uganda grapples with critical blood shortages’, ‘Blood shortages at hospitals and health centres in western Cote d’Ivoire’, and ‘South Africa faces blood shortages’ are typical headlines from news media across the African continent. It is difficult to assess the true impact of these blood shortages on maternal deaths, but our review of the literature suggests that around 26% of haemorrhaging mothers in Africa who manage to reach a hospital die because no blood is available.

Developed countries, with their well-structured and effective health systems, are generally able to meet all their demand for blood, but in poorer countries, and particularly in rural areas, blood transfusions may not be available at all. Lack of blood donations are a major factor, but poor access to health facilities, ineffective procurement and supply chains, inadequate transport networks, and poor communications also contribute to blood shortages.

Over the past few years there have been significant efforts to improve the number of blood donations in Africa. Regional data show that overall donation rates in several countries have increased, although most are still not able to meet WHO targets for donations. WHO estimates that national blood donation rates should be 10 per 1000 population, but the evidence to support this figure is scanty and whether it is valid in the African context is not known. Using this figure, WHO estimates that less than half of blood requirements are met in the African region, but until the true extent of the need for blood is known, it will be difficult for African nations, or the region as a whole, to set any meaningful targets for blood donations.

Faced with a lack of national and regional data to guide blood supply planning, African transfusion services have tended to adopt wealthy country models to address shortfalls in blood supply. These include centralising donor recruitment and blood screening, and establishing transport networks for blood distribution. However, patterns of blood transfusion use are very different in wealthy and poor countries so these models may not be transferable. In
wealthy countries, most blood transfusions can be antici-
pated and planned. They are used predominantly for
patients undergoing complicated surgical procedures, or
for people with chronic medical conditions or receiving
cancer treatment. In Africa the majority of transfusions are
given as an acute emergency and pregnant women and
children are the biggest users. This is because these groups
have very high rates of anaemia which is then compounded
by haemorrhage in pregnant women and infections, espe-
cially malaria, in children. The extremely acute nature of
transfusions, the seasonal variation in demand reflecting
malaria transmission, and the lack of sophisticated blood
tracking systems, mean that it is much more difficult to
predict and manage blood stocks in Africa than in wealthy
countries.

Finding out how much blood is actually needed, and
where and when, is fundamental to planning an effective
national transfusion service, but reliably generating these
data is extremely challenging for resource-strapped African
countries. A commitment of funding and expertise to help
set up basic processes to get this information and to kick-
start a much more evidence-based planning process would
be an excellent way for the international donor commu-
nity to mark World Blood Donor Day and to promote more
effective blood transfusion services in Africa for pregnant
women.
The role of research and innovation for development in LMICs

Osman Sankoh

In April, Nigeria became Africa’s richest country. This happened overnight. The country’s economists realised that for over a decade they had been measuring gross domestic product (GDP) using the wrong yardsticks. When they recalculated the size of the economy and took into account previously unconsidered factors like the burgeoning mobile telecoms and film industries, they found that Nigeria was nearly twice as wealthy as was previously thought, and the country leapfrogged South Africa as the largest economy in Africa. Ghana went through a similar process a couple of years ago, and Kenya’s economy is next in line for a revamp. But it’s not just economic data that are often unreliable in low- and middle-income countries. Health data suffer from similar problems.

For instance, global malaria mortality estimates range from half a million deaths per year to over a million, depending on which international agency you listen to. Births, deaths, and causes of death are not always registered in the poorest countries, and data from health facilities omit those who do not use health centres. Data on other social questions, meanwhile, are often piecemeal and limited to small samples or brief points in time. There are efforts by Demographic and Health Surveys and Multiple Indicator Cluster Surveys but these are not collected all the time.

So there is a huge data gap in the global South, and this lack of reliable data—be it on GDP, population, health, or other social issues—makes it very difficult for policymakers in low- and middle-income countries (LMICs) to meet the real needs of their people. Policymakers who are guided by robust evidence are in a better position to design more effective health and other social programmes, not only saving money but also improving their countries’ prospects of reaching the Millennium Development Goals (MDGs) and whatever quality of life targets replace these goals after 2015.

And just to give you one very small but instructive example of the importance of data to health, a few years ago the government of Kenya decided to withdraw the Haemophilus influenzae type b (Hib) vaccine, which had previously been widely administered to young children to protect them from diseases including meningitis, pneumonia, and sepsis. Researchers at the Kilifi Health and
Demographic Surveillance System in Kenya, a member of the INDEPTH Network, questioned this decision, because their research showed that the vaccine was highly effective in preventing these dangerous diseases in children, and that it was a highly cost effective public health intervention. The researchers showed their data to the Kenyan government, which accepted the new results and reversed its decision to withdraw the vaccine, potentially saving thousands of lives in the process.

And this is one of many examples where robust health data have guided policymakers with huge benefits for society. The INDEPTH Network and other research organisations in the global South address the lack of reliable population-based data on health across many LMICs. We are attempting to break the link between material and data poverty. Epidemiology in many LMICs suffers from a dual lack of reliable population data and human capacity to make use of them. The immediate consequence is that health policy making often lacks its essential evidence base, resulting in a failure to use scarce resources effectively in some of the world’s poorest countries.

And as the world looks beyond 2015, with some of the MDGs realised but others yet to be achieved, reliable population and health data will be essential both for delineating new goals and measuring progress towards them.

The post-2015 goals haven’t yet been decided on, but the UN High-Level Panel has suggested a framework for the goals, and I just want to take two of their proposed goals to show you how important the data generated by INDEPTH member centres and other research centres are to the realisation of global development targets.

The first of the likely goals is to Ensure Healthy Lives. The sub-goals under this heading include ending preventable under-5 mortality, increasing vaccination rates, decreasing maternal mortality, and promoting sexual and reproductive health and rights. INDEPTH member centres and our partners already research all of these areas, assessing the extent of the problems and proposing and testing interventions to tackle them.

But the sub-goals under this heading also include reducing the burden of disease from tuberculosis, malaria, neglected tropical diseases, non-communicable diseases, and HIV/AIDS. We have also published numerous papers about all these disease threats, but I will give a few examples only on HIV/AIDS to demonstrate their value to policy making.

Our research was instrumental in tracking the early spread of HIV/AIDS in LMICs and in identifying who was most at risk and why. We found, for example, that migration routes in Africa were a key conduit for the epidemic. A 2002 survey by the Africa Centre of truck drivers who visited commercial sex workers—who themselves are at high risk because of multiple partnering—found that 37% always stopped for sex, with only 13% reporting using condoms with their wives. Another study found that living near migration routes posed risks even for non-migrants, with people living near main roads having a significantly higher risk of HIV infection than those living in more remote areas.

This increased high-risk behaviour translates into high HIV infection rates among migrants. A study by Agincourt health and demographic surveillance system (HDSS) in South Africa’s Mpumalanga Province found that short-term migrants had a 1.1–1.9 times higher annual risk of death than non-migrants or long-term migrants. These findings convinced policy-makers to focus HIV prevention efforts on migration routes and migrants, an effective way of stemming the spread of the disease.

And the second potential post-2015 goal I’d like to talk about is that of ensuring food security and good nutrition. INDEPTH members, for example, have expanded the global knowledge base on nutrition, producing over 150 published papers in the past decade or so, with some surprising and instructive findings.

We have shown how undernutrition still plagues children and adults of all ages in LMICs, and how malnutrition early in life continues to have effects on physical and mental development throughout the life cycle. The studies have also highlighted the emergence of obesity as a problem in LMICs, showing how while wealth, education, and urbanisation all reduce the risks of undernutrition, they potentially increase the risks of obesity.

And these are great examples of how research centres can assist in reaching global development goals. This kind of robust, evidence-based guidance, as I have said, will be crucial if the goal of ensuring healthy lives is to be met by 2030.

• The post-MDG process should be a new opportunity for global health to really become global; not something done by the North to be transplanted to the South.
• Measurement is a key issue—the UN must step up to meeting its commitment to universal civil registration—but, while it is doing so, INDEPTH and other research centres will make an important contribution to filling the gaps, especially in determining causes of death.
• Universal health coverage can only be achieved and verified if it is backed up by comprehensive health information systems that account for everyone’s birth, lifetime, and death.

So I’d like to conclude by calling for a stronger international commitment to investing in research, development, and innovation in LMICs. This is needed in many areas, but I would argue that it is particularly urgent—and also highly cost-effective—in the field of health. Research into health threats not only saves lives—it also helps governments and donors to save money, firstly by identifying threats early and thereby avoiding the need for costly
clean-up operations once it is too late to prevent the threat from spreading, and secondly by establishing which interventions work and which are cost-effective. Investing in research, in other words, makes investing in health more efficient, and as we look beyond 2015, its value cannot be ignored.

This post is an abbreviated version of a speech delivered at the World Health Assembly, Geneva, Switzerland, on May 22, 2014.
Admirable aims, but let’s deal with the realities of rape in war

John Lotspeich

Collateral damage. Two words that change a woman who has been raped into a statistic. Two words that excuse sexual violence as an unfortunate but inevitable side-effect of war. This week the UK Foreign Secretary, William Hague, and the Special Envoy of the UN High Commissioner for Refugees, Angelina Jolie, will lead a global summit to end sexual violence in conflict. But criminalisation, even prevention of sexual violence in conflict, cannot be the only focus.

Why? Because even as we assemble to take action against it, rape as a weapon of war will continue and those affected need our help. Marie Stopes International works in precarious places all over the world and sees far too many people get away with using rape as a weapon of war.

Selena (not her real name) was raped and came to us for help in Mali. She fled the conflict in the north and survived to tell the tale. But she—like so many others—bears the consequences of being reduced to a statistic. Homeless and ostracised by her community, Selena was left at risk of sexually transmitted infections (STIs) and HIV, and facing the reality that she may be pregnant with her attacker’s child.

This week is a vital step forward, but we have a duty to today’s and tomorrow’s survivors to help them now. For the women caught up in conflict, sexual and reproductive health care is as important as food to eat, a place to sleep, and clean drinking water.

So what does support look like?
When a woman has been raped, she needs immediate protection and treatment. She needs health care to prevent a pregnancy, prevent HIV, and treat STIs. Untreated STIs and HIV can be devastating, and the consequences of a woman resorting to an unsafe abortion are heartbreaking. Safe abortion services must be open to the unlucky women who don’t find help in time.

Providing safe abortion is fraught with controversy. The Geneva Convention allows for women raped in conflict to receive this support, but medical teams are often uncertain when international laws prevail, and even too scared to provide an abortion. Every day, in the countries we work, we see the consequences of unsafe abortion. Whether a doctor will help or not, women will literally risk their lives to end an unwanted pregnancy. Trying to put this into context, one study of refugees in 10 countries found that up to 78% of the maternal deaths were a result of childbirth or unsafe abortion.

So as we take action this week to end the scourge of sexual violence in conflict, we ask too that we prepare for the reality. Women will continue to be raped in war. As a global community, we will continue to offer humanitarian aid. Let us consider then all the ways we can help those caught up in conflict.

Let us be there for them, even after the worst has happened.
Stepping out of the silos: integrating global health into trade negotiations

Kristine Onarheim

Last week, health ministers and diplomats from 194 countries gathered at the World Health Assembly to discuss and shape the future of our global health. In the past few decades, we have seen unprecedented gains in global health; life expectancy has substantially increased, child mortality has more than halved, and global health has gathered increased political attention and funding. However, in order to continue to achieve reductions in mortality and morbidity, we need to proactively address multisectoral determinants of health and embrace the realisation that global health must be a concern for every country in the world.

Research and development challenges in a changing epidemiological and economic era

The world is changing rapidly, and globalisation is making us more interdependent and interconnected in all fields of society. Economic power is shifting with the rise of new emerging economies, while former economic powers, some struggling under austerity policies, are slowly recovering from the recession. All of a sudden, issues like access to affordable medicines, antimicrobial resistance, and sustainable health-care financing are emerging as major challenges in policy making for most countries, and decision makers find themselves facing difficult priority setting dilemmas in health care delivery.

In a scourging letter, some of the world’s leading cancer researchers denounced the immorally high price of a new generation of drugs for acute myeloid leukaemia. The launch of new hepatitis C drugs with up to 90% cure rate could truly transform the public health landscape in some of the hardest affected regions, such as the Middle East and North Africa where an estimated nine million people are infected. However, due to patent protection, these expensive drugs will stretch the financial capacity of all health systems and the drugs will remain unaffordable for most patients.

Within the health sector, people are beginning to question whether we have the best systems to encourage innovation and access to drugs that actually meet patients’ needs. Do we have the right regulatory mechanisms to ensure that health is being protected in the race for profits within trade negotiations, and in the food and beverage industry?

Soft health norms versus trade agreements

Health has traditionally been viewed as soft politics within the multilateral policy space, in particular when considered alongside economic interests and trade. Where WHO most often relies on “soft laws,” the World Trade Organization (WTO) primarily use “hard laws.” In practice, countries are forced to adapt to WTO and other trade treaties, but can essentially choose themselves how they will engage in WHO
recommendations, strategies, and action plans. Thus a trade agreement negotiated in the WTO will be ratified, trumping strategic plans from the WHO. This is particularly concerning when we know that trade agreements can have devastating effects on public health, one of the most famous examples being the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), which prioritises the pharmaceutical industry and, through harmonisation of strict intellectual property regulations, limits the availability of generic medicines. The WHO has openly acknowledged the devastating effects TRIPS has had on public health, yet health actors are still not at the table for current negotiations on the new generation of multilateral trade agreements, exemplified by the Trans Pacific Partnership (TPP) and the Transatlantic Trade and Investments Partnership (TTIP). Based on leaked drafts of TPP texts, these agreements seek to prioritise pharmaceutical industry profits at the expense of patients by further limiting the availability of generic medicines and extending intellectual property protections beyond those currently recognised.

What worries us, as future health professionals and public health advocates, is the parallel discussions around improving access to medicines among WHO member states, while some of the same countries sit around other negotiating tables discussing how to strengthen intellectual property laws, thus undermining WHO’s initiatives. We need to step out of the health silo.

We need health advocates outside WHA: member states and WHO should lead the efforts

The World Health Assembly (WHA) is and always will be a vital arena for current health debates. Health diplomats had many important and detailed agenda points to discuss last week, time is limited, and the different countries have their own agendas. WHO is undoubtedly one of the most important institutions in global health, and important policies are negotiated and implemented, such as the Framework Convention on Tobacco Control and the possible creation of a global research and development observatory. However, the pursuit of better population health is being limited by decisions made everywhere except the halls of WHO. The need for a multisectoral approach in health policy making is being acknowledged at a national level in many countries. At the global level, health concerns are rarely highlighted when decisions are made in non-health arenas, like trade policies. Multisectoral interaction is challenging at the global level and might be limited by the lack of forums for meaningful multisectoral discussions and planning, and limited possibilities for regulatory action.

If we, as the global health community, are not at the negotiating table in the WTO or the next TTIP negotiations, how can we make sure that health is not forgotten? If we’re not taking on the food industry to reduce the use of antibiotics to promote rapid growth, antimicrobial resistance will continue to evolve. If we’re not raising our voice towards the tobacco industry, they will continue to brand tobacco for children and women. Margaret Chan in her WHA opening speech addressed the potential impact of trade on health, “If [trade] agreements open trade yet close access to affordable medicines, is this really progress at all?” As health diplomats now have left the WHA and Palais des Nations, we dare you to step out of your health silo and into the globalised world.

This is a joint post with Anya Gopfer, Johanne Helene Iversen, Elin Hoffmann Dahl, and Elizabeth Wiley, from Universities Allied for Essential Medicines (www.uaem.org) and the International Federation of Medical Students Associations (www.ifmsa.org)
Digital humanitarianism: finally catching up with John Snow

Ivan Gayton

The technology is now available to create freely available maps of most of the world, including low-income countries. This could allow medical humanitarian agencies like Médecins Sans Frontières (MSF) to work more effectively by understanding the locations where diseases strike.

The founding myth of modern public health and epidemiology is based on a map. If one is looking to point to a specific moment when disease mapping began, a good bet is 1854, when John Snow used patient origin geolocations to identify the contaminated Broad Street water pump driving much of the London cholera outbreak. Although a modern analysis suggests that the impact of Snow’s intervention in that particular epidemic, and the significance of his actual map therein, has been exaggerated in some ways, there is a broad consensus that Snow’s work, and the concepts behind the map he made, represented a colossal advance in the practice of public health. Since Snow’s time, it has become widely accepted that mapping of communicable diseases is an indispensable tool for public health, at least in high-income countries.

Epidemic diseases in the rich world are now geolocated as a matter of course, and we know a lot about the way, for example, influenza spreads through a population—a key piece of information in public health management. However, 160 years after Snow’s feat, in many of the low-income countries where MSF works it remains impossible to match patient origins to actual locations.

As in most medical facilities, staff in MSF clinics and hospitals ask where each patient is from, and record the answers to form a ‘line list’. Sadly, we are often doing nothing more than hand-writing phonetically transcribed words, devoid of context, into a column in a registry book. We don’t actually know where a given patient came from, only the name of the place, likely misspelled and impossible to locate on a map. In many cases the ‘patient origin’ column in the register might as well be labelled ‘meaningless syllables’.

In Haiti, after the devastating 2010 earthquake, there was a cholera outbreak of unprecedented scale. In our treatment centres in Port-au-Prince (see map), our registrars diligently recorded the neighbourhood or street name from which every patient had arrived, but we had no way of knowing where these places were. We had no idea if areas with higher patient numbers were near to one another, if they clustered around a river or market, if they tended to be lower in elevation, or if they correlated with other factors such as water delivery or rainfall. If there had been a key source of infection, a local equivalent of John Snow’s Broad Street Pump, we would not have been able to locate it.

A few weeks into the outbreak, the MSF team in Haiti called for help. In a massive effort, online volunteers with OpenStreetMap, Ushahidi, the Google Crisis Response Team, and other initiatives digitally traced aerial photos to produce a database of streets and neighbourhoods (see here for a before-and-after map comparison). Google tech volunteers came to Haiti and, with the help of local MSF staff, identified street and neighbourhood names and
created software that converted our patient line list into map files viewable on a free geo-browser, with red dots sized according to case numbers and a time slider to show fluctuating disease numbers. Almost immediately, a correlation between municipal water outages and spikes in cholera patient numbers showed up in blazing colour and we were able to use this information to provide targeted logistical support to the water utility.

We can only imagine what we could have accomplished if we’d had this data at the beginning of the epidemic. Still, we were lucky in Haiti to obtain geolocations for patient origins weeks into the outbreak. We are usually not so fortunate. At the moment I write these words, I have on my desk line lists of patients from MSF projects in three low-income, unstable countries experiencing disease outbreaks. If we could map these infections, the medical teams would most likely be able to target their interventions more effectively.

Almost every society has some way of describing their location to others, and with modern information technology we should be able to make use of them. As OpenStreetMap has proved, roads and other features visible in aerial imagery can be digitally traced by volunteers, and the traces assigned place names by local people with minimal training and equipment. For example, a system called Field Papers allows local people to take a printout of traced roads, write the names by hand on the paper, and send back a scan or snapshot of the labelled traces.

In the past couple of months in Katanga province, Democratic Republic of Congo, a team of volunteers with the Humanitarian OpenStreetMap Team (HOT), in collaboration with MSF, has created an astoundingly complete map of the city of Lubumbashi that will be invaluable for humanitarian and medical response. The more we work on digital mapping, the more we realise how powerful a tool it is.

The limiting reagent in humanitarian mapping is aerial/satellite imagery, without which tracing and naming are difficult or impossible. If more currently existing satellite imagery could be licensed for use to make maps for humanitarian agencies, we would be able to move faster. Using unmanned aerial vehicles (UAVs aka drones), most famous for military applications but equally applicable to peaceful use (although there are ongoing debates about the perception of their use given their military origin and potential for misuse of map data), citizens and small organisations around the world could be empowered to gather and share their own imagery. UAVs are still complicated and difficult to use, but the technology is rapidly improving. Volunteers are creating open-source software that can manage astonishingly capable aerial photography platforms constructed from inexpensive hardware from the world of radio-controlled model aeroplane hobbyists.

If we could get the mapping done in vulnerable areas before disasters strike, rather than after the fact, disaster response will become more effective. The technology is available to create a free map of the whole world. All that remains is to make the technology more user-friendly, and to coordinate humanitarian and tech communities. Epidemiological surveillance in low-income countries may then finally be able to catch up with John Snow’s achievement of 160 years ago.
Building country capacity for sustainable HIV services: learning from success

Theresa Wolters

To continue to make progress on tackling the AIDS epidemic, we must increasingly support and strengthen national partners’ ability to own, manage, sustain, and ultimately fund HIV services. Country ownership isn’t unique to HIV programmes, but getting the transition right is critical to providing more patients with care and treatment. Today marks the 3-year anniversary of three independent, national organisations in Cote d’Ivoire, Mozambique, and Tanzania, that have successfully transitioned select HIV programmes to national ownership. The affiliates provide evidence, and indeed a model, for how well planned transitions to national ownership can work.

The Ariel Glaser Pediatric AIDS Healthcare Initiative (AGPAHI) in Tanzania, Fundação Ariel Contra o SIDA Pediátrico (Fundação Ariel) in Mozambique, and Fondation Ariel Glaser Pour la Lutte contre le SIDA Pédiatrique (Fondation Ariel) are autonomous organisations, owned and operated by highly capable national boards, leadership, and staff. Their establishment was assisted by the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF), with support from the US Centers for Disease Control and Prevention. Through its continued affiliation with the organisations, EGPAF provides capacity building, institutional systems and policies, and linkages to the global arena. Affiliates are periodically evaluated against clear metrics through both a self-assessment and EGPAF-facilitated accreditation review.

As an integral part of the national HIV response, the affiliates collectively support more than 650 public and private health facilities, have tested more than 895,000 pregnant women for HIV, and have started more than 180,000 patients on HIV treatment. The annual budgets, obtained from a range of donors and verified through financial audits from independent accounting firms, now total nearly US$30 million.

The affiliates also provide technical assistance to their countries’ governments at the national, regional, and local levels; advocate for patient-centred policies; and develop innovative solutions to address gaps in HIV services. Each affiliate is an important and respected implementing partner, with a significant and long-term role in their countries. After 3 years of collaboration, we are taking stock of what worked, why it worked, and how our experience can further contribute to advancing country ownership in health and other development sectors. Here’s just a little of what we’ve learned:

- Efforts to build national capacity and ownership must be driven by prioritising sustainability. We transitioned some EGPAF-supported regions, and thereby human and financial resources, to the affiliates, which, at times, made for tough decisions at EGPAF. These tough decisions were made easier knowing that, in the long term, building capable national organisations is the right path toward an AIDS-free generation.
- Capacity building for national organisations needs to be comprehensive, focusing on more than just programmatic capacity. It must focus on developing well rounded, transparent, and sustainable organisations. Therefore, EGPAF’s capacity-building efforts focus on governance, financial management, compliance, human resources, advocacy, marketing, and resource mobilisation, in addition to programmatic areas.
- Leadership and staff must be supported and led by an engaged, national board of directors. AGPAHI, Fundação Ariel, and Fondation Ariel are governed by highly qualified and committed groups of national leaders from diverse professional backgrounds. They hold the organisation, and themselves, accountable for programmatic excellence, sound financial management, and transparent operations.
- Close collaboration with global organisations is a way to facilitate linkages for national organisations to join the global dialogue. National organisations may struggle to be connected to advances in the field and engage at a high level with donors, UN agencies, and researchers. Regular updates and participation of affiliates in EGPAF’s internal working groups and conferences ensures that the affiliates are equipped to provide technical assistance to regions, districts, and sites in their countries.

As AGPAHI, Fundação Ariel, and Fondation Ariel continue to grow and change, so too must EGPAF’s affiliation model...
and institutional relationships. As the affiliates have rapidly increased capacity during the past 3 years, EGPAF’s own capacity-building support is also evolving away from day-to-day operational and programmatic support to greater strategic and collaborative engagement in advocacy, communications, and programme innovations.

AGPAHI, Fundação Ariel, and Fondation Ariel demonstrate how capable, national organisations can shape the HIV response. Through these organisations, Cote d’Ivoire, Mozambique, and Tanzania have a new cadre of national leaders, working toward an AIDS-free generation in locally-relevant, innovative, and lasting ways.
Exporting education: applying global health standards to educational partnerships

Julie Johnstone

Capacity building through education can be an immensely powerful tool to build on existing infrastructure, develop local expertise and, consequently, improve health. Using a native educational structure, medical experts can effectively export education to almost any geography in the world. Accordingly, there is an emerging practice of global health medical education (GHMEd), where instructors from relatively resource-rich areas teach clinicians in resource-limited areas as part of a global health strategy to build knowledge. This knowledge is assumed to translate into improved health outcomes. There remain questions, however, as to how educators should approach teaching in a different medico-cultural contexts to ensure they are effective and do not cause harm.

The interest from medical institutions from the global north in working with resource-limited areas has dramatically increased over the last few decades. This is demonstrated partially by the upsurge in global health faculty and curricula in academic institutions and affiliate organisations such as the Consortium of Universities for Global Health, which held its fifth annual conference just last weekend. International placement programmes are documented for physicians, nurses, occupational therapists, physiotherapists, and speech language therapists. Increasingly, partnerships between institutions from the global North and South involve not only clinical work but also a significant teaching and/or mentorship component.

Despite this growing phenomenon of educational partnerships, little scholarship has been done on how teaching principles that are widespread in resource-rich areas should be applied in resource-limited areas. A look at education literature in global health brings up numerous articles examining the pros and cons of medical personnel travelling to engage in clinical care. Garnering evidence of impact for these experiences, beyond case studies and anecdotes, is challenging so the literature focuses instead on best practice in guaranteeing proper pre-departure training and post-travel debriefing. The emphasis, generally, is on preparing and supporting the traveller rather than on preparing and supporting the host, although ethical considerations have been well outlined by Pinto, among others. The literature does little to discuss how to prepare for educational activities while abroad and lacks a discourse similar to that of clinical work regarding how we should be modifying teaching in a global health context.

Medical education is a complex endeavour. It involves diverse personalities, cultural context, and content woven with ever-changing technology and evidence. Arguably,
nowhere is this truer than within the realm of GHMEd where the complexities of practising medicine in a resource-limited setting challenge teachers further. For example, do instructors teach so-called ‘best-practice’ in an area where infrastructure for this care does not exist or do they teach alternative but practical approaches (in which case, where is the evidence for what they are teaching?) Add to this a dynamic of instructors, with different medical and cultural perspectives as well as a different teaching pedagogy, who are exporting education in a style that may not be appropriate in all geographies.

As discussed in a previous post by Meghan Clark, we cannot assume that the knowledge brought forth by Western evidence is, or should be, placed above local clinical or traditional practice. Similarly, we cannot assume that teaching practices effective in Western institutions will be equally so abroad. An instructor from a resource-rich area may bring the expertise but the local clinician holds the context and reality to which it is applied. Together they shape the end message from any lesson. Exporting learning objects (such as lectures) from one institution to another without thoughtful and informed alterations is unlikely to be effective and poses potential harms.

The risk associated with sending a clinician from a resource-rich area to do clinical work in a resource-limited area is well discussed: their disproportionate use of material resources, the strain on already burdened human resources for hosting and/or supervision, inappropriate management approaches, and lack of sustainability are just a few to mention. The last one is a reason cited for creating educational partnerships. Unfortunately, there is potential harm in exporting education as well, such as: teaching inapplicable clinical approaches, instructing methods that disproportionately use resources, lack of mentoring or follow up, and devaluing the current practice or local traditions. Regrettably, these risks are not a focus in the literature and an unknown proportion (anecdotally quite high) of educational partnerships in GHMEd simply present lessons predeveloped for a resource-rich context in the dissimilar medical context of a resource-limited area. The community in GHMEd must be attentive and grow the scholarly discussion around these issues.

As practices of inter-regional education become more widespread, there is not only a practical but also an ethical impetus to look at how medical education developed in resource-rich areas should be modified for application in resource-poor settings. The same discussions that are ongoing around preparation to work clinically in resource-limited area should be had for those involved in educational partnerships. Educators working in global health need to engage in discussions and scholarship regarding best practices and ensure that this growing phenomenon of global health medical education is appropriately studied.
Reducing neonatal mortality through skilled birth attendance

Mamuda Aminu

Maternal and neonatal survival have been in the headlines again this week as the Institute for Health Metrics and Evaluation and WHO released new figures and Save the Children published its annual State of the World’s Mothers report. May 5 was International Day of the Midwife: what can skilled birth attendance do for maternal and neonatal health and how can it be scaled up?

Recent figures from WHO indicate that the proportion of under-5 deaths that occur in the first month of life increased from 37% in 1990 to 44% in 2012, resulting in 2.9 million neonatal deaths annually. One of the strategies to reduce neonatal mortality is promoting the provision of essential newborn care by skilled birth attendants (SBAs). However, with an estimated 46 million women who are likely to deliver alone or without adequate care, one wonders whether promotion of skilled birth attendance is being prioritised enough to bring about the much desired reduction in global neonatal mortality.

In a systematic review estimating the effect of various childbirth care packages on neonatal mortality due to childbirth-related events in term babies, Lee and colleagues reported that skilled birth care could reduce neonatal mortality by 25%. The review also reported the potential in the provision of comprehensive emergency obstetric care and basic emergency obstetric care to reduce these deaths by 85% and 40%, respectively.

In addition, there is evidence of a “skills gap” for many SBAs in countries where most of the neonatal mortality occurs. In a study that mapped out cadres of health-care providers considered to be SBAs in nine sub-Saharan African countries, Adegoke and colleagues found that a total of 21 different cadres of health-care provider were reported to be an SBA. Most of these cadres lacked the skills to provide the signal functions of emergency obstetric care and early newborn care. Utz and colleagues also reported similar findings when they did a similar study in four countries in southeast Asia.

Task shifting is one of the strategies recommended by WHO to improve availability of emergency obstetric care.
and newborn care services. Lower-level and middle-level health-care providers such as community health workers are trained to perform specific tasks that may otherwise be performed by higher-level staff that take longer and cost more to train.

In the continuum of care, because newborn care is closely related to maternal care, training of lower-level health-care providers also provides the additional benefit of addressing challenges related to both demand for and supply of maternal care.

It is on this premise that the Making it Happen programme, which is being delivered by the Centre for Maternal and Newborn Health at the Liverpool School of Tropical Medicine, UK, is helping health-care providers in developing countries to increase their knowledge and develop skills in the provision of basic and comprehensive emergency obstetric care and early newborn care.

A short competency-based “skills and drills” training package for health-care providers in resource-poor countries was developed in 2006 by the centre in collaboration with the Royal College of Obstetricians and Gynaecologists and the Department of Making Pregnancy Safer at WHO. The package focuses on the signal functions of emergency obstetric care and early newborn care. With the support of UK Department for International Development, the programme has been rolled out in 12 sub-Saharan African and Asian countries.

In a before-and-after study involving 222 health-care providers in Somaliland who were trained in the Making it Happen programme, participants were evaluated on change in knowledge, skills, behaviour, and functionality of their facilities during and immediately after training, and at 3 and 6 months post-training. There was improvement in 50% of knowledge and 100% of skills modules assessed. Availability of signal functions for basic and comprehensive emergency obstetric care in participating facilities improved from 43% and 56%, respectively, to 100%.

For the long-term success of interventions, it is crucial that they follow the guiding principles of the forthcoming WHO Every Newborn Action Plan. In line with these principles, the Making it Happen programme ensures ownership of the intervention by training some of the higher-level health-care providers as trainers so that, with the aid of training equipment that is also supplied to the participating countries, they can continue to build skills within their countries even after the programme. Additionally, the monitoring, evaluation, and feedback mechanisms that have been built within the programme enables the Centre for Maternal and Newborn Health and other stakeholders to continuously refine and innovate for even better delivery and impact.

Finally, with current evidence suggesting that training of health-care providers is effective in increasing availability and quality of maternal and newborn care services, this strategy should be placed higher on the newborn health stakeholders’ list of priorities, and continued improvement of skilled birth attendance in developing countries should be supported.
Malaria remains a critical public health issue in Sudan, exacerbated by economic woes and changes in local climatic conditions, as well as rumours of increasingly pervasive insecticide-resistant strains. However, from an international response perspective, Sudan remains one of the most difficult countries in the world to enter and operate in. Health diplomacy therefore has a central part to play in any related international health partnership, particularly in the context of monitoring and evaluation.

Concurrently, the Global Fund to fight AIDS, Tuberculosis and Malaria and the Ministry of Health have launched an extraordinarily large-scale and comprehensive response to malaria, encompassing the provision of low-cost, easily transportable, and user-friendly diagnostic devices; the provision of a range of free antimalarial drugs, focusing in particular on the provision of artemisinin; and the ongoing expansion of insecticide-treated bednet programmes. Our team was tasked with the review and inspection of these programmes throughout the Gedarif, Khartoum, and White Nile regions.

As I have documented in other politically challenging environments such as Iraq, Afghanistan, and Zimbabwe, access by international health partnerships to “off-limits” areas is in itself a remarkable achievement, which has to be informed by close attention not just to the most cost-effective, but also the most appropriate interventions. The selection of culturally, religiously, politically, and even economically “sensitised” programmes for the treatment and prevention of malaria has made organisations such as the UNDP and the Global Fund welcome in regions that other international public (or indeed private) initiatives would struggle ever to reach. Beyond the clear and immediate health gains, therefore, the contributions of, and reliance on, such efforts to the nascent theory and practice of global health diplomacy were, though largely unquantifiable and part of no explicit Global Fund or UNDP mandate, difficult to ignore.

Critically, such effects can be assigned to the development of an international presence, through the highly compelling and benign medium of malaria treatment combined with provision to some of the country’s poorest populations. More broadly, health diplomacy outputs in this context include the building of international communications via personal and professional relationships with local personnel; professional integration; adaptable malaria programmes that respond to local needs; low-cost (and low-infrastructure) programmes that can be run and maintained by local communities; and mutual exposure to international professional practices in the global health context. Only by bearing these broader, non-health effects in mind can one rationalise and understand that warm handshakes and exchanges of courtesies are every bit as much of the modern global health professional’s duties as service assessment and delivery.

On that note, monitoring and evaluation of global health programmes presents its own challenges from the diplomatic perspective. Organisations, countries, communities,
and individuals who may already feel under malign international scrutiny have reason to be defensive when it comes to external, anti-corruption performance audits, which need to be appropriately moderated and tempered by shows of trust, feedback, and support, rather than by constructive critiquing alone.

Without attention to the principles of diplomacy by both recipients and donor organisations, situations such as the recent expulsion of the International Committee of the Red Cross from Sudan are likely to recur. However, efforts to recognise the value and importance of the role of global health programmes in the diplomatic, and even the foreign policy, realms have, to date, met with little reward. Nonetheless, when one observes at first hand the outcomes of global health efforts in this regard, the case for sustained, and even increased, global health funding on this basis becomes clear. In the case of Sudan, the openness, co-operation, and acceptance of the individuals and communities that we worked with once again showed the disconnect between international image and those hard-working, dedicated, and fundamentally tolerant individuals who make up the country itself.
1 year in, polio’s Strategic Plan on track to succeed by 2018
Zulfiqar A Bhutta and Walter Orenstein

Last April, the world united at the Global Vaccine Summit in Abu Dhabi to launch the Global Polio Eradication Initiative’s (GPEI) 6-year Strategic Plan to end polio by 2018. We believed in that plan and joined 450 fellow scientists and polio experts in endorsing it through the Scientific Declaration on Polio Eradication. A year later, the global programme faces new and stubborn challenges. But with the programme using innovative approaches and gaining the help of new partners, we remain convinced that we can end polio by 2018 and realise the broader benefits that eradication will bring.

The programme’s track record is encouraging. Since its inception, the GPEI has brought the number of annual polio cases down from 350,000 to less than 500 in the past 2 years. The number of countries infected with wild poliovirus (WPV) has dropped from 23 in 2009 to only eight in 2013, and only three of these—Afghanistan, Pakistan, and Nigeria—have never stopped transmission. India, once considered the hardest place on the planet to eradicate polio, was just certified polio-free, proof that eradication is possible in the most challenging contexts.

Where we are reaching children with the polio vaccine, improvements in campaign quality are making an enormous difference. Nigeria has experienced just a single case of WPV this year, compared to 14 at this point last year. WPV type 2 has not been detected since 1999, proof of principle that eradication is feasible—and we are encouraged that WPV type 3 has not been seen since November 2012.

Yet not every parent has access to the vaccine, and outbreaks in northwest Pakistan, the Middle East, west Africa, and the Horn of Africa have led to an increase in worldwide cases for the first time in years. And WPV type 1 has now circulated for more than 1 year in Israel, although that circulation appears to be decreasing.

The root of these struggles is in the world’s remaining polio reservoirs where violence and insecurity limit parents’ access to vaccines. These hotspots, most notably northern Nigeria and along the Afghanistan-Pakistan border, are also fuelling outbreaks thousands of miles away. For the past 16 months, nearly all WPV cases in outbreak countries can be traced genetically to viruses circulating in Pakistan or Nigeria. As long as WPV transmission and circulation persist in the reservoir countries, we can expect polio to come back in polio-free countries.

Just this week, WHO convened an International Health Regulations emergency committee to consider additional measures, which could include travel recommendations, to reduce polio spread in this final push against the virus. But to truly safeguard hard-earned progress, we must focus on breaking the chains of transmission in the reservoirs.
In the past year, we have seen the Strategic Plan in action in the most challenging areas, and we know what works. First, we must apply proven tactics to reach communities where insecurity and violence stand in the way of vaccination. Pakistan, for example, places mobile checkpoints at heavy transit points near areas of insecurity to help ensure parents can vaccinate their children. Innovative projects to integrate maternal and child health interventions with routine immunisations and polio campaigns are underway in such insecure areas and could point a way forward.

Second, community support can be enhanced when polio vaccinations go hand-in-hand with other health services desired by the public. In the Nigerian province of Kano, 1700 health camps provide primary care alongside vaccination. In Khyber Pakhtunkhwa in Pakistan, new Sehat Ka Insaf (Justice for Health) campaigns deliver nine child health interventions, including polio vaccination.

Third, we must support local leaders and champions, and countries must fully buy into eradication. India’s accomplishment was enabled by the total commitment of Indian leaders, from top to bottom, who made resources available to stop the disease. Political will and negotiations hold the key to addressing vaccination bans and the persistent climate of terror that is feeding polio in conflict zones. Pakistani politician Imran Khan has personally led vaccination drives into the insecure region of Khyber Pakhtunkhwa, and national Islamic leaders have issued nearly 30 fatwas promoting the importance of polio vaccination. Negotiations are also underway in Pakistan to ensure that warring factions do not hold polio and routine immunisation services hostage to political differences and conflict.

The Strategic Plan contains the keys to bring vaccines to the remaining hotspots. But without action, the plan is just a plan, and to make eradication a reality, global leaders must deliver in several ways.

Governments and other international partners must maintain unwavering political and financial commitment. Endemic countries must follow India’s example, marshaling necessary resources to stop transmission. Above all, policymakers must prioritise eradication and make access to every child non-negotiable. Children in affected regions of Pakistan, Nigeria, and outbreak areas must be immediately vaccinated.

Failure to stop polio in these areas will be disastrous, and risks a fresh set of outbreaks across the globe that could unravel the progress already achieved.

Last year, we signed the Scientific Declaration because we believed in the global programme. The past year gives us confidence that the Strategic Plan is working. The only outstanding question is whether or not others will stand with us to cross the finish line.
Managing malaria in times of change

Fatoumata Nafo-Traoré

When I was appointed as Executive Director of the Roll Back Malaria (RBM) Partnership in 2012, I came to the job knowing the reality of poverty and the long bumpy road that leads to economic and social development. As a child growing up in Mali and later on as a health professional, I saw daily the ravages of malaria. As a Minister of Health from 2000 to 2002, I worked on addressing the diverse health system challenges of a developing country while tackling malaria on a national scale and finding ways to meet the needs of my people in a complex political and socioeconomic context. I then stepped into a global organisation, WHO, that worked closely with governments of endemic countries, supporting them with guidance to determine better health policies and gently advocating for more money for health and for malaria. Today, I am encouraged to see how far the world has come in reversing this disease of poverty. The progress is unfathomable.

Over the past decade, global malaria control has proven to be one of the best buys in public health. Since 2000, child death rates from malaria have been cut in half and more than 3·3 million lives have been saved. The malaria map is shrinking, with 26 of the remaining 97 endemic countries now working to eliminate the disease altogether.

However, 14 years into the new millennium, the problem of malaria has not faded in global significance. Although preventable and treatable, the disease remains a health risk for more than half the world’s population, especially young children and women, while thwarting economic and social progress across the global South.

Today the malaria community is making progress against the backdrop of considerable landscape changes.

The economic climate has changed. Endemic countries can no longer rely mainly on international funding to maintain progress in malaria control. Low-gear global economic growth and large national deficits have affected international aid budgets. Donor funding hovered around the US$2 billion mark last year, while government spending was estimated at half a billion. About twice as much ($5 billion) is needed annually to tackle malaria worldwide.

The Global Fund, malaria’s main financier, was thankfully generously replenished at the end of 2013, as international donors reaffirmed their commitment to fighting the three major infectious diseases of our time—HIV/AIDS, tuberculosis, and malaria. However, continuous technical support from partners will be needed in countries to ensure that the Fund’s new funding model functions well for malaria control.

Going forward, the malaria fight will need a new focus: strengthening country ownership, empowering communities, strengthening data quality for decision making, engaging multiple sectors outside health in the malaria fight, and exploring ways to do things better at all levels, with maximum value for money.

The disease has changed. Emerging parasite resistance to the world’s most powerful antimalarial drug is a major
threat to progress. In the four southeast Asian countries where it has been detected, efforts to contain its spread have intensified. WHO and RBM partners have deployed an emergency plan to fight resistance and secure the efficacy of the world’s best cure for life-threatening malaria. This work must continue in the years to come. Investing in innovation and research to develop the next-generation drugs, diagnostics, and vaccines is also critical.

The global political framework is changing. As the Millennium Development Goal (MDG) deadline approaches, a new set of international goals is being discussed and developed. The RBM Partnership needs to reinvent itself, perfecting new ways of doing business to continue to deliver similarly strong results in a different context. In the midst of all change, however, one certainty remains. Humanity’s quest for a sustainable, more equitable, and healthier global society cannot succeed without systematic, effective, long-term malaria control measures in endemic countries.

We have come a long way since malaria was first placed on the global agenda, but the job is far from finished. The push to roll back malaria must continue, so that a maximum number of malaria-endemic countries reach the MDGs. Beyond 2015, it needs to stay on the bold path, charted in the Global Malaria Action Plan, to near zero global malaria deaths and disease elimination. As this vision turns into reality, millions among the world’s poor will get a better chance to not only survive but also thrive.
Medical students call for a healthy future

Josko Mise

The Millennium Development Goals (MDGs) have been critical in shaping global health and development priorities. With less than 700 days until the eight MDGs expire, world leaders are getting together to form the next development framework through a major intergovernmental policy process that has so far involved millions of people worldwide—experts, academics, policy makers, entrepreneurs, and youth. Driven by the strong desire to affect the ongoing discussions and have our voices heard, the International Federation of Medical Students’ Associations (IFMSA) chose post-2015 as the theme of its 63rd General Assembly last month.

In 2010 there were 1.2 billion young people (between 15 and 24 years of age) in the world, amounting to 18% of the world’s population, and making up the largest youth generation in history. The International Federation of Medical Students’ Associations (IFMSA) is one of the largest international student and youth organisations in the world, with members in 110 countries. For more than 60 years, IFMSA has existed to bring together the global medical student community at the local, national, and international level on social and health issues. Believing that young people are responsible for turning the prediction that the best days for health care are ahead of us into reality; recognising that young people will be the ones experiencing the successes and/or shortcomings of the future post-2015 framework throughout our careers and lives; and understanding that we will be the ones responsible for carrying out the goals and reaching the targets agreed, IFMSA has put the post-2015 development agenda at the centre of its advocacy, with the goal of ensuring that young people and health issues remain strongly and meaningfully represented in the next development agenda.

The theme of the General Assembly, Health Beyond 2015—Get Involved!, sent out a powerful message to the health-care student community that we need to be part of shaping our future and that now is the time to get involved. After a week of fruitful discussions and interesting dialogues between medical students and invited guests from academia, UN agencies, non-governmental organisations, and youth organisations, the outcomes were consolidated into the Hammamet Declaration on Health Post-2015, which was adopted by the IFMSA General Assembly as an official position of medical students from 110 countries worldwide.

1.3 million medical students agreed to:

• Advocate for working towards universal health coverage as the specific health goal within the development agenda as it addresses the need to have health as a right for all;
• Promote human rights and address the needs of vulnerable and marginalised populations as a central theme across all development goals proposed;
• Stand as a youth organisation in both a national and international capacity to address sexual and reproductive health and rights;
• Call on governments to commit to finish the unfinished Millennium Development Goals, including setting new ambitious targets to get to the end of the AIDS epidemic;
• Advocate to improve gender equality worldwide as a crucial component of improving global health as a whole;
• Engage with our governments and alongside partner youth organisations to ensure that young people and youth organisations play an important part in the policy-making process in the new development framework to promote youth advocacy and inclusive health policy;
• Call on policy makers to adapt to the changing burden of disease in their strategies, addressing non-communicable diseases and neglected tropical diseases;
• Call on governments to ensure that the medical workforce is trained through transformative health-care education to produce medical leaders to properly address health equity;
• Advocate for health equity with a focus on the social determinants of health to ensure a coordinated approach is taken to improve the lives of populations across the world;
• Explicitly highlight mental health as an important dimension of health and wellbeing;
• Work with all stakeholders to ensure that health systems are equipped to deal with disaster risk management and conflict;
• Encourage policy makers and stakeholders to reduce negative impacts of the environment on health and burden of disease;
• Call on policy makers to work together to have better strategies in dealing with issues regarding intellectual property rights and patents.

By committing to these actions nationally and locally, medical students, through the Hammamet Declaration on Health Post-2015, are calling attention to health as an essential issue for policy makers to address in the new post-2015 development framework. It’s in the hands of international organisations like IFMSA to make sure the voices of young people are heard and continue to play a key role in shaping the healthy future we want.
Myanmar’s moment: reaching millions to improve health

Neeraj Mistry

Myanmar’s democratic transition and peace and reconciliation process offer the country a unique opportunity to define new partnerships, locally and internationally, to establish a robust health system. With many global actors vigorously exploring new or increased aid and private investments in Myanmar, the new potential to create equitable and broad coverage is tremendous. These effective and sustainable advances can only be realised with Myanmar’s government as a central partner, coordinating foreign assistance, strengthening capacity, and co-investing through public health spending. Myanmar is poised to demonstrate new leadership and accountability in the health sector, evident in its effort to protect millions of citizens against neglected tropical diseases (NTDs).

Recent activities have awakened hope for prosperity. In November, Myanmar was named 2014 Chair of the Association of Southeast Asian Nations (ASEAN) and will prioritise civil society engagement and post-2015 development agenda planning in the region. In January, the country held the Second Myanmar Development Cooperation Forum to emphasise enhanced partner coordination.

Also in January, World Bank President Jim Yong Kim announced US$2 billion in funding for energy and health care. In February, United States Agency for International Development (USAID) Administrator Rajiv Shah visited Myanmar to launch a partnership with Procter & Gamble to prevent diarrhoeal-related deaths through safe drinking water and improved hygiene practices. Last month, the UK House of Commons urged the Department for International Development (DFID) to increase its Myanmar aid, emphasising donor cooperation and health system strengthening.

A new report by the Center for Strategic International Studies (CSIS), “Rehabilitating Health in the Myanmar Transition” underscores that “Broad accelerated progress in health—that brings concrete health benefits to people disempowered and marginalized—has the potential to improve equity, raise popular confidence in the transition, and strengthen the security and productivity of families and communities.”

With 26% of the country living below the national poverty line and under the threat of numerous diseases, progress is needed now. Myanmar’s undertaking to control and eliminate NTDs by 2020, which has been captured in a short video, demonstrates what is possible.

In one week last September, Myanmar’s Ministry of Health, with support from the Global Network for Neglected Tropical Diseases and WHO, protected more than 36 million people—about 68% of the population—from lymphatic filariasis and soil-transmitted helminths.
This mass drug administration (MDA), spanning more than 200 townships, was possible thanks to the efforts of more than 4000 local health-care workers and 90 000 volunteers. They received training in hospitals and monasteries on treatment distribution and visited schools and community centres to educate people about treatment safety and the impact of NTDs.

WHO, the Myanmar Maternal and Child Welfare Association, the Women’s Affairs Federation, the Red Cross, and the Fire Brigade also served as drug distributors, and the Japan International Cooperation Agency (JICA) supported printing of drug distribution guidelines and educational materials.

Plans for the 2014 MDA are underway, and lessons learned from the 2013 MDA will be incorporated. Myanmar’s Ministry of Health expects to continue treatment until NTD transmission has stopped in all districts and plans to eliminate lymphatic filariasis by 2020, a global goal set by WHO.

Myanmar’s efforts to control soil-transmitted helminths are also noteworthy because they demonstrate strong partner collaboration and an ability to reach all corners of the country. Deworming of children and pregnant women is integrated in Myanmar’s maternal and child health services and school health programme. Deworming is provided during Myanmar’s annual Nutrition Promotion Month, conducted in partnership with UNICEF, WHO, and the Ministry of Health’s School Health Program and National Nutrition Promotion Project. In 2010, Myanmar achieved more than 90% coverage for at least one round of deworming among children.

Still, scaling up programmes is crucial. In all, 45 out of 65 districts in Myanmar have an NTD burden. About 41 million people—80% of the population—live in districts endemic for lymphatic filariasis, more than 12 million children require deworming to protect against soil-transmitted helminths, and 20 000 people require trachoma treatment.

Though extensive, the remaining challenges are surmountable, with some help. Continuous funding for drug transportation and supervision of that process, enhanced coordination among international, national, and community-level partners, and health personnel training is essential.

Increasing community acceptance, particularly in areas implementing the first round of MDA, can boost success. This process includes increasing understanding of NTD treatments among the general public and educating drug distributors on how to properly administer and discuss treatment.

Nyan Sint, Regional Officer in Myanmar’s Ministry of Health, explains, “If the people think they have no symptoms, they may be reluctant to take drugs. This is why you have to … [do] advocacy or social mobilisation. [It’s] very much needed,” especially through media and community education.

Myanmar’s intensive NTD effort demonstrates that it has promising potential to strengthen and expand health programmes that will protect its citizens and offer them brighter futures.
Unsafe surgery: a question of gender and economics

Sarah Kessler

“So the question,” asked Lesong Conteh, health economist and Lancet Commissioner, “is how do you relate the importance of surgery, how do you get people’s attention?” It’s a question that a lot of great minds are asking these days—and answers can’t come soon enough.

Over 234 million operations take place each year, more than the number of babies born, but less than 5% are in low-resource countries. With surgically treatable conditions overtaking communicable diseases as the world’s top killers, it’s obvious that our bodies are all vulnerable to the same risks—and that it’s only a roll of dice and geography deciding whether or not we survive them. As this crisis of access and safety in surgery worsens, it starts to look like global health is missing a trick.

“Surgery doesn’t have its own Millennium Development Goal [MDG],” explained Conteh, in an interview for the Lifebox Foundation’s Make It Zero campaign. “It’s subsumed in with the other issues. When we say ‘surgery’ it means so many different things to people that it gets diluted and does not have a clear ‘identity’ or ‘brand’ that people can quickly understand.”

The lack of understanding can be measured in lives lost and days diminished by pain and disability. In low-resource countries, millions are denied access to the most essential surgical interventions—obstetrics, trauma, hernia repair. It’s not because we don’t know how to save them, but because the delivery systems for training, support, and equipment simply aren’t in place. And as lack of access to safe surgery becomes compounded by access to desperately unsafe surgery, it’s women around the who bear the brunt.

Up to 80% of emergency operations in low-resource countries are obstetric, as Lifebox Foundation, a global health charity focused on making surgery safer in low-resource countries, highlighted in our campaign for International Women’s Day.

Obstructed labour, haemorrhage, ruptured uterus, fistula—these are the risks of childbirth, and they require surgical intervention. The risk of dying from anaesthesia in low-resource settings can be up to a thousand times higher than in the UK, but a woman in labour has very little choice. Surgery is a life-threatening risk, but no surgery is a death sentence. A caesarean section remains the last-chance equation, saving two lives with one incision.

“You can go in for your operation, you’re incredibly unwell—then you have surgery and within a matter of minutes, hours, days, you can be back to full capacity,” explained Conteh, whose research at Imperial College London focuses on low- and middle-income country (LMIC) health economics and health system research. When it comes to women’s health, surgery “relates to the focused MDG on maternal health and also shapes the broader MDG that promotes gender equality and empowerment of women.”

With the MDGs due to expire in 2015, last summer saw the launch of a timely addition to the global health
landscape: The Lancet Commission on Global Surgery. It aims to make global access to safe surgery a reality “by embedding surgery within the global health agenda, catalysing political change, and defining scalable solutions for provision of quality surgical and anaesthesia care for all.”

As one of the 22 commissioners engaged in delivering this project, Dr Conteh sees a clear gap that needs addressing: economic evidence. “The clinical evidence for surgery is of course strong, but we’re also forced to acknowledge there’s a fixed budget.” Current evidence on costs, cost-effectiveness, and financing of surgery is relatively small-scale and disparate. “It’s hard to make your case for investment when you don’t have the data to support you.”

It’s certainly true that the costs associated with surgery are not straightforward, especially in terms of initial financing. However, surgery is “a perfect example of what economists refer to as economies of scope. Build the theatres and you can then provide a range of services and operations. Your costs aren’t necessarily going to escalate linearly and you can do a lot, you can help a lot of people.”

As The Lancet Commission looks to build a case for surgery, it won’t only be looking to statistics. As Lifebox’s Make It Zero campaign shows, stories and individual narratives have a powerful rationale and motivation. We all know someone who has had an operation, meaning that surgery isn’t a crisis happening ‘over there’—it’s an experience we can all relate to. Less self-serving and more human nature, it makes it easier to understand why access to safe surgery is something we all deserve—and makes us more likely to fight for it.

“You could almost couch this in a human rights narrative,” said Conteh. “It’s a human right for women to access essential, safe, good-quality surgical interventions.”
Ebola in Guinea—people, patterns, and puzzles

Melissa Leach

The francophone west African country of Guinea doesn’t often make international headlines, but it has in recent weeks for the nastiest of reasons. An outbreak of Ebola, first identified in the forested southeast of the country in mid-March, has now spread to take hold in the coastal capital, Conakry, where at least six cases have been diagnosed. This is the first recorded west African outbreak of this rapidly-killing haemorrhagic fever. So far over 80 people have died.

This is devastating news for people in Guinea—a country I’ve lived and worked in over many years. But it’s not just a sense of personal connection with tragedy that prompts these reflections. This outbreak raises intriguing patterns and puzzles that encourage us to ask new questions about zoonotic disease emergence in general, and what may be happening here in particular.

There is much about the pattern of this outbreak—and the international community’s response to it—that is typical of experiences with Ebola elsewhere. First, Ebola is being highlighted as an “exceptional” disease—one well worthy of dramatic political and public attention. This contrasts with more mundane diseases—malaria, pneumonia, diarrhoea—that more regularly afflict Guinea’s women, men, and children.

Second, accounts of this episode closely fit a global “outbreak narrative” that has come to typify international accounts and responses to so-called emerging infectious diseases. This is a narrative about mobile microbes and people in a mobile world, and about how disease originating in remote places spreads to threaten global populations.

All elements are present in accounts of Ebola in Guinea: the likely reservoir of the virus in forest-dwelling bats; likely “spillover” transmission in a rural setting (whether via hunting, eating, or otherwise coming into contact with an infected bat or ape—there has been speculation about all of these); the first diagnosed case in a senior hospital doctor in the rural town of Gueckedou; spread to health workers and kin attending his funeral, and thus to the town of Macenta; and now, through kinship, trade, and transport networks, to the capital.

Fears of the outbreak “going global” were voiced when a Canadian who had visited Guinea was suspected to have the disease—although this turned out not to be the case. Meanwhile, publics and authorities in Liberia, Sierra Leone, and Senegal fear the virus will travel rapidly across Guinea’s international borders, following the multiple movements of people for festivals and visits, livelihoods and trade that are part of life in this region. Indeed Senegal has now closed its border with Guinea.

Third, this Ebola outbreak is couched as a security threat. In a move that aligns with a broader international “securitisation” of infectious disease in recent years, the Economic...
Community of West African States (ECOWAS) has called for international help to thwart the “serious threat” it poses to regional security.

There is nothing inherently untrue about all this, and coupled with security concerns it may help to pull international agencies, effort, and resources to Guinea. Indeed this is already happening. However, this pattern of narrative and response does downplay some other aspects of disease dynamics that might be worthy of more attention.

One is the relationship between Ebola and poverty. Southeast Guinea, despite its rich mineral resources, is an economically poor region by any standards. While the Ebola virus knows no class boundaries—Guinea’s first few cases spread amongst a relatively elite doctor’s family, after all—poverty-linked livelihood practices and overcrowded health facilities have undoubtedly been part of its dynamics. Meanwhile, the impact of a sudden, rapidly killing virus, awful anywhere, can easily feed into a worsening spiral of impoverishment for rural and urban peoples.

Second, the narrative of rapid, sudden emergence of a disease like Ebola can overlook longer histories of interaction, which can offer valuable clues as to how to deal with it. In central and eastern Africa, the idea that Ebola is novel has been found wanting. Scientists have found antibodies suggesting that human populations may have long been exposed to Ebola, and anthropologists such as Barry Hewlett have shown that local populations have long been aware of the disease and have their own cultural logic to explain it and social protocols to deal with it. These include practices of isolation and care that have proved so effective that agencies such as WHO have incorporated them into their response strategies.

Ebola control efforts that in the 1990s relied solely on top-down expert interventions, and were sometimes resisted and resented for their injustices, are now much better integrated with local knowledge and responsive to community concerns. Non-governmental and government agencies now attempting to control Ebola in Guinea might pay heed to these experiences.

Might there be relevant and useful local knowledge and experiences to be tapped into, out in those remote forest villages? Ebola was described as an unknown, strange illness (“une maladie étrange”) by the nationals first reporting it to the Guinean press. But these were urban residents, with elite perspectives. What of Guinea’s rural inhabitants? Has anyone explored? This is the first of the puzzles that, to me, needs to be addressed.

The second is more intractable, and concerns the relation between this outbreak and environmental change.

The scientific struggle to find the reservoir host of the Ebola virus has been long, and is not yet concluded (although there is good evidence for it in bats, in west Africa as elsewhere). Environmental modellers have associated outbreaks with forested environments, and with particular seasonal conditions. But this still leaves the question: why a major outbreak in Guinea now? And why has this part of west Africa escaped, until now, the outbreaks that have afflicted east and central Africa?

It could be that Ebola is more ancient in the region than scientists and authorities have realised—so the current epidemic is an epidemic of diagnosis rather than of disease. It could be that the region’s bat populations have only recently acquired the virus.

Or it could be that they have long had it, but spillover to humans is more recent. Here, an environmental narrative sometimes circulates. This assumes that once extensive forests in which bats lived, separately from humans, have undergone progressive deforestation under the influence of population growth, land use, and climate change. As bat habitats have fragmented and as people have moved into once-pristine forest areas, so human–bat contact has increased, making viral spillover more likely.

While it sounds plausible, however, such a linear narrative is hard to apply convincingly to southeast Guinea. As my own research with James Fairhead has shown, the upper Guinea forests have been a mosaic of forest, savanna, and farmland for at least several centuries. The forest ‘islands’ of Gueckedou, and parts of the larger forest reserves here and in Macenta, are actually the result of people’s land use and management, having grown over enriched soils associated with settlements and farming. People in this region have long co-habited with bats, or at least bat habitats. If something has changed to make spillover more likely, it must be in the intensity and details of people-livelihood-landscape-bat interactions, not in their basic pattern. Possible candidates might include the rapid growth of small-scale mining with its precarious forest living conditions, or shifts in hunting practices.

So intriguing puzzles remain. Untangling these—through research that combines environmental, epidemiological, virological, veterinary, and social science with local knowledge—will be key to predicting and preventing future outbreaks of Ebola—in this and other regions.

Meanwhile, the struggle to control an outbreak that is already underway in Guinea continues. May it be successful, and as soon as possible—for the sake of Guinea’s own people as well as those who live beyond its borders.
Neglected tropical diseases and access to medicines: time to think beyond drug donations

Julien Potet

Two years ago, some of the world’s biggest pharmaceutical companies signed the London Declaration, pledging to better control ten neglected tropical diseases. Central to this commitment was the use of drug donations to enable preventive chemotherapy of helminth infections. As stakeholders gather in Paris on April 2 to celebrate the 2-year anniversary of the London Declaration, it is timely to examine the challenges for access to medicines for three other high-burden neglected tropical diseases: human African trypanosomiasis, visceral leishmaniasis, and snakebites.

For these diseases, perhaps the most well-known drug donation is that of eflornithine, a pivotal drug for advanced human African trypanosomiasis. In 1999, French pharmaceutical company Aventis—which later became part of Sanofi—discontinued production on the grounds that the drug was not profitable. Médecins Sans Frontières (MSF) joined forces with WHO to convince the company to resume manufacture. This led, in 2001, to a comprehensive donation agreement, under which all drugs for human African trypanosomiasis are produced and donated in unlimited quantities by Sanofi and Bayer.

Encouragingly, the donation agreement includes second-line drugs such as melarsoprol. But as the elimination of human African trypanosomiasis is increasingly within reach, smaller drug quantities are needed. Each batch of melarsoprol produced by Sanofi contains 80,000 vials, because producing the drug in lower quantities would not yield any cost savings. Most vials are simply discarded—unused—when they reach their expiry date (personal communication Simarro). A major pharmaceutical firm like Sanofi can afford to commit to continue donating drugs in this way, but could other, smaller firms?

The market for drugs for visceral leishmaniasis is on a similar downward trend, as the number of cases is now declining thanks to recently intensified control efforts, notably in south Asia. The volumes of paromomycin, sodium stibogluconate (SSG), miltefosine, and liposomal amphotericin B (AmBisome) that are needed are expected to remain low or even decrease over the next few years.

A solution should be easy to find for access to liposomal amphotericin B because the drug is not only used for visceral leishmaniasis, but also as an antifungal treatment.
for much more lucrative indications, including presumptive treatment of febrile neutropenia in cancer patients. The manufacturer, Gilead, is increasing supply capacity to meet global needs. There is no reason why Gilead could not expand its limited donation of liposomal amphotericin B for visceral leishmaniasis treatment and offer the drug free of charge or at a more affordable price to all endemic developing countries, including India—the country with the highest number of cases. In addition, there are now several producers of generic liposomal amphotericin B in India, and competition could bring prices down.

As regards miltefosine, Paladin, the Canadian manufacturer of the drug, can and must improve its access programme. MSF and endemic developing countries currently face difficulties accessing the preferential pricing scheme established by the company. This needs to change, particularly now that a Paladin spinoff named Knight Therapeutics has been awarded a lucrative “priority review voucher”, worth up to US$300 million, after the registration of miltefosine by the US Food and Drug Administration as a drug targeting a neglected disease.

The supplies of paromomycin and SSG, however, are more of a concern because these drugs are used exclusively for leishmaniasis, a disease without lucrative market prospects. They are produced by small companies: Gland Pharma and Albert David (both in India). Unlike Sanofi and melarsoprol, these companies may not be able to afford to continuously maintain a production line, let alone donate the drugs in unlimited quantities. Pooled procurement between the countries most affected by leishmaniasis, with technical support by a third party to facilitate demand forecast, tendering, and drug distribution, may be the best solution to increase the predictability of drug orders and avoid a supply crisis. Such a mechanism could sit within an existing global health structure and be funded by endemic countries and donors.

Worryingly, the supply of antivenom for African snakes has already reached a state of crisis. The market is dominated by cheap products with unclear efficacy. Sanofi is now considering discontinuing the production of its highly effective polyspecific African snake antivenom because it is simply now not a tenable line of business for them. As with efornithine, Sanofi needs to recommit to continuing production of these lifesaving drugs.

Unfortunately, since snakebites were not included in the London Declaration framework, there is no identified space for high-level agreements between stakeholders on access to antivenoms. A multilateral initiative is needed to assess the quality of antivenoms against the norms set by WHO. This should result in the establishment of an antivenom procurement fund that would purchase only those products found to be safe, effective and quality-assured.

The London Declaration has undoubtedly been successful in turning the spotlight on some of the world’s most neglected diseases. However, the underlying reasons why Sanofi and other producers are tempted to abandon these markets need to be addressed. The stakeholders of the London Declaration need to think beyond donations by large pharmaceutical companies for a limited range of diseases and pursue new types of market-shaping partnerships with the pharmaceutical sector, including with smaller entities and companies from emerging economies.
Yaws eradication: gaining momentum, but a bumpy road ahead

Andrea Rinaldi

Yaws is back on the global health agenda. WHO is gearing up to wipe the disease off the face of the earth by 2020, but is this target feasible? Andrea Rinaldi reports from the Third WHO Consultation on Yaws Eradication, March 24–25, 2014.

An infection of the skin and bones caused by the spirochaete Treponema pallidum subsp. pertenue, yaws mainly affects children younger than 15 years who live in rural settings in tropical areas; if not treated, it can lead to gross disfigurement and disability. Yaws was first targeted for global eradication in the postwar era. Running from 1952 to 1964, the Global Yaws Control Programme was a big success, treating some 300 million people in 46 endemic countries and reducing prevalence by 95%. But the last mile was never walked. Remaining cases were not adequately traced down, latent infections overlooked, and surveillance measures not enforced, with yaws ultimately resurfacing in many areas.

Not being a top health priority anymore, yaws has not grabbed the headlines for decades. However, the struggle has continued locally. Notably, India succeeded in eliminating yaws in 2006, through selective community treatment with injected penicillin. Then, in 2012, a breakthrough study published in The Lancet showed that a single oral dose of the well known antibiotic azithromycin was at least as effective as penicillin injections in curing yaws. Administering a pill instead of painful injections makes things much easier in the field, as trained personnel are not necessary and children don’t run away.

With this new weapon at hand, WHO decided to bring the fight against yaws to the global level again. A new eradication policy built around mass azithromycin administration was sketched in March 2012, at a consultation held in Morges, Switzerland, and the 66th World Health Assembly endorsed WHO’s roadmap to accelerate the work to overcome the global impact of neglected tropical diseases, including the eradication of yaws by 2020.

How has work progressed so far? The Third WHO Consultation on Yaws Eradication, March 24–25, 2014, Geneva, Switzerland, cast much light on the current situation.

First, let’s take a look on the bright side. WHO is convinced about going ahead with the eradication campaign. The timing is right, since the renovated attention to neglected tropical diseases in general will pave the way to some extent. “One time we were close and then, for one reason or another, yaws came back. And it’s a shame it is still there,” said Dirk Engels, at the WHO Department of Control of Neglected Tropical Diseases, opening the meeting.

Pilot projects implementing the ‘Morges strategy’ for mass drug administration and using a new rapid diagnostic test have been carried out in 2013 in Ghana, Papua
New Guinea, and Vanuatu, and preliminary results were presented at the meeting. When high treatment coverage (more than 90%) is reached, the number of yaws cases within the community drops dramatically. The new diagnostic test, originally developed for syphilis, proved of great help detecting cases of yaws that are difficult to diagnose based only on clinical symptoms. The test will also assist in the surveillance that will be needed for years after endemic communities are treated with antibiotics. No resistance to azithromycin was detected during the pilot projects, and adverse effects were minor and transient. Discussion is well advanced with Pfizer, azithromycin’s main producer, to donate millions of doses.

Then, the problems. The real epidemiological situation is unclear. For many of the previously endemic countries, nothing is currently known, and since they often share borders with countries known to harbour active cases, it is not safe just to assume that they are yaws-free. Thus, the lack of reported cases in many areas might not be the result of true disease elimination but rather of lack of surveillance. The WHO Western Pacific Region Office (WPRO) delegates at the Geneva consultation showed evidence that yaws is present in the Philippines, a country that has not officially reported yaws cases since the early 1960s.

Needless to say, this uncertainty poses a heavy burden on the campaign planning. How many drug doses and diagnostic tests will be needed? How can treatment delivery and surveillance costs be reliably calculated? Not surprisingly, cost estimates of yaws eradication announced at the meeting ranged from as little as US$100-200 million to up to $1 billion.

“Yaws begins where roads end,” is an old saying, meaning that affected populations are often those most difficult to reach. A recent experience lived by Médecins Sans Frontières (MSF) gives a precise idea of the logistic problems the eradication campaign will face. Attempting to survey the Aka Pygmy communities in northern Congo, MSF teams had to travel on foot, in pirogues, or 4x4 vehicles for 2 months to reach 100 villages, ultimately treating over 17,000 people for yaws.

Before tackling logistics, WHO will have to work hard to enhance political commitment and donors’ interest in the eradication campaign, to secure adequate funding. Frankly speaking, very few people out there barely know yaws exists. Yaws will not kill you, nor make you blind or crippled, but Guinea worm, now close to eradication, doesn’t either. The difference is that action against Guinea worm is backed by a champion—former US President Jimmy Carter—while yaws is a disease neglected even among neglected diseases.

Finally, the outlook. Yaws is probably the simplest disease to eradicate, medically speaking. The feasibility of eradication has been acknowledged also by the International Task Force for Disease Eradication. Integration with other public health interventions could greatly benefit the yaws campaign, as was recently seen with malaria elimination activities in Vanuatu. On the other hand, mass administration of azithromycin to eradicate yaws might have beneficial secondary effects, reducing the impact of other susceptible infections, as suggested by a recent study in this journal showing the occurrence of *Haemophilus ducreyi* as an important cause of chronic skin ulceration in a yaws-endemic region in Papua New Guinea. Wrapped around these positive factors, a focused advocacy and communication strategy must be rapidly set up and deployed.

Once the campaign is well on track, any delays due to the problems mentioned above will not be a disaster.
Satoshi Omura, of the Kitasato Institute in Japan, has today been awarded the 2014 Gairdner Global Health Award for his work on the origin and discovery of ivermectin. Millions of people, mostly in poor rural communities throughout the tropics, are taking ivermectin annually to cure or eliminate some of the world’s most disfiguring, stigmatising, and socioeconomically devastating diseases.

Over a 45-year career, Omura has discovered 470 new chemicals, perhaps the most unique and most significant, certainly in health terms, being avermectin, the parent compound of ivermectin.

The origins of avermectin lie in Japanese soil. In 1973, Omura initiated the world’s first major public/private partnerships with the US-based Merck pharmaceutical company. Potent bioactive soil-dwelling microorganisms he identified were run through customised novel screening systems devised by Merck. One fermentation broth exhibited remarkable bioactivity, eliminating helminth parasites from infected mice. The producing organism was identified as Streptomyces avermitilis and the effective chemical isolated and named avermectin. It showed activity against a range of parasites, including gastrointestinal roundworms, lungworms, mites, lice, hornflies, and ticks.

Avermectin was designated the world’s first ‘endectocide’, a word coined specifically to describe a completely new class of compound, active against a spectrum of internal and external nematodes and arthropods, capable of killing both parasites and insect vectors. Despite extensive searches worldwide, the organism unearthed in Japan remains the only avermectin producer ever found.

A Merck-based multidisciplinary team produced a dihydro derivative, ivermectin, which proved extremely safe and highly effective. Introduced commercially as an anthelmintic for animal health in 1981, it quickly became the sector’s leading product, with billions of livestock and pets, such as dogs and horses, being treated annually. Within 2 years, ivermectin was generating annual sales exceeding $1 billion, a status maintained for two decades.

Merck scientists worked with the UN’s Special Programme for Research & Training in Tropical Diseases and discovered that ivermectin was ideal to combat human onchocerciasis (also known as river blindness). The drug was registered for human use by French regulators in 1987, taking advantage of special regulations that would allow mass drug administration in entire communities in Francophone ex-colonies in west Africa, where onchocerciasis had been an unchecked scourge for centuries.

In an unprecedented gesture, Merck and Kitasato agreed that ivermectin (as Mectizan) would be donated free of charge for as long as it was needed to combat onchocerciasis, thereby creating the world’s first, largest, longest-running and most successful drug donation programme. Not only has that pledge been honoured continuously, in

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2000 it was extended to cover people infected with the parasites that cause lymphatic filariasis (also known as elephantiasis).

In 2012, a total of 134.5 million annual treatments were approved for onchocerciasis and 150 million for lymphatic filariasis. Since 1987, around 2 billion free treatments have been approved and distributed via the unique community-directed treatment process specifically designed to allow villagers themselves to deliver the extremely safe and easy-to-use drug. Thanks primarily to donated ivermectin, onchocerciasis is slated for global elimination by 2025 and lymphatic filariasis by 2020.

Meanwhile, commercial preparations of ivermectin are being used to treat a variety of human health problems. Ivermectin is the drug of choice to treat strongyloidiasis, which infects up to 370 million people worldwide. Mass administration of oral ivermectin is expanding to combat scabies, which affects 130 million people globally. Household-wide treatment with ivermectin is increasing to rid people of head lice, which infest 6–12 million children in the USA alone.

Mass treatment with ivermectin in resource-poor communities is so comprehensively beneficial it has led many experts to herald it as “an underutilized public health strategy”. Moreover, new possible uses are continuing to emerge, heralding potential breakthroughs in tackling various neglected tropical diseases—and beyond. Research has shown that, for malaria, ivermectin can kill anopheles mosquitos, cutting infective Anopheles gambiae numbers by 80%. For human African trypanosomiasis (sleeping sickness), single doses of ivermectin to deworm cattle decrease the survival and fecundity of disease-transmitting tsetse flies feeding on the cattle by up to 94%. Ivermectin is also efficacious in curing cutaneous leishmaniasis, killing Leishmania parasites in vitro and via subcutaneous inoculation.

Ivermectin also has significant potential to kill Trichinella, which infects about 11 million people. It also inhibits development of Chlamydia trachomatis—at doses that could be used clinically for sexually transmitted or ocular infections.

Originally thought to have antibacterial or antiviral properties, avermectin has recently been reported to kill Mycobacterium tuberculosis, including multidrug-resistant strains. Astonishingly, in 2010, it was reported that ivermectin induces chloride-dependent membrane hyperpolarisation and cell death in leukaemia cells, prompting suggestions that it could be rapidly put into clinical trials for leukaemia. In 2012, ivermectin was shown to be a highly potent inhibitor of yellow fever virus replication and also, although less efficiently, replication of several other flaviviruses, notably dengue virus, Japanese encephalitis virus, and tick-borne encephalitis virus.

Although Satoshi Omura is a single member of the multidisciplinary international team behind ivermectin, it is entirely fitting that the international science community has recognised him for his pioneering leadership in providing such a wonderful multipurpose tool for the global health armamentarium.
Aaron Oxley is Executive Director of RESULTS UK.

The international TB response: what are we missing?

Aaron Oxley

This World TB Day, parliamentarians from all G7 countries have signed on to an impressive call to action. That they do so is right, and timely. But are these countries doing all they should in fighting the disease?

The statistics hardly bear repeating again, but as so few seem to realise the challenge and threat tuberculosis (TB) still poses, it seems prudent to take a moment to do so.

Each year there are 8.7 million new cases and 1.3 million deaths. Virtually all of those deaths are preventable, most with just US$20 worth of drugs. 3 million people each year remain mis- or undiagnosed, with disastrous consequences for themselves and those around them. TB remains the second most deadly infectious disease in the world and the leading killer of people living with HIV. Drug-resistant TB is on the rise, primarily due to poor diagnosis and treatment, and only a small fraction of drug-resistant cases are being successfully treated.

It is impossible to talk about international solidarity in TB control without talking about the Global Fund to Fight AIDS, Tuberculosis, and Malaria, as it provides over 80% of all international support to fight TB. It has achieved impressive results, and is credited with funding the detection and treatment of 11.2 million cases of TB, 1.5 million of these in 2013 alone. So how well do the G7 countries do in supporting the Global Fund?

Pretty well, actually. At the Global Fund’s replenishment conference in December, donors pledged new money for 2014–16, raising just over $12 billion in total, about 18% of which will go to TB. The USA led the pack with an up to $5 billion pledge. The UK also came in strong, with up to £1 billion ($1.6 billion), taking the second-place donor spot from France, who, at €1.08 billion ($1.46 billion), had held it for many years. Japan managed $800 million, no mean feat given domestic budgetary pressure still being felt from the Tohoku earthquake and tsunami of 2011. Canada pledged a healthy CA$650 million ($612 million). Germany pledged early and many hoped it would increase, but in the end disappointed with a relatively modest €600 million ($815 million), given the size of its economy and its historic support for the Fund. Even Italy, once a major supporter whose contributions were slashed to zero during its deep financial crisis, is back to the table with a small but meaningful pledge of €100 million ($135 million). We hope that both Germany and Italy will do more.

In general, the G7 countries are generous and stalwart in their support of the Global Fund, and, thus in turn, TB. They should be commended for this: money invested in the Global Fund saves lives. The parliamentarians who signed the call to action can breathe a sigh of relief: no-one can call them hypocrites who aren’t putting their money where their mouths are.

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The blog was closed on December 31, 2018 and all posts are available via the archive at https://www.thelancet.com/journals/langlo/blog
So what are the parliamentarians calling for? What would make the difference in the fight against the disease?

More funding for research and development, certainly. We desperately need new TB drugs, diagnostics, and a vaccine that works. The excellent G-Finder reports reveal that R&D on TB actually dropped in 2012. This is shameful: all can and must do better in this regard.

But how about finding the missing 3 million? It’s the theme for this World TB Day, and finding those people is the necessary first step in getting them on the right treatment that makes them non-infectious and prevents the rise of drug-resistant strains of the disease.

Stigma, isolation, and poverty all combine to make finding the missing 3 million a serious challenge. TB REACH is a facility housed within the Stop TB Partnership that makes small grants (<$1 million) to innovative case-finding projects. If these ‘pathfinder’ projects are successful in finding new cases, the programmes are taken on and scaled up by others like the Global Fund or national Governments themselves. TB REACH is delivering excellent results, and boasted an average increase in case detection rates of 33% in the first 12 months.

To date only Canada has provided funding for TB REACH. Canada deserves immense praise for having the vision and the courage to reach out to the poorest and most marginalised, to find new ways to get them quality care. The rest of the G7 should join them: those 3 million people each year who fall ill and are missed by the system can’t wait.
Policy, public health, and the evidence base for charging migrants

Clare Shortall

In the wake of proposals to radically reduce migrants’ access to England’s National Health Service (NHS), we question how much consideration has been afforded to the wider public health implications of these proposals, and to what extent they are evidence-based, cost-effective, or even safe.

Under current rules, individuals who are not citizens of the European Economic Area (EEA) can be charged for secondary care if they are not deemed ‘ordinarily resident’ in the UK and do not fall within certain exempt groups. Provision of primary care is at the discretion of the general practitioner (GP). Certain key provisions including accident and emergency (A&E), family planning, sexual health, and HIV services are freely accessible, as are treatments for specific communicable diseases.

However, the new Immigration Bill and the Government’s response to the consultation on migrant access to the NHS look to change this practice. The Bill will allow for a health-care surcharge for all non-EEA temporary migrants. This is in addition to changing the ‘ordinarily resident’ qualification from those living in the UK with a ‘settled purpose’ to those with ‘indefinite leave to remain’ (the latter taking on average 5 years to achieve). The Department of Health estimates that this move will affect 1·4 million people including many students, workers, and vulnerable groups.

Furthermore, plans are outlined to extend charging to emergency and some primary-care services including pharmacy, dentistry, optical, and community care (but excluding GP consultations).

We have strong concerns that these changes could widen health inequalities. Currently, even those who are fully entitled to free NHS services are not always accessing them and there is evidence that migrants often look to A&E to meet their health needs. Charging in A&E could disproportionately affect certain vulnerable and marginalised groups such as those with pre-existing disabilities, mental health conditions, victims of domestic violence, some victims of trafficking, and irregular migrants. The latter are an estimated 618 000 people who are not permitted to work; thus, refusal of free health care is a de facto refusal of any care, in contravention of Article 12 of the International Covenant on Economic, Social and Cultural Rights.

The most recent Health Protection Agency (now Public Health England) report on migrant health stressed that, although the majority of non-UK-born residents do not have infectious diseases, ‘A small proportion of the non-UK born bear the greatest burden of infectious disease.’ Fear of eligibility checks and of incurring debt may create barriers to accessing services even for exempt diseases such as...
HIV and tuberculosis, with consequences for individual and public health.

Concerns that doctors will be asked to act as immigration officials have also been raised. Indeed, findings that some Overseas Visitors Officers (OVO) feel that doctors should learn about ‘Not treating if not immediate and necessary until any payment question is settled, as well as discharging if necessary’ seem clearly at odds with the duties of a doctor. These policies are also likely to worsen existing discrimination. The research accompanying the Bill notes that some staff seem to ‘prefer to look out for other signs of “foreignness” (often based on name/language/accents/nationality) and might alert the OVO based on these.’ Moreover, plans to link NHS and Home Office data have raised concerns around civil liberties and the potential erosion of data protection safeguards, not to mention the increased administrative burden, and expensive technological upheaval that it could entail.

The consultation met strong calls to exempt pregnant women and children from charges. Maternal health outcomes for migrants are significantly worse than for UK-born women. Instances of payment being aggressively and persistently sought and women being refused treatment have raised concerns about access, particularly as late booking and missed antenatal appointments are known risk factors for maternal death. Lack of automatic free access to health services could also reduce chances to intervene in issues of child safety, health, and wellbeing, contravening the UN Convention on the Rights of the Child.

The Government has defended its proposals, including the non-exemption of children and pregnant women, with research in which the ‘method used and the conclusions drawn’ have been heavily criticised. The qualitative component largely reported the perspectives of OVOs, with only 59 of the ‘circa 150’ participants being healthcare professionals. The quantitative component, which the Department of Health refers to as a ‘robust baseline estimate’, generated health tourism figures from country-specific immigration estimates derived from an International Passenger Survey. Countries were then stratified according to two composite indices, ‘poor local health economics’ and ‘ease of travel and integration to UK’, and a percentage taken to generate an estimated cost of £70 million per year (range £20–100 million). However, the authors acknowledge making ‘a large number of assumptions, to some of which the results are markedly sensitive. There is a great deal of uncertainty in the results.’

This estimate also conflicts with Doctors of the World’s findings that migrants tended to be in the UK for, on average, 3 years prior to accessing services, and evidence that HIV status is not a factor in the decision to migrate, with migrants being tested an average of 5 years after arrival.

The House of Commons Health Select Committee has previously criticised the introduction of similar changes ‘without any attempt at a cost-benefit analysis’. Cost calculations need to account for: the expenses of administering a new system; the public health costs of potentially increased transmission secondary to diverting patients from normal access pathways and delayed diagnosis and treatment; and the cost to the economy of fewer migrants living, studying, working, and spending in the UK. We anticipate that these costs are likely to dwarf any savings made, and a better initial focus would be recovering funds from other EEA nations for the treatment of their citizens, estimated at £305 million, of which only around 16% is currently recouped (see figure 1).

We believe that the proposed changes undermine the ethos of the NHS and will lead to discriminatory policies that are neither evidenced-based nor cost-effective, and could negatively affect the health of the nation.

This is a joint post with Colin Brown, Nadeem Hasan, Danni Kirwan, Mariam Sbati, Darshan Sudarshi.
Taps and toilets essential to maintain India’s polio-free miracle

Neeraj Jain

By Indian media accounts, little Ruksha is now an energetic 5-year-old, for whom a slight limp and weakness in her right leg is her only reminder of her brush with death. But she is now a symbol of a big win for public health. 3 years ago, this little girl was rushed to hospital in her state of West Bengal with leg pain and swelling and diarrhoea. The diagnosis: polio. There is no cure, but with supportive treatment, she made a near-complete recovery. This year, her country marked a milestone that is no less remarkable: Ruksha’s polio was the last recorded case in India. Under WHO guidelines, officials can now declare India to be polio-free. Remarkable as it is, World Water Day on March 22 should remind us that, without continued improvements to water and sanitation issues, India’s polio-free status remains fragile.

India’s polio-free declaration is good news by any measure, a public health victory at a time when polio is grabbing headlines with its terrible resurgence among Syrian refugees, and its stubborn tenacity in Afghanistan, Pakistan, and Nigeria. The head of WHO’s polio eradication programme, Bruce Aylward, called it the one thing that everyone said could never be done.

As recently as 2009, India reported 762 cases of polio, more than any other country in the world. To combat this, an army of 2.3 million health-care workers reached out to some 170 million children with polio vaccine—including children in flooded regions and remote villages who might not have ever seen a nurse.

This massive immunisation drive takes most of the credit. But there is another factor at play, one which makes immunisation more effective, and which threatens future successes without further progress and development. Clean, safe drinking water and good sanitation are key to fighting the spread of polio. Poliomyelitis is transmitted through human waste. Where sanitation and hygiene are good, the disease can be more easily kept in check. But it can flourish in crowded and dirty conditions like urban slums or refugee camps.

Out of India’s population of 1.2 billion, 780 million people do not have a proper toilet, and another 96 million do not have access to safe drinking water. In rural areas, nearly 7 in 10 people still practised open defecation in 2010. Multiple studies have shown that oral polio vaccines are much less effective when a child is suffering from infection and diarrhoea. Studies led by Imperial College, London, UK
in 2006 and 2007 in Uttar Pradesh and Bihar found that it was difficult to eliminate polio in crowded areas with poor sanitation. In the absence of toilets, live polio virus—which is excreted in faeces—continued to spread despite attempts to stamp it out with immunisation. Researchers also found children in these areas struggled to respond properly to the oral vaccine.

The effort to wipe out polio meant that children in some parts of India have received as many as 30 doses of oral vaccine before their fifth birthday. “This is an incredible achievement and they should rightly be celebrated. But it took a lot of doses of vaccine to get there,” said Nicholas Grassly, the Imperial College epidemiologist who co-authored the study. “It’s also important to create an environment where the vaccines will work better.” Water and sanitation improvements are vital components. In 2012, WaterAid India helped more than 450 000 people get safe drinking water and nearly 300 000 get toilets, but there is a long way still to go. India’s prime minister, Manmohan Singh, acknowledged this 2 years ago in calling for safe drinking water and proper sanitation for India’s children, to prevent and control the spread of disease.

Despite India’s incredible progress in eradicating polio, we know that the elimination of this transmissible disease is fragile as long as children and adults must relieve themselves in slum streets and on railway tracks. We can help ensure that this terrible disease does not return by tackling the insidious way it spreads—by addressing poor hand-washing, bad sanitation, and an unsafe water supply. Only by putting this basic but vital infrastructure in place can we make sure that Ruksha remains India’s last victim of this deadly disease.
International Women’s Day: an opportunity to reflect on the importance of meeting women’s health needs

Eleanor MacPherson

One in every three women will be beaten or raped during her lifetime. Every minute, at least one woman dies from complications related to pregnancy or childbirth. These facts make sombre reading, particularly today (March 8), when the global community comes together to mark International Women’s Day. Established in 1977, International Women’s Day provides an opportunity to celebrate achievements in women’s rights and to reflect on the distance we still need to travel to ensure equality between women and men. Some of the greatest challenges in achieving gender equality remain in the area of health.

Health is a vital component of women’s wellbeing across the lifecycle from birth to old age. Women’s right to health has been globally recognised since the UN conferences of the mid-90s. Following the 1993 World Conference on Human Rights, the Vienna Platform for Action recognised that gender-based violence and sexual harassment constituted an abuse of human rights. This in turn paved the way for the International Conference on Population and Development (Cairo 1994) to articulate a range of human rights related to sexual and reproductive health, including the right of individuals and couples to decide whether or not to have children. Finally, at the Fourth World Conference on Women (Beijing, 1994) the Platform for Action included a statement which recognised that “the right of all women to control all aspects of their health, in particular their own fertility, is basic to their empowerment” (Beijing Declaration, 1995). The Millennium Development Goals (MDGs), while including some components related to women’s and girls’ rights, failed to build on the progressive work of these earlier UN policies.

In the global South (as well as in the global North), widely held societal expectations of men and women’s behaviour, roles, and responsibilities shape men and women’s lives. These expectations create inequalities in access to resources and information, as well as the power to make decisions, both individually and within communities. In relation to health, these gender-based inequalities combine with biological factors to place women in a vulnerable position to ill health.

Gender inequalities based on social and cultural structures and norms can also limit women’s access to quality health care to address the full range of their health needs. Women make up the majority of both paid and unpaid health workers yet they are more likely to work in a lower...
paid position. This in turn means that women are often working at the community level, with the most vulnerable groups and yet, based on their position, with the least ability of all health cadres to influence health policy-making.

I work with the Gender and Health Group at the Liverpool School of Tropical Medicine. With my colleagues, we work in partnership with researchers in the global South to apply gender analysis to understand:

- the ways in which the health system responds to women’s needs
- the need to prioritise gender-based approaches in health-service delivery and
- the interplay between gender and other axes such as age and ethnicity and their effect on vulnerability to ill health

Gender and the health system: In the health system, gender and women’s needs are often overlooked. In PERFORM, we challenged the limited attention to gender in human resources for health. In particular, we looked at gendered differences in health workforce performance and the strategies to address these differences in Ghana, Uganda, and Tanzania.

There is also a number of key challenges related to women’s access to health services in conflict-affected states. Services are often fragmented and depleted and this needs to be addressed in health systems strengthening. As part of the ReBUILD consortium and in partnership with global partners we are exploring the opportunities and challenges of building gender-responsive health systems in post-conflict and fragile contexts with case study analysis from northern Uganda, Timor Leste, Mozambique, and Sierra Leone.

Gender and health service provision: One of the most striking expressions of the failure to adequately provide for women’s health needs is the persistence of extremely high rates of maternal mortality in many parts of the world. There has been an enormous drive globally to encourage women to give birth in institutional facilities, yet the quality of services women receive may contravene their right to receive appropriate standards of care. We are working as part of an EU-funded consortium, MATIND, evaluating two large-scale state-run programmes in India that are designed to remove the financial barriers to accessing delivery care.

Gender and vulnerability: Gender and age interact to affect vulnerability to HIV: in sub-Saharan Africa, 72% of young people (aged 15–24 years) infected with HIV are women. Through partnership with colleagues in Malawi, we explored how the broader social environment, poverty, and gender place women fish traders in a vulnerable position to HIV in fishing communities. In Malawi, women are excluded from fishing and often have to negotiate access to fish to sell through sexual exchange with fishermen. Condoms are rarely used in these exchanges.

Removing gender inequalities in health requires social transformation at multiple levels, both inside and outside the health system. The UN is currently formulating a new plan for post-2015 to expand upon the MDGs. These negotiations provide an opportunity for renewed efforts to further women’s rights and it is vital that gender equality is fully integrated into this plan.
Designing medical devices for predictably unpredictable environments

Mike Miesen

Many remote hospitals in sub-Saharan Africa lack basic medical devices, like infant incubators, radiant warmers, and anaesthesia machines. Recognizing this, well-meaning individuals and organizations from high-income countries donate medical equipment—sometimes new, but mostly used—to these hospitals. Despite the best of intentions, this equipment often fails. Fortunately, social entrepreneurs and engineers are re-thinking medical device development in ways that could lead to real, sustainable improvements in health systems around the world.

There is no question that donated, used medical equipment has a role to play in strengthening low-resource health systems; it can better allow clinicians to provide life-altering, life-saving care to their communities. But, as Jane Cockerell, Chief Executive of the Tropical Health and Education Trust (THET), pointed out recently on this blog, the system must do better. (Her organization also helpfully produced a how-to guide for medical device donations). Roughly half of medical equipment in developing countries—much of it donated—is inoperable or otherwise out of service. This is simply not good enough.

Medical device donations fail for a lot of reasons, but the main one is that medical equipment functions most effectively when it is designed for the environments it will be used in, and most medical devices used in sub-Saharan Africa don’t meet this modest bar. So they break—and often stay broken. Even when used medical device donations are thoughtfully executed, there’s a limit to how effective they can be. A MRI machine designed for an American hospital simply isn’t fit to adapt to the most common difficulties faced by remote, under-resourced hospitals in Malawi or Nepal. A power outage in America is a national newsworthy event; in much of Malawi, it’s a daily occurrence. An American hospital running out of compressed oxygen would be vilified, scandalized, and sued; a low-resource Nepali hospital running out of compressed oxygen is the status quo. When an X-ray machine needs maintenance or a spare part in America, a trained expert with a spare part is readily available; in remote, under-supported Malawian hospitals it’s difficult to find either.

And so, as painful as it is to see life-saving medical equipment sit broken, idle, or otherwise inoperable in hospitals’ “medical device graveyards,” it isn’t remarkable or even all that surprising. It’s actually kind of obvious: the equipment isn’t designed for that environment, so why would we expect it to work there?
Designing devices to meet the needs in which they’ll be used—call it “context-aware design”—isn’t new. It’s perhaps the central tenet of medical device design: Know Thy Hospital. In hospitals and health systems in low-resource settings, the customer needs flexible technology fit for predictable unpredictability. Sometimes the electricity is available; sometimes it’s not. The shipment of oxygen canisters may have arrived on time; it may be 2 months late.

My organization, Gradian Health Systems, manufactures and sells the Universal Anaesthesia Machine (UAM), a device designed to function continuously in any environment. It’s made to thrive in predictably unpredictable environments. When electricity is available, the UAM’s in-built oxygen concentrator supplies ample oxygen to the patient. When the electricity cuts out, the system uses cylinder/tank or pipeline oxygen; if that isn’t available, it seamlessly converts to room air (known as draw-over anaesthesia). The oxygen monitor will last up to 10 hours on rechargeable battery backup, providing integrated safety in a potentially unsafe environment.

Crucially, the UAM is built for easy maintenance and repair, because that’s what the customer needs. With nothing more than a hex wrench, a screwdriver, and basic training provided during installation, the hospital’s in-house technician is able to diagnose most issues with the machine and locally source the necessary spare part. If he or she is unable to fix it, there will always be an in-country biomedical engineer who knows the UAM well—because we trained him or her.

My organization is only one of many to focus on context-aware design for difficult environments; to name just two others:

• D-Rev created the Brilliance phototherapy unit, which uses LEDs that can last 25 times as long as the difficult-to-source compact fluorescent bulbs traditionally used in phototherapy units
• Daktari designed a rugged, ultra-portable CD4 counter that can be used just about anywhere, allowing physicians to safely bring it to remote areas

Universities are helping to develop the context-aware design mindset in students, too. Rice University and Stanford University both have well-regarded programmes that have spun off a number of highly disruptive technologies that were designed with the end user in mind, including:

• The Bubble Continuous Positive Airway Pressure, or bCPAP device for neonates, which showed very positive results in a recent study conducted in Malawi
• The Embrace BabyWrap, a low-cost newborn incubator, was designed for use in hospitals and health centres with intermittent access to electricity, keeping newborns warm when the power cuts

It is crucial to design medical equipment that meets stringent safety and regulatory standards set by national and international bodies, like FDA and CE-mark approval. Without adhering to these high standards, device designers run the risk of creating technologies that are “good enough for them” but not “good enough for us.”

Organizations like THET have done an invaluable service by documenting how to appropriately donate used medical equipment. But we must recognize that used equipment is, at best, a partial solution. It isn’t designed for use in predictably unpredictable environments, and for that reason it often fails. Proper design focuses on the needs of the customer—not the needs of the donor.

The description of the Brilliance phototherapy unit has been corrected as of March 5, 2014.
Attacks on medical care in Syria

Vincent Iacopino

Attacks on Syria’s medical community and infrastructure have devastated the health-care system. Government forces—and sometimes opposition groups—have deliberately targeted medical professionals, hospitals, ambulances, and supplies, preventing untold numbers of people from getting medical care and stopping medical professionals from providing services when they are critically needed. In a ruthless conflict, where depriving civilians of food and medical care has become a military tactic, medical professionals have become high-value targets.

As our recently released factsheet shows, only 30 doctors reportedly remained in eastern Ghouta—located on the outskirts of Damascus—as of December 2013, out of more than 1000 who were working there before the conflict. As of September 2013, an estimated 15 000 doctors had fled Syria altogether. Numerous medical facilities have been destroyed or damaged. In Homs, almost half of the public health centres are no longer functioning.

Doctors and other medical personnel have an ethical obligation to provide care regardless of patients’ political affiliations, ethnicity, race, or other factors. States are obligated to protect physicians’ ability to objectively heal the sick and treat the injured under the principle of medical neutrality, which is embedded in international humanitarian law. Medical neutrality ensures safe access to medical facilities, protects health-care workers and their patients, and allows medical workers to provide unbiased care. However, physicians and other health workers in Syria are often seen as the enemy, being harassed, intimidated, tortured, and killed for doing their job of treating everyone.

At Physicians for Human Rights, we have documented violations of medical neutrality for more than 25 years, including in Bahrain, Burma, Chile, El Salvador, India, Iraq, Kuwait, Libya, Mexico, Panama, Somalia, Syria, Thailand, Turkey, the USA, the former Yugoslavia, and the West Bank and Gaza Strip. In the early 1990s, we wrote about health professionals and patients in the former Yugoslavia coming under sniper fire. In 2011, we shed light on widespread attacks on medical personnel during anti-government protests in Bahrain. This year, we have been speaking out against a bill in Turkey that represents just one more move by the government to crack down on medical personnel, simply because they treated anti-government protestors. These violations of medical neutrality have become far too common.

However, I cannot recall a conflict where the deliberate targeting of the medical community has been as vicious and systematic as in Syria. A UN group pointed out that the deprivation of medical access has been used as a weapon of war. Many other reports have stressed how the Syrian
conflict has been particularly dangerous for health professionals. A number of doctors have described the risks associated with treating patients on both sides of the conflict and the obstacles they face for providing care.

Amidst the cruelty of war, there is something truly disturbing about the targeting of those who risk their lives to care for the sick and wounded. In Syria, nearly 400 medical professionals have been killed in the conflict and more than 30 Syrian Arab Red Crescent workers have died providing humanitarian assistance. For every reported death, there are likely many others that will never come to light.

As we approach the conflict’s 3-year anniversary in March, the continued attacks on medical personnel and facilities will result in exponentially increased mortality among the sick and wounded and will profoundly undermine the country’s capacity to care for all Syrians.
Opening up data to accelerate research for neglected diseases and global health

Belén Pedrique

Among the many worrisome facets of global health is the lack of adequate treatment, vaccination, and diagnostic tools for diseases predominantly afflicting the poor. Neglected tropical diseases (NTDs), drug-resistant tuberculosis and malaria, and other lesser-known infectious diseases debilitate or kill millions of people in low- and middle-income countries (LMICs). However, because most of these patients are poor and marginalized, with little financial or political voice, research and development (R&D) for many of these diseases remains deficient.

Last autumn, the Drugs for Neglected Diseases initiative (DNDi) and colleagues published an analysis in The Lancet Global Health looking at the R&D landscape over the last decade in terms of new therapeutic products for 49 so-called neglected diseases, including malaria, tuberculosis, NTDs, diarrhoeal diseases, and other diseases of poverty. We found that, despite some progress, only 4% of all new drugs and vaccines approved from 2000 to 2011 were for neglected diseases; and of nearly 150,000 clinical trials registered as of the end of 2011, only 1% was focused on such diseases. In our assessment, nearly 80% of neglected diseases have R&D gaps that need to be filled to address patients’ needs.

After publication, our study received pertinent reactions and welcome attention, and we fielded requests from fellow researchers for access to our datasets and further details on methodology, which we happily provided. This interest inspired us to share as much as possible about the study, as well as to try to bring more attention to the urgent R&D and treatment needs of neglected patients.

To that end, we have created a public data-sharing page with full datasets from the study freely accessible to all. These datasets include listings and details (eg, therapeutic classification, year of approval, active substance, formulation) of all 850 new therapeutic products identified in our analysis—all drugs and vaccines approved or recommended by regulatory authorities between 2000 and 2011—as well as the 123 new products currently in development for neglected diseases (among all clinical trials [phases 1–3] registered as of the end of 2011).

By sharing these datasets, we hope to promote further research on R&D gaps for neglected diseases and help identify global-health research priorities. Such priority setting and coordination have been proposed by the WHO Consultative Expert Working Group on Research and Development (CEWG), including through the creation of a
Global Observatory of Health R&D. Also, we hope that these data could be used in future evaluations of R&D investments for neglected diseases—the recent Global Health 2035 report by The Lancet Commission on Investing in Health emphasizes R&D, recommending that international funding be doubled by 2020 for health R&D for diseases disproportionately affecting LMICs.

These datasets are accessible through DNDi’s Open Innovation Portal, which shares other types of data, including chemical compounds identified by DNDi as active against sleeping sickness (human African trypanosomiasis), Chagas disease, and leishmaniasis; and updates posted to two public databases: WIPO Re:Search for intellectual property, and ChEMBL for medicinal chemistry. Researchers, policymakers, funders, and the public can access and utilize these data to hopefully advance the field of R&D for neglected diseases, ultimately to accelerate the development and delivery of new health tools to reduce global disease morbidity and mortality. In the same way we consider medicines as public goods, we could consider data sharing as a public good.

Our data sharing is a very small addition to the larger global movement of information and data sharing among health actors—a movement we hope will become the norm. Many large international organizations, research funders, and others have pioneered this area through their data-sharing policies and actions, including WHO, UK Medical Research Council (MRC), US National Institutes of Health (NIH), US Centers for Disease Control and Prevention (CDC), US Food and Drug Administration (FDA), European Medicines Agency (EMA), Bill and Melinda Gates Foundation, Wellcome Trust, Cochrane Collaboration, and a variety of scientific journals.

In addition, among non-governmental organizations, DNDi’s founding partner Médecins Sans Frontières/Doctors Without Borders (MSF) recently released its first medical data sharing policy, describing itself as “the first humanitarian organisation to commit to a policy of sharing its medical data, for the purposes of public health research.” MSF’s past data-sharing efforts have contributed to the revision of WHO guidelines for treating multidrug-resistant tuberculosis, and reduced patients’ follow-up times for sleeping sickness.

All of these data-sharing initiatives point in the right direction, and in the end what is most important is the utility of these data. More can and should be done, and we intend to do more in terms of sharing our data and being more transparent. We encourage others to use our data, and share theirs, to fill health research gaps and ultimately reduce the global disease burden and help save lives.

This is a joint post with Nathalie Strub-Wourgaft, Medical Director of DNDi.
Household air pollution and pneumonia in Africa – will cleaner cookstoves make a difference?

Stephen Gordon

Half the world’s population, including 700 million people in Africa, use biomass fuel from animal or plant material to provide energy for cooking, heating, and lighting. People who use biomass fuel and young children, particularly babies carried on the backs of their mothers while cooking, experience substantial smoke exposure due to both partial combustion of fuel and to poor ventilation methods. The newly formed BREATHE partnership (Biomass Reduction and Environmental Air Towards Health Effects), which is hosted and coordinated out of the Liverpool School of Tropical Medicine (LSTM), is increasing the much needed research capacity into this global health risk.

Smoke inhalation—household air pollution is similar to tobacco—is an established threat to health and has been associated with a range of adverse health effects including adverse pregnancy and neonatal outcomes, acute lower respiratory tract infections (causing 1 million deaths among the under 5s every year), chronic obstructive pulmonary disease, and lung cancer. During the past 10 years, our published data from Africa have shown that (a) biomass fuel smoke was associated with high levels of household air pollution, (b) symptoms and impaired lung function were associated with biomass fuel smoke exposure and poverty, and (c) household air pollution was associated with altered alveolar macrophage particulate load and function. In addition to direct adverse health effects, inefficient burning of biomass fuel is a contributor to adverse environmental and climate change effects by degradation of forests and greenhouse gas emissions and these factors are increasingly recognised as independent risks for adverse health outcomes.

Although some effective strategies for reducing smoke exposure exist (eg, ventilation, improved stoves, cleaner fuels, behaviour modification) and have been actively promoted for a decade by the Partnership for Clean Indoor Air, the best solutions remain out of reach for the majority due to economic factors. Further, there have been no randomised controlled trials exploring the effects of biomass smoke exposure reduction interventions on health outcomes in Africa. Only two trials have been carried out elsewhere in the world: one in Mexico and the other in Guatemala. Romieu et al compared a Patsari stove intervention with traditional open fire on respiratory and other symptoms and lung function in 552 women in Central Mexico. A reduction in symptoms and lung function decline was seen in those who used the new Patsari stove. The
RESPIRE trial randomised 504 rural Mayan women in highland Guatemala to a Plancha stove intervention or open fire and assessed the impact on a range of respiratory health parameters. The Plancha stove reduced child and mother carbon monoxide exposures and chronic respiratory symptoms despite only a 50% reduction in indoor air pollution which left residual levels still well above WHO Air Quality Guidelines. Child pneumonia incidence was associated with smoke exposure and a reduction in severe pneumonia was seen with the stove intervention. We are aware of three current cookstove trials. One trial in Nepal is exploring the effects of a cookstove intervention on acute lower respiratory tract infection and low birthweight. A trial under development in Ghana will reduce household air pollution exposure and study early life outcomes. We have ourselves recently started the Cook Stoves and Pneumonia Study (CAPS) in Malawi.

It is of critical importance to make the most of the two trials that are planned and any other trials that will soon take place in Africa. The Global Alliance for Clean Cookstoves (GACC) was formed in 2010 and is committed to “foster the adoption of clean cook stoves and fuels in 100 million households by 2020” in order to “save lives, improve livelihoods, empower women, and combat climate change”. The GACC Health Working group, of which we are members, are very concerned by the need to harmonise protocols, exposure measurements, health effect measurements, and analyses in existing and future studies. The BREATHE Partnership has just been funded by the UK Medical Research Council in order to advance this agenda and to increase research capacity in Africa.

The strategic aim of the BREATHE-Africa Partnership is to develop and manage a coordinated portfolio of themed projects which link major well-resourced study sites and research teams focused on improving health among adults and children in Africa by reducing morbidity and mortality due to biomass fuel smoke exposure. We welcome new participants and discussion.
Can a polio-free India lead to an HIV-free India?

Christian Pitter

India—once considered the most challenging place on earth to end polio—is now on the verge of announcing the disease’s eradication. It has been more than 3 years since the last case of polio was reported and WHO is expected to declare India officially polio-free later this year. Its rapid success can be attributed to the Indian government and public policy leaders who made polio eradication a national priority. This news brings fresh hope that we can also conquer another serious public health threat in India—paediatric HIV. Both polio and HIV/AIDS significantly affect children and, with the right measures in place, both diseases can be prevented.

Like polio, HIV infection in children is often more severe than in adults. HIV-positive children suffer from more pronounced symptoms, including respiratory infections, sepsis, intestinal illness, skin disease, and meningitis. More than 145,000 children in India are currently living with HIV, most of whom contracted the virus from their mothers during pregnancy, childbirth, or breastfeeding.

Without medication, more than 80% of children worldwide living with HIV will die before the age of 5 years. Sadly, only a third of these HIV-positive children currently have access to the antiretroviral therapy (ART) that will allow them to remain healthy and survive to adulthood.

Prevention of mother-to-child transmission of HIV (PMTCT) services can protect babies from being infected with HIV. An HIV-positive woman can take medication that will prevent her from passing the virus on to her baby and support her own health. However, in India only 30% of HIV-positive pregnant women currently have access to lifesaving PMTCT services. This low coverage remains despite the Indian government’s substantial scale-up efforts at more than 12,000 HIV counselling and testing centres. India’s large population coupled with its vast geography continue make testing and identifying the estimated 38,000 pregnant women living with HIV in India a challenge.

India fought polio on several fronts, with the strong commitment of the government, partnerships with non-governmental organisations such as the Global Polio Eradication Initiative, and the massive on-the-ground efforts from health workers who administered vaccines, educated the community about the importance of getting children vaccinated, and rallied social support for the mission to end polio. The continued commitment of India’s government and its partnerships with international organisations is also crucial to ending the HIV epidemic.
Similar to the misconceptions and stigma associated with HIV testing and treatment that we currently face, many families in India didn’t trust vaccinators and didn’t understand the link between other public health initiatives and the mission to end polio. In response, health workers changed their approach—polio vaccines were integrated into water and sanitation and other health care initiatives.

We can do the same for HIV, not just in India, but worldwide. Taking a lesson from India and adapting our approaches to meet the cultural and societal needs of communities, in addition to health care needs, will be key to our success. The government is already working to integrate HIV testing, treatment, and PMTCT services into the current system.

The Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) and its partner, Solidarity and Action Against the HIV Infection in India (SAATHII), are collaborating with the Indian government to access unreached populations and integrate HIV services with maternal and child health programmes at private and faith-based hospitals. To date, the Indian government has tested approximately 8·8 million pregnant women for HIV and engaged with nearly 170 community-based agencies along with health workers and outreach organisers to improve follow-up with mother-baby pairs and reach those who are unable to access health facilities.

India’s successful campaign to end polio shows that it has the capacity, expertise, and infrastructure to conquer the HIV/AIDS epidemic. By expanding its partnerships with the private sector and international organisations, and accelerating efforts to implement public policies to treat and prevent HIV, India has the opportunity to serve as a global example of how, with high-level commitment and an integrated public health approach, an AIDS-free future is possible.
Mental health challenge won by Dream-a-World project

Joan Marsh

30 children in Jamaica with a history of difficult behaviour and school failure singing and dancing about life on an imaginary planet—is this really relevant to mental health care in the developed world? The answer from the judges of the Turning the World Upside Down Mental Health Challenge was a resounding “Yes”.

Professor Fred Hickling’s lively presentation, including Usain Bolt’s famous lightning gesture, had both style and substance. Smiling schoolchildren guarantee an impact, but these were children living in impoverished, disadvantaged, inner-city communities, selected for severe disruptive disorders and academic underachievement. In the 3-week Dream-A-World Cultural Therapy programme that took place during the summer of 2006, the 8-year-olds were asked to imagine (dream) a new world on another planet, name it and conceive its inhabitants, decide what to take or eliminate from their known world to this new one, how they would look, and what role they would play in governing the new world. They then worked with artists in bi-weekly sessions for 2.5 years, learning how to play musical instruments and compose songs, poems, and dances about their new world. Literacy and numeracy sessions were included, as were field trips. The programme proved so popular that other children were asking whether they had to behave badly in order to be able to join. All 30 children from the proof-of-concept pilot project passed the grade 6 achievement test and have entered accredited high schools in Jamaica. The project is now being scaled up to a further 100 children in four more schools across Kingston.

The aim of Turning the World Upside Down is to celebrate projects, practices and ideas from low-income and middle-income countries, which could be effectively applied to the major health challenges faced by high-income countries. Organized in collaboration with Mind, the Centre for Global Mental Health, New York University’s Program in Global Mental Health, the Institute for Health Improvement, the London School of Hygiene and Tropical Medicine, and Maudsley International, the Mental Health Challenge attracted 34 entries. The top four presented to a panel of “Dragons’ Den”-style judges, although these judges were very supportive and praise heavily outweighed any criticism. The real winner should be the mental health community, with an influx of new ideas, successful models of innovative care, and an emphasis throughout on engaging service users, their families, carers and communities from the start. We now all have the inspiration to Dream-a-World in which children and adults with mental health problems contribute to both the management of their own lives and to society.
Universal health coverage in Africa: where is civil society?

Biodun Awosusi

A strong civil society is essential for realizing the lofty goal of achieving universal health coverage (UHC). While the ongoing global discussions around UHC have largely focused on the role of government and development partners in designing and implementing risk pooling mechanisms that have the potential to improve access to essential health services, there has been little discussion on the key role that local civil society organizations (CSOs) play to ensure various communities support UHC and hold governments accountable.

Key global, regional and national stakeholders have endorsed UHC over the past 3 years. The UN General Assembly, World Bank Group, and WHO are among leading advocates for UHC as a plausible post-2015 goal, and a platform for sustainable development and poverty eradication by 2030. Major high-level declarations such as the Bangkok Statement, the Kigali Ministerial Statement, the Mexico City Political Declaration, Tunis Declaration, and the Recife Declaration reinforce the value of the concept. Other international conferences underscore the vital role of UHC in sustainable development. The UN Conference on Sustainable Development (Rio+20) recognized that UHC has the potential to increase economic growth, improve educational opportunities, reduce impoverishment and inequalities, and foster social cohesion. The 66th World Health Assembly held in May 2013 asserted that UHC is critical to health system strengthening in many countries and can ultimately improve health outcomes. It proposes that member nations “modify their health financing systems in the search for universal health coverage”.

Despite available declarations, most African countries are yet to demonstrate needed commitment towards UHC in policy design and implementation. Access to health care in the region is still predominately paid out of pocket, which prevents millions of people from accessing much needed health-care services, and results in many preventable deaths. The rhetoric on UHC should immediately be translated into well-designed policy that ensures everyone has access to the health-care they need without suffering catastrophic financial hardship.

Several communities of practice have been formed in the region to support practitioners and policymakers that are implementing reforms, including the Health and Harmonization in Africa Financial Access for Health Community of Practice, and the Joint Learning Network for Universal Health Coverage (JLN)—a practitioner-to-practitioner network led by representatives from nine countries in Africa and Asia. The JLN is unique in that it connects practitioners from around the globe—both virtually and in-person—to focus on the practical “how to” of implementing reforms.

While the JLN and other global efforts are important and complementary to advocacy and technical assistance activities, civil society actors—specifically in Africa—must add...
their voices to the national debates to ensure that UHC is rooted in the right to health, and that their governments are obligated to provide all citizens universal access to quality essential health services with financial protection. They must hold global stakeholders and national governments accountable on UHC-related commitments working in collaboration with practitioners.

The voice of civil society has been faint but growing. At the African Heads of States and Government Special Summit on HIV/AIDS, TB and Malaria in July 2013, African CSOs called for increased funding for health, accountability in health spending, and UHC, and urged governments to support the inclusion of UHC as the overarching framework for the health-focused post-2015 development goals.

In Ghana, the Universal Healthcare Coverage Campaign mobilizes multiple stakeholders through public events, media engagement, and lobbying to advocate for UHC. The campaign raises awareness about health insurance schemes and alternative tax-based and innovative health-care financing mechanisms to deliver universal health care.

In Ethiopia, Nigeria, and Kenya the “Health for All: The Campaign for Universal Health Coverage in Africa”, funded by the Rockefeller Foundation and led by Management Sciences for Health (MSH), supports existing government initiatives towards achieving UHC in collaboration with other regional and local partners. The campaign works closely with key stakeholders such as government agencies, law makers, development partners, associations of health workers, media houses, celebrities, students, and non-governmental organizations (NGOs) to raise awareness about risk-pooling pre-payment mechanisms that will improve access to health care for the populace, particularly women and children. It uses large-scale media campaigns, press conferences, town hall meetings, and other avenues to garner political and social support for health system reform that can facilitate UHC. In Ethiopia, the Health for All campaign works closely with the Ethiopian Health Insurance Authority to popularize national health insurance. As a member of the Health Financing Technical Working Group of Kenya’s Ministry of Health, the campaign will support the government to design a communications strategy when the UHC Strategy document is finalized. In Nigeria, the campaign is a key member of the Technical Working Group for a proposed Presidential Summit on UHC being planned by Federal Ministry of Health and National Health Insurance Scheme. The Summit is expected to achieve high-level endorsement for a comprehensive costed roadmap for UHC in Nigeria. It also mobilizes grass root support for health insurance.

Although these efforts are laudable, the voice of local UHC advocates must be louder on the continent to mount the needed pressure on governments to design and implement UHC-focused policies that build on the success of the health-related Millennium Development Goals. We need to mobilise political and social support for UHC at all levels as well as rally existing hesitant CSOs to join the emerging global movement for UHC.

Until civil society rises to this challenge, many families in poor rural communities in sub-Saharan Africa may continue to suffer financial hardship because of catastrophic costs of health care.

This is a joint post with Nkem Wellington, Communications Officer, Results for Development Institute, and Editor, UHC Forward; Jonathan Jay, Senior Writer, Management Sciences for Health; Dorah Nesoba, Health for All Campaign Coordinator, Kenya; and Barbara Ayotte, Director of Strategic Communications, Management Sciences for Health
Rethinking health in international development

Tim Crocker-Buqué

International development is at a crossroads. As the 2015 deadline for the Millennium Development Goals (MDGs) approaches ever closer, the cacophony of calls for what should be included in the post-2015 framework grows ever louder. Nowhere was this more evident than at the 2013 European Development Days conference that took place in Brussels, Belgium, on November 26–27. The conference provides a forum for non-governmental organisations (NGOs), funders, and government representatives to share ideas, lobby for policy, and seek out funding opportunities.

When considering global health, the system that developed from the MDGs focused on combating HIV, malaria, and tuberculosis, as well as reducing maternal and child mortality. The wider determinants of health were dealt with through goals on poverty reduction, water and sanitation, and gender equality. Progress towards these goals has been highly variable, which raised many questions during the conference. Debates were had around how the post-2015 framework could be used to increase the effectiveness of on global health interventions. The conclusion of the conference was that we must urgently tackle: infectious diseases, non-communicable diseases, under-5 mortality, maternal mortality, neglected tropical diseases, sexual and reproductive health, water and sanitation, food security, access to medicines, universal health coverage, and many others.

This type of issue-specific advocacy has created a system where some diseases matter more than others, meaning that if you have the right disease you can access treatment, but the health needs of the whole population are not addressed. Issue-specific NGOs require a goal to ensure their ongoing funding and thus have a conflict of interest when advocating for this kind of policy. What became clear over the 2 days is that the international development community does not have a robust way of conceptualising global health.

If the MDG targets are mapped out by life course (see figure 1, where red equals health goals and green the wider determinants of health), it becomes clear that the health goals are not comprehensive. Things look better for the wider determinants of health; however, progress towards these goals has been extremely variable. For example, indicators for poverty reduction have been skewed upwards through economic liberalisation in China, whereas far less progress has been made in sub-Saharan Africa. Although some policy objectives are relevant across the life course, it is clear that this is not a recipe for improving health for all. Issues such as mental health or risk-factor modification are not provided for at all, despite their associated morbidity and mortality. Yet, it should be possible for a system to provide for a safe birth, healthy childhood, productive adulthood, and dignified death.
To escape this disease-specific and demographic-selective approach, health in international development policy should be conceptualised as improving whole population health in low-income and middle-income countries across an individual’s life course using a public health approach. The figure above, right, shows the targets relevant to health as proposed in the High Level Panel’s Report on the Post-2015 Agenda mapped out under public health domains.

The wider determinants of health are well provided for by the proposed goals of the High Level Panel’s Report on the Post-2015 Agenda. However, public health is highly deficient, lacking any robust recommendations to ensure provision of health services, infrastructure, or human resources. The same is true for health improvement, with almost no focus on tackling modifiable risk factors that contribute to the burgeoning non-communicable disease epidemic. Although health protection policy has been improved compared with the MDGs, it remains limited.

Sadly, the power of the NGOs to lobby for their areas of interest was on clear display at the European Development Days conference. It seems unlikely that there will be any significant changes to the proposals put forward by the High Level Panel and so the current system of fragmented health policy targets will be perpetuated. However, glimmers of hope appeared from leaders of sub-Saharan African countries, including from Senegalese Member of Parliament Magatte Mbodj who spoke passionately about a new programme to achieve universal medical coverage, including free health care to all under-5s, pregnant women, and elderly people.

However, all is not lost—these goals are only the proposed ends of international development. The global health community must now be forthright in advocating for means to achieve them that are inclusive, comprehensive, and effective, encompassing all domains of public health practice to ensure that we make better progress post-2015.

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Figure 1: A diagram to show the MDG policy themes mapped by life course
Red=health goals, green=wider determinants of health.
Pope Francis blesses breastfeeding

Chessa Lutter

Breastfeeding gained a new ally last week, perhaps a more important one than any so far. Last Sunday, while baptizing infants in the Sistine Chapel, Pope Francis told the babies’ mothers: “If they are hungry, mothers, feed them—without thinking twice—because they are the most important people here.”

This was the second time in less than a month that the Pope had spoken publicly and approvingly about breastfeeding. In an interview with the Italian newspaper La Stampa, the Pope described an encounter with a mother and her wailing newborn baby during a Wednesday General Audience. “I said to her, ‘Madam, I think the child’s hungry,’” he recalled. Though “she was shy and didn’t want to breastfeed in public,” he prevailed on her to “please give it something to eat!”

The Pope’s support for breastfeeding fits well with long-standing public health recommendations. WHO and independent experts have often noted that many women quit breastfeeding early because of difficulties in doing it outside the home. The Pope’s message to breastfeed “without thinking twice” could work miracles if it led to greater support for the practice in health facilities, workplaces, and public places around the world. It could achieve what WHO and other public authorities have long sought: a significant increase in the number of infants who are fed only breast milk for the first 6 months of life and breastfed with complementary foods up to 2 years of age or longer.

Currently, breastfeeding—a natural, low-cost, and evolutionarily rooted ritual that can better bond mother and infant—is shockingly infrequent in many countries. Globally, only about a third of babies are exclusively breastfed for 6 months, and this drops to less than a fifth among babies 4-5 months old. Supportive policies and programmes can markedly affect exclusive breastfeeding percentages. In 1993, Ghana and nearby Mali had reasonably similar rates (~8%) of exclusive breastfeeding. Yet by 2005, their rates differed by 15 percentage points after Ghana passed legislation to prevent the inappropriate marketing of infant formula, changed hospital practices to better support early breastfeeding, trained health workers, involved fathers, and launched media campaigns. Cambodia improved its rates of exclusive breastfeeding by a phenomenal 50 percentage points over 5 years. In Brazil, legislative, policy, and programmatic measures increased exclusive breastfeeding from 3% to 43% between 1986 and 2006. Yet over roughly the same period in Mexico, exclusive breastfeeding declined 5 percentage points.

The chief obstacles to more widespread breastfeeding are infant formula makers’ inappropriate marketing of their product as a modern, safe, and ideal way to feed babies and the failure of businesses, health-care providers,
and communities to help mothers to begin breastfeeding early and continue as their babies grow and mature. Equally important—as observed by Pope Francis—is the embarrassment many women feel about breastfeeding in public, because of the social ostracism that all too often occurs when they do.

Breastfeeding has important short-term and long-term benefits for both mothers and babies. For babies, it prevents common infections and reduces mortality, even in developed countries. Later in life, breastfed children score 3–5 points higher on standard IQ tests and are at lower risk of overweight and obesity. Breastfeeding also reduces mothers’ risk of breast and ovarian cancer. It helps them to lose extra weight gained in pregnancy and serves as a “natural” contraceptive. Moreover, breast milk, as a naturally renewable resource, protects the environment. It requires no fossil fuels for packaging and transport, no bottles for feeding, no fuel to prepare. It also reduces the health-care costs associated with treating the many illnesses it helps to prevent.

Much is known about how to improve breastfeeding. Countries that have implemented the appropriate mix of regulation, policies, and programmatic interventions have seen dramatic increases. Yet breastfeeding has never received the high-level political attention of other public health imperatives such as vaccination and the prevention and treatment of malaria, tuberculosis, and HIV.

Perhaps breastfeeding is seen as so easy and so natural that it needs no funding to promote it. Perhaps the impossibility of mass marketing of breast milk—which cannot be patented, branded, or sold—has made it the foundling of public health interventions. In cultural and behavioural terms, breastfeeding has clearly been the victim of misguided criticism that labels mothers who breastfeed in public as immodest.

More could be done if the leaders of other world religions followed the Pope’s example, sending simple and clear messages in support of breastfeeding. Leading sports figures, singers, and actors could do the same. Politicians have a special role to play in putting forth legislation that curtails the inappropriate marketing of infant formula, provides for longer maternity leaves, and protects breastfeeding in the workplace.

The world needs more advocates for breastfeeding like Pope Francis. By encouraging mothers with hungry babies to nurse them in the Sistine Chapel, the Pope sent a clear message that women should breastfeed their babies whenever and wherever they want. It is now everyone else’s responsibility to make sure this happens.
Making donations of medical equipment work

Jane Cockerell

Many hospitals in low-income and middle-income countries lack the functional medical equipment they require to diagnose, monitor, treat, and rehabilitate patients. I’m not the first person who has walked into a health facility in a developing country and been instantly struck by the absence of medical equipment (or the sheer quantity that is broken or unused) and thought about the challenge this must pose for frontline staff.

Planning for the maintenance and management of equipment is essential at every level of the health service and across every specialty. Yet it is an area of health system strengthening that is all too often neglected.

The facts speak for themselves. At least 40% of medical equipment in developing countries is out of service (some studies cite 50-80%) and that doesn’t account for what equipment should be present and isn’t. By comparison, less than 1% of medical equipment is out of service in high-income countries.

Why is it that so much equipment is out of service and what can be done about it? There is a long list of reasons, which include:

- Weak policies and ad-hoc planning at the health facility and health system level
- Weak procurement and regulatory systems
- No technical personnel included in procurement proceedings
- No trained technicians, and therefore a lack of user training (partly the responsibility of technicians, partly of the supplier of medical equipment)
- A lack of spare parts and consumables
- A shortage of tools, test equipment and service manuals
- Inadequate budgets for operating and maintaining the equipment
- Equipment not appropriate to setting
- Challenges coordinating equipment from a wide variety of geographies and donors, both large and small.

What can we do to improve this situation from a donor perspective? First of all, we can make donations of equipment responsibly. It’s too easy to say that we shouldn’t donate at all. Many health institutions in developing countries rely significantly on medical equipment donations. It is difficult to know exactly how much, but WHO estimates that up to 80% of medical equipment in developing countries is donated or funded by international donors and foreign governments.

When donations are well planned and coordinated, when equipment is appropriate to the setting, delivered with the manuals, and the users and technicians are properly trained, they can have a very positive impact. Unfortunately, many are not. It is estimated that only 10–30% of donated medical equipment is actually put into service in the recipient’s institution.

Engineers from Guy’s & St. Thomas’, NHS Foundation Trust delivering training at Ndola Central Hospital, Zambia.

Jane Cockerell is Chief Executive of the Tropical Health and Education Trust (THET), a specialist global health organisation that educates, trains, and supports health workers through partnerships.
“The donation of medical equipment is a good thing, but at times I feel we’re not given the opportunity to sit with the donor and ask some questions, little things they overlook like the issue of the manual. To us that’s very, very important because it’s from the manual that we can be assisted and even come up with a preventive maintenance plan and other issues like educating the end users.”
— Lupiya Kampengele, Senior Medical Equipment Technologist, Ndola Central Hospital, Zambia

THET has recently developed a toolkit to provide practical UK-specific guidance to individuals and organisations planning to donate medical equipment overseas. The hope is that it will assist people to evaluate whether or not to donate medical equipment in the first place, and if they decide to proceed, how to do so effectively.

One of the biggest stumbling blocks with donations is that they don’t normally happen within the context of an ongoing partnership. As a result, little consideration is taken of the availability of local technical expertise to provide maintenance. It is here that the health partnership model of training and capacity development through long-term links with health-care institutions such as universities and professional colleges could have a role to play. Health partnerships by their very nature tend to look at the broader picture. They are well positioned to execute successful donations through having a good understanding of the needs, ongoing dialogue, shared objectives, and the ability to engage biomedical engineers and provide training.

Responsible donations are only one piece of the puzzle. Equipment alone, without the support and necessary structures behind it, cannot be expected to amount to a sustainable solution. Maintenance systems run by well trained personnel and national medical equipment management policies are both essential. Yet these two critical elements are often overlooked when medical equipment is being planned for and funded in developing countries. A study of biomedical engineering services in low-resource settings found that 85% of African hospitals surveyed reported difficulty finding qualified engineers locally; 73% reported difficulty finding qualified technicians locally. These figures were high for Latin America and Asia as well: 78%/79% and 60%/65% respectively.

Our vision for biomedical engineering in developing country health systems is that it grows as a profession and that biomedical engineers and technicians become recognised as human resources for health. They are a crucial group of personnel within a hospital and a health system and it is essential that they are more involved in decision making and are given the resources and training they need to be able to contribute more efficiently to maintaining and managing equipment.
Harnessing the hidden workforce: informal providers in India and elsewhere

Meenakshi Gautham

One of the phenomena of Asian health systems we will be looking at in two sessions at the Health Systems in Asia 2013 conference in Singapore this month is the huge contribution of the informal provider—the independent and unregulated medical practitioner variously known as village doctor, traditional healer, drug seller, quack, and dozens of other names. In India, two-thirds of human resources and health facilities are in the private sector, and the shocking truth is that informal providers are estimated to account for over 50% of the private health sector.

The degree of informality in other countries is not as well documented, but there is evidence that it is also common. For example, in rural Bangladesh, over 95% of private providers are informal. And a review of published literature on informal providers in developing countries reveals utilization rates that range from 9% to 90% of all health-care interactions. People patronize informal providers because they work long hours, provide doorstep services, and are often the nearest health providers who are accessible on foot. They are affordable and often willing to provide treatment on credit. Most importantly, they are usually a part of the communities where they work.

The irony is that informal providers are typically not on the radar of those mandated with the task of increasing access to health care for the poor—with the exception of the pharmaceutical industry, which has developed wide distribution networks with them in some countries.

Informal providers are largely ignored by their own governments, donors, and WHO. There is little attempt to monitor and improve their quality of services or to harness their proximity and patient relationships to deliver important public health interventions.

To advance the understanding of this neglected group, we decided to look at informal providers in two areas of India—Tehri Garhwal, in the mountainous state of Uttarakhand in the north, and Guntur, on the coastal plains of Andhra Pradesh in the south. We wanted answers to such questions as: How common are informal providers? How educated, trained, and organized are they? What kind of interactions do they have with qualified doctors? What is the quality of their services?

When we began our study of informal providers, we imagined that providers in the two areas would be quite similar—after all, they live and practise in the same country. In fact, our study revealed surprising differences (see table).

We had expected to find more informal providers in Uttarakhand, where road and transportation infrastructure is poor, population density is low, and professional doctors...
are in short supply. On the contrary, we found that informal providers were more abundant in the more developed Andhra Pradesh, which also has more doctors, especially private ones.

Nearly all informal providers in the southern site had worked as doctors’ assistants before setting up independent practices. They maintained links with these doctors, received commissions, and helped new doctors set up their practices.

Informal providers in Andhra Pradesh were highly organized. They had formed strong associations that federated to become state level associations. 22,000 out of an eligible 55,000 informal providers had been trained in basic health care.

Unlike the informal providers in Uttarakhand, those in the south faced no hostility from a benevolent state or from doctors, with whom they shared win-win relationships. Informal providers in Uttarakhand, on the other hand, reported frequent harassment by the state health department, even though there is a desperate need for more health providers.

Informal providers in Uttarakhand were better educated: 43% had graduated college and quite a few had diplomas and certificates in health disciplines such as pharmacy or laboratory technology. They worked mainly out of fixed clinics. Only 10% of the informal providers in Andhra Pradesh had graduated college; most went on daily rounds from house to house, village to village.

Despite their differences, there was one remarkable similarity: their observed knowledge of the management of fever, diarrhoea, and respiratory conditions was “reasonably high”—71% of recognized protocols in Uttarakhand and 73% in Andhra Pradesh. This finding contrasts with that of a recent study reporting that formal public and private providers in India typically misdiagnose common illnesses and frequently prescribe incorrect treatments.

We are convinced that the findings of this study in India, as well as previous research in other countries, offer a strong justification for more discussion about how to manage and harness informal providers, if not clear answers for how to engage them. Few health-care programmes are overtly working with informal providers, and even fewer governments. If we are serious about improving health systems, IPs must be acknowledged by governments, donors and the international health community—as they already are by millions of their trusting patients.

<table>
<thead>
<tr>
<th>Andhra Pradesh</th>
<th>Uttarakhand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population/terrain</td>
<td>Densely populated, coastal plain with good roads</td>
</tr>
<tr>
<td>Presence of qualified doctors</td>
<td>More doctors (108)</td>
</tr>
<tr>
<td>Links with doctors</td>
<td>Most began careers working for doctors and have retained close links to them</td>
</tr>
<tr>
<td>Education</td>
<td>Less educated (only 10% have graduated college)</td>
</tr>
<tr>
<td>Organization</td>
<td>Well organized</td>
</tr>
<tr>
<td>Business model</td>
<td>Practice is carried out door-to-door</td>
</tr>
<tr>
<td>Medicines they prescribe</td>
<td>Mainly Western medicine</td>
</tr>
</tbody>
</table>

This is a joint post with Gina Lagomarsino, chief operating officer at the Results for Development Institute, which supported the research through the Center for Health Market Innovations.
Time to put the spotlight on the hidden HIV/AIDS epidemic in IDUs in sub-Saharan Africa

Jennifer Anyanti

When people think of the HIV/AIDS epidemic in Africa, often the image is one of a generalised heterosexual epidemic. Yet, whilst injecting drug use has long been acknowledged as a driving factor in the epidemics in eastern Europe and central Asia, there is an increasing awareness of the rise of the problem in sub-Saharan Africa. And this is certainly the case in Nigeria, Africa’s most populous country and one that has been hard hit by the disease, with the second highest burden of HIV/AIDS worldwide. Nigeria has been hard hit by the HIV epidemic, with an adult HIV prevalence of around 3.6%—some 3.9 million Nigerians and 220,000 children under the age of 15 years are living with HIV and an estimated 2.5 million children have been orphaned by the disease.

Injecting drug use is now recognised as a risk factor for HIV infection in at least 16 countries in sub-Saharan Africa and five countries in north Africa. Although Europe remains the largest market for Afghan opium, a substantial portion of opioid exports remain behind at transit locations in sub-Saharan Africa, fuelling local consumption markets. Heroin use now occurs in most large towns in Kenya and Tanzania, and is reported to be on the increase in Côte d’Ivoire, Kenya, Mauritius, South Africa, Ghana, Democratic Republic of Congo, Guinea Bissau, and Nigeria. But getting hold of comprehensive data on the magnitude of injecting drug use is difficult - data are only available from a third of countries in sub-Saharan Africa.

Nigeria was one of the first African countries to estimate HIV prevalence among injecting drug users (IDUs) in 2000—at that time HIV prevalence among IDUs was 11%. A recent study led by the Federal Ministry of Health in Nigeria with technical and financial support from the Enhancing Nigeria’s Response to HIV (ENR) consortium partners Society for Family Health and Population Council clearly shows the higher burden of HIV among IDUs across the country. This burden is classified as a concentrated epidemic in three of the six states where the study was conducted. The ENR programme supports the Federal and State governments of Nigeria to characterise the epidemic within the country and in high prevalence states, through specialised studies such as the Integrated Bio-Behavioural Surveillance Survey (IBBSS), a study that interviews over 20,000 individuals in high-risk groups in Nigeria such as female sex workers and IDUs. The programme also assists the governments and civil society partners to develop evidence-informed programmes based on data collected.
within the states from surveys, census data, and mapping studies.
As is so often the case, women bear the brunt. HIV prevalence for female IDUs was five to 15 times higher than for male IDUs in most of the states that were surveyed. This not only reflects women’s dual exposure through both needle sharing and unprotected sex (and the overlap between sex work to pay for their drug use and other pressing survival needs), but the high-risk practice of “flashblood”—the deliberate sharing of a syringe full of blood passed from someone who has just injected heroin to someone else who injects it in lieu of heroin. It is a practice often used by women who cannot afford to purchase heroin.

There are well-documented effective harm reduction interventions to help tackle the spread of the epidemic in these populations, including needle-exchange programmes, opioid substitution therapy, and counselling. But in a global review of 148 countries, coverage of needle and syringe programmes, substitution therapy, and antiretroviral treatment among IDUs was lowest in sub-Saharan Africa. In Nigeria, very few groups are implementing HIV prevention programmes for IDUs: national prevention messages in mass media and at health facilities are a “one-size-fits-all” approach, focused on sexual risk behaviours. They stand very little chance of reaching IDUs who are a hidden and stigmatised population—and female IDUs doubly so.

It is clear that if we are to meet the goals of the World AIDS Day theme—Getting to Zero—there must be concerted efforts to improve the available data on IDUs in countries and across the region as a whole; monitoring and research among this population must be intensified; and policy and programmatic interventions must be bolstered to address the very specific challenges the problems are posing in sub-Saharan Africa. Only then will we be able to most effectively guide resource allocation for HIV prevention and treatment and deliver the programmes that stand the best chance of tackling the injection drug use that is helping to drive the HIV/AIDS epidemic in Africa.

This is a joint post with George Eluwa, Deputy Director, Operations Research at the Population Council Nigeria.
The global HIV epidemic starts to go grey

Joel Neigin

Earlier this month, UNAIDS released a long-awaited supplement to its annual epidemic update, focusing on HIV among older adults. For decades, HIV prevalence has been reported only on the basis of data for those aged 15–49 years, a hangover of the fact that much early data collection was through antenatal care sites and through demographic and health surveys focused on maternal and child health. Those living with HIV aged 50 years and older were consequently ignored and neglected.

Over the past few years, a small group of researchers and advocates have taken to heart Phillip Setel’s passionate exhortation to “make everyone count by counting everyone” and have started to gather data on HIV in older adults (as those aged 50 years and older are most often called). Multiple estimates have put the number of people living with HIV aged 50 and older in sub-Saharan Africa at 3 million.

The ageing of the HIV cohort in Africa mirrors what has been seen in developed countries; in the USA, by 2015, 50% of people living with HIV will be aged 50 years or older. This is a by-product of the success of antiretroviral treatment (ART), with those on treatment regaining near-normal life expectancy. As new infections decline (partly due to treatment access) and those living with HIV live longer, the ageing of the HIV cohort is an unavoidable reality.

What are the implications of the ageing of the HIV cohort? First of all, most prevention messaging over the past decade has been targeted to adolescents and young adults. Because more and more of those living with HIV are older, it is time to adapt prevention tools and messages to older adults. Despite ongoing ageist stigma, older adults are still sexually active. At the same time, levels of awareness and HIV-related knowledge are significantly lower among older adults. In the field, most counsellors working on voluntary counselling and testing programmes are relatively young. That means a reality of 60-year-old women talking to 22-year-old men about sexual behaviour and attitudes—perhaps not the best model for appropriate and age-friendly services.

In most developing countries, older adults are more likely to live in rural areas, to be poor, and to have less access to health services. This limits their access to treatment. However, in some ART cohorts, 15% or more of those on treatment are aged 50-plus. For older adults, timely initiation of ART is critical because their immune systems seem to recover more slowly than those of younger adults. More can be done to target older adults specifically to ensure their access to treatment and to support their adherence. Travel vouchers, older adult peer support groups, and improved messaging could help to end the neglect of older adults.

One of the emerging and critical realities of ageing with HIV is co-morbidities. As people age, they are more likely
to have chronic conditions such as diabetes, angina, arthritis, and stroke. This is especially true for those living with HIV. As the HIV cohort ages, these comorbidities will have profound impacts on developing country health systems, which will have to address a double burden.

Despite these epidemiological, preventative, and clinical challenges, it has taken to late 2013 for the acknowledgement of the ageing of the epidemic in developing countries. Fundamentally, the fact is that 50 is not that old! Many of our community leaders, business people, politicians, teachers, family, and friends are over 50. The current situation of not even counting them as part of the epidemic was clearly inappropriate and unsustainable.

A bit of grey hair makes one look distinguished—it is time for the global HIV community to stop dying its hair and embrace its ageing. Older adults need to be included in the measurement of the epidemic as well as in its response—as actors, stakeholders, and leaders. I am encouraged by UNAIDS’s supplement and hope that it is a harbinger of greater attention to this issue by policymakers and researchers alike.
Decision making in the midst of uncertainty

David Dowdy

If there is a hallmark of global health decision making, it is uncertainty. Data from high-burden, resource-limited settings are often sparse, and the settings under which interventions are implemented are heterogeneous. Nevertheless, decisions regarding implementation of public health interventions must be made on short time scales and in diverse settings. Here we argue that, by focusing narrowly on the uncertainty in empirical data without considering uncertainty in translating those data to heterogeneous settings, the global health scientific community is selling itself short.

To be useful to decision makers, research data must be both internally and externally valid; that is, it must accurately represent the process and population under study (internal validity), but it must also generalize or translate to other situations (external validity). A study that fails to portray the population under study accurately is useful to nobody, but one whose results cannot be generalized to other settings is no more helpful to the broad global health community. Uncertainty is inherent in establishing both internal and external validity, but the scientific community is much more comfortable in dealing with the former—for example, through use of epidemiological techniques for minimizing bias and performance of traditional statistical analysis. If we are to make our work useful to global decision makers, however, we must become more comfortable in methods (eg, translational models) for generalizing results to an array of specific decision-making contexts, and for dealing with the uncertainty inherent therein. We refer to this here as “translational uncertainty.”

We highlight two forms of this translational uncertainty. The first involves translating convenient summary statistics into outcomes that are more meaningful for decision-makers. For example, consider a systematic review in The Lancet Global Health of the effect of daily iron supplementation on health in children aged 4–23 months. The risk ratio for anaemia in children receiving iron supplementation versus not (0·61) may be considered to have an underlying statistical distribution (eg, normal), which enables the construction of a 95% confidence interval (0·50–0·74). But that statistically rigorous confidence interval says nothing about the true policy question: “If iron supplementation was scaled up to a certain level of coverage, in a local setting with a given prevalence of anaemia by age, how many children might be spared the corresponding morbidity?”

The second form of “translational uncertainty” involves generalizing results from one setting to others. Take, for example, a recent article that evaluates the effectiveness of a complex HIV prevention intervention (Avahan) among South Indian sex workers in reducing HIV infections. The authors conclude that Avahan averted over 600,000 HIV infections over 10 years (95% uncertainty range 290,000–1,193,000). This result may be useful to the Bill and Melinda Gates Foundation in justifying their support of this impressive intervention, but what most local decision-makers are interested in is the number of infections averted in the context of their local setting, and this number cannot be derived from the published result.

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To be useful to decision makers, research data must be both internally and externally valid; that is, it must accurately represent the process and population under study (internal validity), but it must also generalize or translate to other situations (external validity). A study that fails to portray the population under study accurately is useful to nobody, but one whose results cannot be generalized to other settings is no more helpful to the broad global health community. Uncertainty is inherent in establishing both internal and external validity, but the scientific community is much more comfortable in dealing with the former—for example, through use of epidemiological techniques for minimizing bias and performance of traditional statistical analysis. If we are to make our work useful to global decision makers, however, we must become more comfortable in methods (eg, translational models) for generalizing results to an array of specific decision-making contexts, and for dealing with the uncertainty inherent therein. We refer to this here as “translational uncertainty.”

We highlight two forms of this translational uncertainty. The first involves translating convenient summary statistics into outcomes that are more meaningful for decision-makers. For example, consider a systematic review in The Lancet Global Health of the effect of daily iron supplementation on health in children aged 4–23 months. The risk ratio for anaemia in children receiving iron supplementation versus not (0·61) may be considered to have an underlying statistical distribution (eg, normal), which enables the construction of a 95% confidence interval (0·50–0·74). But that statistically rigorous confidence interval says nothing about the true policy question: “If iron supplementation was scaled up to a certain level of coverage, in a local setting with a given prevalence of anaemia by age, how many children might be spared the corresponding morbidity?”

The second form of “translational uncertainty” involves generalizing results from one setting to others. Take, for example, a recent article that evaluates the effectiveness of a complex HIV prevention intervention (Avahan) among South Indian sex workers in reducing HIV infections. The authors conclude that Avahan averted over 600,000 HIV infections over 10 years (95% uncertainty range 290,000–1,193,000). This result may be useful to the Bill and Melinda Gates Foundation in justifying their support of this impressive intervention, but what most local decision-makers are interested in is the number of infections averted in the context of their local setting, and this number cannot be derived from the published result.
Focusing on uncertainty in empirical point estimates while failing to examine these translational effects while is “missing the forest for the trees.” For example, if an imple-mented Avahan-type of intervention is likely to have only 10% of the impact as that seen in the original demonstration, the drivers of that 0.1 multiplication factor are far more important to understand than the uncertainty range around the impact of the Avahan intervention itself. Similarly, if an iron supplementation intervention is likely to improve the lives of only 5% of children if implemented at a given coverage and in a specific population, this is as important to recognize as the confidence interval around the global risk ratio (0.5–0.74). Translational models—for example, models that use data to represent other populations and evaluate the potential epidemiological impact or cost-effectiveness of deploying interventions such as Avahan and iron sup-plementation—cannot only systematically and quantifi-cably describe the process of translation, but also characterize the uncertainty inherent in generalizing empirical results to the decision-making process. Such translational uncer-tainty may be much greater than the statistical uncertainty describing the internal validity of an empirical study, but we as a scientific community must be willing to grapple with it.

The most common responses by global health scientists to the “problem” of translational uncertainty are either to expect such uncertainty to be managed by similar methods as are appropriate for empirical uncertainty, or to declare that translation and generalizability are outside the pur-view of the scientific endeavour. Why do so many scientists see translational uncertainty as a problem rather than as an opportunity?

First, we are not, as a global health scientific community, comfortable with methods for assessing translational uncertainty. Evaluating translational uncertainty requires us to simulate results under heterogeneous circumstances, not sample from underlying populations that can be assumed to follow statistically convenient distributions. The traditional statistical paradigm of hypothesis testing is therefore not generally applicable, and, as a result, the familiar statistical methods and metrics of uncertainty (eg, p-values and 95% confidence intervals) are usually not appropriate.

Second, scientists and decision-makers tend to have dif-ferent views on uncertainty itself. Scientists generally view uncertainty as a nuisance that should be minimized in order to reduce variance, whereas decision-makers view uncertainty as an intrinsic part of the world that should be highlighted in order to appropriately manage it. Empirical uncertainty lends itself to minimization through statistical modelling and “big data” approaches, but translational uncertainty cannot be reduced through larger sample sizes or more complex statistical models. Data needed to evalu-ate external validity (eg, local disease incidence or ability to implement an intervention) are often sparse, meaning that excessively complex models may end up overfitting these data and generating (rather than reducing) bias. Until these additional data are collected, simple models that highlight the corresponding data gaps may be more effective in helping to manage the resulting uncertainty (for example, by allowing local decision makers to input a range of values and see the impact of such variation on results). However, simulation ranges that appropriately convey the degree of translational uncertainty may be so large as to be distaste-ful to scientists who have grown accustomed to seeing tight confidence intervals in any high-impact publication.

We argue that the academic global health community should increase its efforts to develop and publish models that help translate empirical data to decision makers. We must continue to produce internally valid empirical data, but without models to systematically generalize those data to decision-making contexts, policy makers are left to make those decisions using tools (eg, backs of envelopes and dis-cussions with advisers) that are opaque, unsystematic, non-quantitative, and prone to corruption. Avahan may avert over 600,000 HIV infections in South India in 10 years, but what would the impact be of a more feasible intervention over 3 years in Nigeria? Iron supplementation may reduce the risk of anaemia by 35%, but how many children might be spared anaemia-induced fatigue if a supplementation programme were adopted to 50% coverage in a district in Bangladesh? These questions can be directly addressed by the scientific community, but only if that community becomes more comfortable with the methods of evaluat-ing translational uncertainty (including wider uncertainty ranges) and begins to see that uncertainty as something to highlight and manage rather than to fear.

Global health decision makers routinely manage trans-lational uncertainty when generalizing empirical data from one setting into a decision-making process in another. The discomfort that we in the scientific community have with translational uncertainty is the same discomfort that decision makers confront every day. But those decisions must be made; the question is whether the scientific community wishes to have a seat at the decision-making table. If we do, we must begin to accept translational uncertainty as within, rather than outside, the scope of scientific endeavour. Focusing only on internally valid outputs without understanding how those outputs might be generalized is a failure to discharge our duty to decision makers and a detriment to the world’s health.

This is a joint post with Jason R Andrews.
Community health workers and uptake of family planning in Africa

Biodun Awosusi

The International Family Planning conference is taking place in Africa, a continent with huge unmet needs for contraception and an acute shortage of health workers. At the same time, the Third Global Forum on Human Resource for health has just concluded in Brazil, with a focus on the role of human resource for health in achieving universal health coverage and the post-2015 development agenda. This is perhaps the best time to consider Africa’s rising population and the vital role health workers can play to improve access to family planning information and services.

There are about 1·1 billion Africans today; this will double by 2050. A recent report by Population Reference Bureau (PRB) shows that Nigeria’s population will exceed that of the USA by 2050, when there will be 440 million Nigerians but only 400 million Americans. According to Carl Haub, a PRB senior demographer, “Sub-Saharan Africa has, without a doubt, the greatest population growth potential of any region. The projection today is that it will increase by about two and a half times.”

The fertility rate of the region is relatively high. According to the PRB report, the region has the top ten countries with highest fertility rates in the world. The average number of children during the lifetime of an African woman is 5·2. The fertility rate in Niger (7·6) is the highest in the world; this is six times that of Singapore and four times that of the USA.

If the projections become real, Africa has a great opportunity for economic growth. It will likely become more attractive for investments by multinationals than east Asia. However, the population expansion will increase pressure on governments for jobs and social services, particularly education, health care, and security. A high fertility rate drives poverty and hunger and increases maternal and child mortality. It limits available resources to pay children’s schools fees and provide good nutrition.

A rising population without a commensurate increase in the capacity of the health system to handle demands can be catastrophic. According to the WHO, although the region is...
responsible for a quarter of the global burden of disease, it has less than 3% of the global population of health workers. A massive exodus of skilled health professionals from Africa worsens this shortage. If nothing is done now to assuage these challenges, investments in Africa’s health system will result in great losses and it may increasingly become difficult to achieve universal health coverage in the region.

There are substantial benefits to population growth for the region, but African leaders must take bold steps to tame this growth. This is in the best interest of the populace, particularly the poor people in rural areas and urban slums. “One of the main things (to do to address the situation) is to include family planning services with maternal health. And inform couples about the different methods and what they can do to either reduce the number of children or to space births out,” Haub proposes.

Many African governments and development partners are already investing heavily in family planning. One example is the creation of FP2020, a platform to mobilize resources to ensure an additional 120 million women and girls in the world’s poorest countries have access to voluntary contraceptive information and supplies to by 2020. In Nigeria and Kenya, there is increasing interest in family planning programmes focused on educating the public, especially women, about the benefits of child spacing and a family size that can ensure good quality of life. The government of Rwanda has made family planning a national priority.

Despite these efforts, there are significant barriers to uptake of family planning services. Many families are unwilling to space children. There is limited number of facilities where people get birth control information. Ethnic and cultural traditions and practices that promote large families are greater hurdles. There is significant prestige associated with having a large family. Parents with more children have greater economic security during old age than those who have fewer.

Access to family planning information and services in rural Africa can be facilitated by community health workers (CHWs). CHWs are trusted members of a community who are selected to undergo basic medical training so they can provide health education and treatment of common ailments. There is ample evidence to show that they can fill the gap of shortage of health personnel in Africa.

There is huge unmet need for family planning in sub-Saharan Africa. About a quarter of couples who would like to space births by 2 years do not use a contraceptive method. This need could be met by providing timely contraception information and services to families at health facilities or in the communities. Community-based health workers can help women get contraceptives and also ensure men are involved in family planning.

CHWs can also help to reduce the cultural barriers to uptake of family planning services in rural Africa. They understand the social dynamics of their communities and can effectively carry out counselling and distribution of condoms and birth control pills with limited resistance from members of the community. They are regarded as the “best buy” in global health as they promote community acceptance of contraceptives and use. Evidence shows that, with proper training and supervision, they can deliver quality services including distribution of injectables, which have become increasingly popular among African women.

Investment in family planning requires adequate funding of community-based family planning programmes, with expanded roles for CHWs. This is a smart investment in the best interests of all as Africa’s population rises.
Integrated child marriage prevention and adolescent family planning

Anita Raj

As healthcare experts and practitioners from around the world gather this week for the International Conference on Family Planning in Addis Ababa, Ethiopia, we must face up to the ongoing practice of girl child marriage, the single greatest impediment to maternal and child survival around the world.

Last week, UNFPA released its State of the World Population 2013 report, highlighting the ongoing high rates of adolescent pregnancy and childbirth that compromise maternal and child survival globally. Most adolescent births (95%) occur in the developing world, where 20 000 girls younger than 18 years give birth every day and 70 000 adolescents die from maternal health complications each year. More than one in four of these girls who give birth is younger than 15 years, and their risk of death and other complications is even greater than that seen for older adolescents. Most adolescent births in the developing world occur within marriage.

Despite global declines in the phenomenon, many world regions remain affected by girl child marriage. Countries within sub-Saharan Africa, particularly in west and central Africa, have the highest rates of girl child marriage. South Asia has the greatest number of child brides. Although child marriage rates are relatively lower in Latin America and the Caribbean, it is the sole region where births to girls under age 15 have risen instead of declined. These regions are also affected by low access and use of contraception.

Growing research documents that healthy timing and spacing of pregnancies, achieved via effective contraception use, reduces maternal and infant mortality. The combination of child marriage elimination and adolescent contraception may produce the most dramatic effects, according to the research that we have undertaken in South Asia at the Center on Gender Equity and Health. For example, analysis of data from young mothers aged 15–24 years in India and Pakistan demonstrates that the combination of adolescent (<18 years) motherhood and short (<24 months) birth spacing accounted for more than 20% of infant deaths to these young mothers, or more than 200 000 infant deaths in 2012. These findings highlight the importance of integrated child marriage elimination efforts with those focused on adolescent family planning.

To be effective, however, integration of efforts that focus on adolescent family planning and reducing girl child marriage must consider the context in which these marriages occur. The path to child marriage and adolescent childbirth can vary by and even within countries. Largely, discussions...
of girl child marriage assume no sexual activity prior to marriage, such that pregnancy and childbirth will only occur post-marriage. In such cases, a delay in age at marriage will produce a delay in age at first childbirth. Non-dating cultures like those in South Asia are more likely to see this trajectory with child marriage.

In parts of sub-Saharan Africa and Latin America, however, where dating cultures are more common, opportunity for consensual premarital sexual relations may be more likely to occur, even if pre-marital sex is not socially sanctioned, and may result in a pregnancy. Social taboos against premarital sex and births outside of marriage can then result in marriage of minors. In such cases, delay of marriage will not prevent a pregnancy, although it may prevent subsequent pregnancies for these minor-aged mothers.

Regardless of the pathway, lower rates of consistent and effective contraception use among adolescents drive adolescent pregnancy. However, the context of marriage supports regular sexual activity and motherhood in ways not seen for women and girls outside of marriage. For these reasons, girl child marriage across cultures elevates risk for adolescent childbirth. Of course, effective interventions would need to consider the different motivations for girl child marriage in different regions, the role of dating relationships, and the broader cultural context.

The theme for this week’s International Conference on Family Planning is “Full Access, Full Choice”. A review of the conference programme demonstrates a number of promising adolescent sexual health education and family planning models from sub-Saharan Africa and South Asia, where most child marriages and adolescent childbirths occur. Unfortunately, child marriage interventions with demonstrated effectiveness lag behind. The next stage of work in the field must focus on development and rigorous evaluation of child marriage elimination efforts and their integration with adolescent-focused sexual health education and family planning efforts.

Some promising models do exist. Cash transfers to improve household wealth in Malawi, education support and retention efforts for girls in Ethiopia and Northern Nigeria, sexuality education for youth in India, and community-focused social norms efforts in Senegal all offer some indication of models that can eliminate girl child marriage. However, the sustainability of such models remains unclear, and most have not been rigorously evaluated to ensure that observed changes are attributable to programmatic efforts rather than historic trends.

There is a great opportunity to improve population health by prioritizing prevention of adolescent pregnancies and childbirth globally, via integrated girl child marriage elimination, adolescent sexual health education, and family planning services. Development and evaluation of innovative integrated models is needed now, or we will continue to see tens to hundreds of thousands of adolescent mothers and their infants die across the world. Girl child marriage can be eliminated in a single generation.
Tuberculosis: a war that must be won on the ground and in the field

José Luis Castro

Once, in a low-income country, I witnessed a dismaying scene: cartons of life-saving medicines stacked high in a storeroom, going nowhere as they slowly spoiled—because public health workers could not get them to the remote villages where people lay dying for want of them. This disturbing image comes to mind—as do similar tales of lives lost because of health-system inadequacies—when talk runs high of anticipated new scientific breakthroughs in my organisation’s primary disease of concern, tuberculosis. The status of detecting and treating tuberculosis today is one of paradox: the tools to eradicate it exist—but we aren’t deploying them effectively enough to save all the lives that could be saved.

Consider some of the evidence:
• Sophisticated new diagnostic tools have emerged recently—but they are of limited use in the some rural locales that cannot provide the regular flow of electricity that they require.
• The Stop TB Strategy, which is strongly rooted in The Union’s original model of directly observed treatment and the short-course treatment regimen (familiarly referred to as DOTS), has been used to successfully treat more than 56 million people over some two decades, but finding, training, and retaining health workers to do the necessary treatment observation and record keeping remains an immense challenge.
• Shortages of essential medicines are frequent—not only in developing countries, but also in such Western stalwarts as the US and the UK.
• Millions of new, infectious tuberculosis cases go unre-ported or misreported, often because health workers are overburdened and have no clear managerial direction. These shortcomings sound a cautionary note to everyone hopefully awaiting “cures” to “eliminate” such champion killers as cancer, AIDS, and heart disease, as well as...
tuberculosis: discovering the right medicines and strategies won’t alone be the game-ender. Public health needs to get better at using the technologies, strategies, and processes that already exist. This is especially so in low-income countries, with their weaker physical and human infrastructures, where the focus must be on deploying tools that work everywhere.

In tuberculosis, the stakes are high. WHO last week reported that tuberculosis continues to be a major global health problem: in 2012 about 8.6 million people are estimated to have developed it, and 1.3 million people died from it. Disturbingly, 2.9 million of the estimated cases were missed—that is, either undiagnosed or unreported.

As the world’s leaders in the fight against tuberculosis gather in Paris this week for the 44th Union World Conference on Lung Health, much attention will understandably focus on research into new tools. These are, of course, welcome and exciting developments.

But we must work equally hard at developing approaches that will work everywhere the disease claims lives, and at using what we already have more efficiently and with greater impact.

What can we—health professionals, donors, governments and non-governmental organisations (NGOs)—do? First, we need to fill an operational know-how gap. Many public health programmes are directed by talented and dedicated medical professionals who have never received training in planning, budgeting, logistics, operations, human resource management, and communications—all of which are integral to successful public health-care delivery. Second, adequate supply and delivery of existing medicines and other consumables has to become a universal reality, not a target reached inconsistently. Third, the oversight of directly observed treatment needs to be improved in many countries through more attention to recruitment and training, and to developing location-appropriate methods of administrating it.

More support is needed for tools that can work in all countries. I often hear reports that such basics as microscopes are malfunctioning or in short supply.

Additional funding is needed, but not an insurmountable amount. The current gap between existing funding levels and the cost to implement WHO’s 10-year Global Plan To Stop TB is $21 billion.

Finally, we need a strengthened spirit of collaboration, globally and locally. Fighting a stubborn disease such as tuberculosis requires a concerted effort by governments, donors, NGOs, and the private medical sector. Collaboration is difficult even when all parties are in accord, but it is simply another management skill that can be learned.

The Union is not alone in identifying these concerns. WHO’s Stop TB Strategy in 2006 identified strengthening health systems as a critical step toward eradicating the disease. Expanded operational research—“the science of doing better”—was also identified as a priority to find local solutions to local problems. And, in the journal Respirology earlier this year, a group of tuberculosis experts said, “Introducing new tools into a deficient system will be unlikely to achieve the improvements we seek...efficiently applying what is available will be the key to achieving success.”

For many decades, rumours of tuberculosis’s demise have been greatly exaggerated in the wake of dramatic research breakthroughs. Great progress has been made, but the disease has outlived every expert who ever made such a prediction. The lesson is clear: this is a war that can and must be won on the ground and in the field, as much as in the laboratory.
Migration of people from rural areas to urban cities in the pursuit of a better standard of living has resulted in lifestyle and behavioural changes. These changes are further exacerbated by the ageing population and have made the country vulnerable to many diseases such as heart disease, hypertension, and cancer. However, although research has been conducted on hypertension and it has been shown that 35% of the sampled population has elevated blood pressure, there are no data available regarding the cancer burden in South Sudan as an independent country or before its split from Sudan.

In fact, the cancer burden and prevalence in Sudan before the separation is not known either. The National Cancer Registry in Khartoum was only established in 2009. Recently, we have examined the data from this registry using tribal affiliation. Registered cases from tribes known to be from South Sudan such as Shilluk, Dinka, and Moro were examined for cancer frequency and types. Only 5% (1135/20 954) of the registered cases in the National Cancer Registry for the period 2009–10 were found to be from South Sudan. The ten most common cancers in this small population of registered cases were breast cancer, oesophageal cancer, oral cancer, lymphoma, leukaemia, cervical cancer, liver cancer, and prostate cancer. The cancer profile of neighbouring Uganda is dominated by cervical cancer, lymphoma, Kaposi’s sarcoma, breast cancer, and prostate cancer.

The country has only two cancer centres, located in Khartoum and Wadmadani, with capabilities to diagnose and treat cancer. These two centres receive referral patients from the entire country. However, few patients from South Sudan travel to Khartoum for treatment because of the long distance, lack of proper transportation, financial constraints, and road safety. For these reasons, most residents of South Sudan, if they can afford it, seek treatment in cancer facilities in neighbouring countries such as Uganda.

The recently prepared 5-year Strategic Health Policy (2011–15) of South Sudan, which focused on improving maternal and child health and eradicating infectious diseases, did not cover any of the non-communicable diseases, including cancer. Actually, cancer has become an emerging health problem worldwide and strategies for its control are

South Sudan is a land-locked country in east-central Africa. Following several decades of strife, it gained autonomy from Sudan and became an independent state on July 9, 2011. Prior to the partition, South Sudan received limited support from Sudan, including health-care services through a publicly funded system. However, following the separation of the nations, these meagre services have stopped and South Sudan, as yet, has not fulfilled its health-system needs and continues to have the worst health system in the world. The cancer situation is particularly dire.

Sulma Mohammed

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urgently needed. It is estimated that the number of new cancer cases worldwide will exceed 21 million and the number of cancer deaths will reach 13 million annually by the year 2030 (International Agency for Research in Cancer). About 70% of cancer deaths will occur in low-income and middle-income countries. However, controlling infection-associated cancer will prevent about 33% of cancer deaths in sub-Saharan African countries including South Sudan. Limited information in South Sudan point to an increase of HIV, high prevalence of human papillomavirus (HPV) and hepatitis B virus (HBV), and high consumption of alcohol among South Sudanese people that may impact the cancer burden and patterns of the country.

While scientific data regarding these cancer-associated infectious agents in South Sudan are limited, sentinel surveillance conducted in 2009 estimated that HIV prevalence in antenatal clinics across South Sudan was 3.0%, ranging from zero in Northern Bahr el Ghazal to 7.2% in Western Equatorial State. This magnitude of HIV prevalence in Western Equatorial State raised governmental concern. Consequently, the government asked the US Centers for Disease Control and Prevention to launch an investigation into this matter in 2012. The search found that 10.7% of 420 first-visit antenatal clinic attendees and 13.1% of 388 voluntary counselling and testing attendees were HIV seropositive, confirming the high HIV prevalence in Western Equatorial State. Furthermore, the CDC investigation revealed a shortage of health-care workers and lack of supportive supervision, limited HIV prevention services and access to HIV testing, and limited HIV care and treatment services.

In regard to HBV, Sudan is classified among countries with a high hepatitis B surface antigen (HBsAg) endemicity (more than 8%), with HBsAg seroprevalence as high as 26% in South Sudan. Risk factors include parenteral antischistosomal therapy, sexual promiscuity, and scarification, which is a common ritual in South Sudan. Not much is known about cervical cancer or HPV prevalence in South Sudan. However, data from Uganda showed that cervical cancer is the most common form of cancer in women. Annually, about 3577 women are diagnosed with cervical cancer and 2464 die from the disease (UN World Health Organization), while 33.6% of women in general population harbour HPV infection.

The above facts give compelling evidence to formulate an urgent strategic plan for cancer prevention and control in South Sudan. This should include resource commitment, prevention and early detection, and capacity building that includes both infrastructure and personnel.
Building the case for new vaccines: lessons from Hib

Rana Hajjeh

Every day, governments make decisions about how best to address problems from poverty and homelessness to crime and poor educational achievement. Leaders often have to rely on limited evidence to guide their decisions, including studies conducted in different geographies (but with similar contexts) and modelled estimates. This certainly applies to health, where studies to measure disease burden and to evaluate various interventions are essential but must be balanced with the fact that lives are literally at stake. The Hib Initiative aimed to empower decision makers to make informed decisions about introducing *Haemophilus influenzae* type b (Hib) vaccine in their countries. Here I describe some of its successes, and lessons learned.

A decade ago, data from developing countries on the burden of Hib and the impact of Hib vaccines were limited, and few developing countries had introduced the vaccine, despite the fact that it had been available for more than a decade and had virtually eliminated the disease in developed countries. Many leaders hesitated to introduce the vaccine before large-scale studies and surveillance systems were established to determine the precise burden of disease in their country. However, it was clear that not all countries would be able to conduct such studies. Further, we learned from countries that did vaccine probe studies that routine surveillance prior to introduction of Hib vaccine, even when it is of high quality, often drastically underestimates disease burden. Surveillance for Hib disease, similarly to pneumococcal and meningococcal disease, often relies on surveillance for bacterial meningitis, which is challenging due to multiple factors: (1) isolating bacterial organisms (Hib, pneumococcus, meningococcus) requires adequate bacteriology laboratory capacity and timely processing of cerebrospinal fluid specimens, both of which are often not available, especially in developing countries; (2) antibiotic use prior to presentation at a health-care facility where specimens can be obtained is common and can significantly decrease the yield from cultures and diagnostic tests.

Therefore, many experts argued that countries should share and use data from neighbouring countries with similar geographic and socioeconomic characteristics, rather than waiting to introduce life-saving interventions. Similarly, experts argued that research conducted post-vaccine introduction was equally—if not more—important in order to document the impact of the vaccine and provide evidence to support the programme in the long term.

Establishing an evidence base and encouraging its use across countries was a key priority of the Hib Initiative. The Hib Initiative was a consortium of public and private institutions (Johns Hopkins School of Public Health, WHO, the London School of Hygiene and Tropical Medicine, and the US Centers for Disease Control and Prevention), funded...
by the GAVI Alliance, to assist countries eligible for GAVI funding in making evidence-based decisions regarding the introduction of Hib vaccine.

From its beginning in 2005, the Hib Initiative focused on conducting studies that would address remaining barriers for vaccine introduction. Working with experts and countries, the Hib Initiative identified the research gaps for Hib disease and vaccine, and accordingly funded studies necessary to aid decision makers. The Initiative helped fund more than 35 projects and set up surveillance in over 50 countries, across all regions.

The success and value of this effort is clear in the results. The studies—in a recent journal supplement and ones previously published—clearly reveal that Hib disease is a significant cause of meningitis and pneumonia in children, takes a significant toll in terms of long-term sequelae and economic burden for countries, and that the vaccine significantly reduces disease in developing countries, thus serving as an important intervention for countries to reach Millennium Development Goal 4. Post-introduction studies in various countries also helped ensure sustainable support for immunization programmes, and all the evidence produced has contributed to where we are today—virtually every country in the world is either using Hib vaccine or will introduce it in the very near future. In 2005 only 17 GAVI-eligible countries had adopted Hib vaccines. Today all GAVI countries have either introduced or will by 2014.

The Hib Initiative is a prime example of how the results of research efforts often extend beyond discrete projects. For example, the Hib Initiative sponsored surveillance in Vietnam to help make the case for vaccine introduction. That surveillance system was maintained and is now being used to evaluate the impact of the vaccine, which was introduced in 2010. Going forward, the system could be adapted to evaluate impact of, for example, pneumococcal vaccine. This was done in Pakistan and Bangladesh, where surveillance started for Hib disease also generated data for pneumococcal disease, including data to support vaccine introduction and continued use for evaluating vaccine impact.

Another effort highlighted in the supplement was development of a model that identified key determinants of cost-effectiveness of Hib vaccines. The researchers have made the user-friendly model available for use by ministries of health that wish to assess the cost-effectiveness of Hib vaccination and populate the model with vetted, credible, country-level data (this model was later adjusted to determine cost-effectiveness of pneumococcal and rotavirus vaccines, and became known as TriVac).

Efforts like these allow the global health community to reflect on progress made, while also recognizing challenges that remain. Today, new vaccines are being introduced in developing countries with a much shorter gap than the 20 years it took for Hib vaccines to make it from developed to developing countries, thanks in large part to accelerated vaccine efforts by global players like GAVI. But we need to keep in mind that it is important to plan early for studies that will generate the evidence base needed for these vaccine decisions. One of the main barriers for Hib vaccine introduction was lack of adequate data from developing countries, particularly in Asia. At the global and national levels, decision makers and partners need to be careful not to let history repeat itself for new vaccines, and to seriously consider the cost of delay.

As we work to increase access to new vaccines, such as pneumococcal and rotavirus vaccines, we must stand up for the importance of building the evidence base to support the decision making process. The Hib Initiative highlighted the need for the global public health community to anticipate the pieces of evidence needed to support countries to make decisions about new vaccines, as well as the importance of post vaccine introduction studies to sustain the immunization programmes. A strategic vision is needed to identify the data gaps, as well as the funding to support high quality studies that will fill these gaps and make life-saving vaccines a reality for the world’s children.
Malaria control to elimination—emerging consensus on “accelerating to zero”

David Schellenberg

Last week I joined malaria researchers from around the world at the 6th Pan-African Multilateral Initiative on Malaria conference (MIM) in Durban, South Africa. The theme “Moving Towards Malaria Eradication—Investing in Research and Control” saw a new consensus emerging around the concept of “accelerating to zero”—increasing investment in control in the most heavily burdened countries while enhancing capabilities to eliminate malaria where this is feasible.

There are conflicting estimates of the burden of malaria disease and death, but all observers agree on two points: first, there has been major progress in the last 10 years, largely due to massive increases in investment in control; and second, there are still at least hundreds of thousands of deaths every year from this preventable and treatable disease. We should do better.

The conference theme—including mention of “the E word” (eradication)—would have been unthinkable when MIM last gathered in Durban, in 1999. This was before the groundswell of funding for malaria control and research through the establishment of the Global Fund to Fight AIDS, TB and Malaria, the US President’s Malaria Initiative, and increased funding from the World Bank, the Bill and Melinda Gates Foundation, and from donors such as the UK’s Department for International Development.

38 African countries were amongst the 62 countries represented at MIM by researchers, policy makers, programme implementers, and funders. The conference was awash with excellent presentations of important studies, including worrying new information on the extent of insecticide and drug resistance, and encouraging news on the development of new tools, especially the latest results from the ongoing phase III trial of the RTS,S malaria vaccine, accompanied by the news that this will be submitted for regulatory review in 2014.

The elimination agenda is undoubtedly influencing priorities in research. The development of new malaria drugs and vaccines now has an emphasis on blocking transmission: the science is exciting and the approach to regulatory approval intriguing. Operational challenges include the need to develop and deploy surveillance systems capable of informing local responses by turning dry data into powerful knowledge-based strategies in which appropriately trained people act on data to deliver effective malaria prevention and treatment. We heard how the Zanzibar malaria control programme identified an upswing in cases—using daily reports of malaria cases sent by mobile phones—and responded with targeted delivery of insecticide-treated nets, indoor residual spraying, and focal drug administration. However there will be an increasing need to move beyond detection of parasites in patients towards the...
surveillance of infections, for which more sensitive diagnostics are required. The Malaria Eradication Scientific Alliance convened several symposia to share experiences from countries working to eliminate malaria.

Important gaps remain. We heard little about how best to prepare for the epidemics which must be expected as malaria control improves. Reduced malaria transmission will decrease immunity and make populations more vulnerable. A failure of control in such situations efforts will produce epidemics with serious public health consequences. Yet epidemics will be an almost inevitable result of improved control on the path to elimination so there’s a need to develop strategies to identify and respond early to them.

Elimination is fragile. Once transmission of the parasite is interrupted, the threat of reintroduction remains. We know malaria can bounce back, hence continued financing of elimination strategies will become increasing cost-ineffective by conventional measures as cases dwindle but the resources to maintain vigilance and response capability remain stubbornly high. These investments will only cease when global eradication has been achieved.

A key question is the scale at which elimination efforts should be undertaken. Historically this has been on a country-by-country basis, but policy makers need to understand the movements of people and parasites across national boundaries to inform the scale of elimination efforts. Some scientists point to evidence of parasite gene circulation within economic regions as an indication of the scale needed for elimination efforts in Africa.

Eradication of malaria is the only acceptable long-term goal: the costs will be substantial, but finite; the benefits immeasurable and lasting as savings in finance and human misery accumulate, the need to invest in the development of new malaria drugs and vaccines wanes, and information systems and supply chains are strengthened with benefits into the future.

There’s an urgent need to recognise the potential of investment in non-health sectors to improve malaria control. Elimination of malaria in many countries—including England and the USA—was more a function of broader improvements in housing, wealth, and health systems than specific interventions targeting malaria. All development activities in endemic countries should use a malaria lens to view the broader social, economic and environmental implications of their actions.

For now, the greatest threat to malaria control in the short term does not come from the development of resistance by the parasite or vectors, but from the lack of resources. Roll Back Malaria, estimates that $5·1 billion are needed each year, but so far only $2·3 billion is being made available. It is clear that donor support will continue to be needed for the foreseeable future. It’s just not acceptable that today, a child dies from malaria every minute from a disease that can be controlled through the want of a $3 mosquito net, a $0·50 diagnostic test, or a $0·40 treatment.
Scaling up nutrition in Ghana

Robert Akparibo

In developing countries, severe acute malnutrition remains a threat to already weak national health systems. Recent UNICEF reports have estimated that 5% of the world’s children younger than 5 years (estimated 26 million) are currently severely wasted, most of whom (>90%) live in south Asia and sub-Saharan Africa. The concern that many Saharan African countries won’t be able to meet the Millennium Development Goal (MDG) for child health is mainly because of the high burden of child severe malnutrition. The 2009 UNICEF reports on tracking child and maternal nutrition revealed that 10% of sub-Saharan African children younger than 5 years are wasted. For this reason, African governments must take child severe malnutrition more seriously.

In Ghana, around 9% of children younger than 5 years have acute wasting. In collaboration with development partners, the government of Ghana has taken pragmatic steps towards addressing child malnutrition. One of such steps is the adoption and integration of the community-based management of severe acute malnutrition (CMAM). The approach allows children with uncomplicated severe acute malnutrition to be managed by their caregivers or mothers at home with nutrient-dense therapeutic diets. Over a decade of work by non-governmental organisations in emergency situation in Ethiopia, Malawi, and South Sudan has generated enough evidence to demonstrate that the approach is an effective nutrition intervention strategy during emergencies. As a result many governments including the government of Ghana have decided to adopt the approach and mainstream it into their routine health services.

I have keenly followed the progress of the implementation of the CMAM programme in Ghana since its inception in July 2010. I have analysed data collected on the children who completed the programme in the Upper East region between July 2010 and September 2011 to determine the impact on nutritional recovery, mortality, and default. I have also talked to stakeholders (beneficiaries and service providers) of the programme to listen to their views regarding what they think about the programme and the impact it has made so far in the Upper East region. My analysis shows that the programme has made a significant impact in achieving nutritional recovery and minimising mortality caused by severe acute malnutrition among the children who benefited. There were also positive views expressed by the mothers and health workers regarding the programme. One mother remarked that “we thank god and the health workers for bringing this programme to our communities to save lives of our children”. For the health workers, the CMAM programme was a good strategy that could help them achieve the MDG for child health. For most Ghanaians and the people in the Upper East region, this is
welcoming news, giving hope for parents of children who are severely malnourished. It is also a good signal that Ghana may be winning the fight against child malnutrition.

However, what is worrying from the observation I made in the field, and the analysis of the data I made, is that most mothers whose children had enrolled in the programme dropped out of the programme within 2–3 weeks. When I spoke to them they gave various reasons, which spanned from geographical access to the CMAM service to lack of support from their spouses to attend. I also noticed that some of the mothers were withdrawing because of the perception held by grandparents about malnutrition. In Ghana grandparents seem to have great influence on the upbringing of children, including their feeding. When I interviewed grandfathers they seemed to hold the perception that malnutrition comes about as result of mothers’ disregard of traditional norms and beliefs. To them, the treatment of malnutrition should also incorporate traditional medicine. I observed that the community health nurses were doing their best to correct this myth but were lacking the capacity because of heavy workloads on their priority list. They told me that state registered nurses and doctors do not want to work in the rural areas. As a result, they combine doing outreach health-care work with seeing large numbers of patients at the health centre. This is affecting effective supervision of the CMAM programme at home level in terms of reinforcing health and nutrition messages and the importance of attending the CMAM programme. The effectiveness of the programme could be improved if the authorities act to minimise parents from defaulting. Health workers, especially those who work in rural areas, need to be motivated to increase their commitment if the fight against severe malnutrition in Ghana is to be sustained.
Is there a relationship between carbon dioxide emission per capita and life expectancy? Looking at the graphic presentation of both (based on the World Bank’s World Development Indicators 2013), one cannot deny the correlation: the more countries emit carbon dioxide, the longer their inhabitants live. Correlation does not imply causation; we reject the premise that burning more fossil fuels will automatically help governments to increase the life expectancy of their citizens. Yet the path that current high-income countries took to reach high income, and the life expectancy their citizens enjoy, involved increasing carbon dioxide emission. To achieve similar life expectancy levels, governments of low- and middle-income are tempted to replicate a similar trajectory of economic growth—including burning fossil fuels ad libitum—which would create a serious climate change problem. But how to convince them to follow a green growth path?

High-income countries promote the concept of “common but differentiated responsibility” for climate change—and the focus is shifting from “differentiated responsibility” to “common responsibility”. Until now, only high-income countries were expected to make binding commitments about carbon dioxide emission ceilings, but an agreement in principle was reached about a future international legally binding arrangement for all countries. Middle- and low-income countries are expected to accept ceilings at a much lower level than high-income countries’ present emission levels, otherwise the arrangement would be ineffective—the present global average of 4.7 metric tons per person per year is unsustainable. Low-income countries, without immediate prospects of substantially increasing industrial activity or consumption, may not be constrained by such ceilings in the short run, but some middle-income countries could be immediately affected—which explains why India tried to avoid the agreement in principle, initially supported by China, Brazil, and South Africa, as Michael Jacobs reported a year ago.

Jeffrey Koplan and colleagues define global health as “an area for study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide”, which suggests an accepted shared responsibility for global health. In practice, however, we have global funds and international health regulations for infectious disease control, not for global health. And that has consequences. The recent World Health Report 2013: Research for Universal Health Coverage presents a stunning case study: an emergency obstetric care (EmOC) pilot project in Burundi averted 74% of maternal deaths, but the report concludes that “[t]he challenge ahead is to ensure that funds and other resources are available to scale up and sustain the achievements”. If high-income countries would live up to their promise of allocating 0.7% of their gross domestic product to international assistance, and then allocate 15% of that to a global social health protection fund, they could help Burundi to increase the government health budget to US$50 per capita per annum, from the present level of $8 per capita per annum. Then EmOC—as an element of universal health coverage (UHC)—would be perfectly sustainable. If the authors of the World Health
Report have doubts about the sustainability of EmOC in Burundi, they simply express doubts about high-income countries’ willingness to accept shared responsibility for global health—and that tells us something about what UHC could really look like in low-income countries.

In other words, high-income country governments promote shared responsibility for climate change but reject shared responsibility for health—or for healthy life expectancy. But developing countries are no longer accepting that. Alex Evans recently reported that Brazil, China, India, and South Africa are now promoting “the idea of common but differentiated responsibilities to be as central a concept in development as it already is in climate”. He considers this a “dangerous game on the post-2015 development agenda”, because both the Millennium Development Goal (MDG) and Sustainable Development Goal (SDG) negotiations could become “bogged down amid a mood of mutual recrimination”.

The imminent merger of MDG and SDG negotiations could certainly complicate both. But in the end, the world cannot have a common environmental policy without a common social policy, and both will have to be based on shared responsibility, simply because economic growth, carbon dioxide emissions, and life expectancy, are related. We had better accept that complexity, rather than trying to ignore it.

This is a joint post with Claire Brolan, Albrecht Jahn, and Peter S Hill.
Community health workers can accelerate progress towards universal health coverage in sub-Saharan Africa

Biodun Awosusi

In January this year, a team of doctors, community health workers (CHWs), and volunteers took part in medical outreach in poor neighbourhoods in Lagos, Nigeria. The CHWs helped to mobilize the people, provided basic health education, and screened participants for diabetes mellitus and hypertension. Almost a quarter of participants had either diabetes mellitus or hypertension. One out of ten needed urgent medical attention; they were referred to nearby general hospital for further care. It was a rewarding experience for me to see how much CHWs can contribute in taking health care to the doorsteps of those who need it most but could not afford it.

Poverty is predominantly a rural phenomenon in sub-Saharan Africa, where more than 60% of the population lives in rural areas. The cost of illness drives many people to deeper levels of poverty. More than 200 million people live in extreme poverty in the region and are in dire need of affordable quality health services. Poverty drives many people away from hospitals to seek care from quacks and traditional healers when they could get affordable, life-saving health care from health workers, particularly CHWs who are close to them. As the rhetoric for universal health coverage (UHC) rises, I strongly believe CHWs have a key role to play to accelerate progress towards UHC in the region.

Is there any evidence to assert that CHWs can deliver? Of course there is. CHWs provide life-saving, culturally acceptable health-care services that reduce preventable causes of maternal and child mortality. They are increasingly seen as inevitable change agents in community-based primary health-care reforms. WHO and UNICEF state that CHWs deliver integrated community case management of malaria, pneumonia, diarrhoea, and malnutrition which are leading killers of children younger than 5 years. CHWs also provide a vital link between communities and health facilities.

According to WHO, we face a global shortage of 4·3 million health workers. Out of 57 countries with critical shortages of health workers, 36 are in sub-Saharan Africa. Although the region has 25% of the global burden of disease, it has only 3% of the world’s health workers. This is unacceptable. CHWs can help to address this challenge in order to improve access to health care. Interestingly, there is a progressive move in this direction in some countries in the region.
With more than 45,000 CHWs and less than 1000 doctors, Rwanda has recorded revolutionary improvement in health outcomes facilitated by strong leadership. The maternal mortality ratio dropped by 60% over the past decade and deaths from HIV, tuberculosis, and malaria have each dropped by about 80% over the same period. Under-5 mortality has been cut by 70% since 2000. Rwandan President Paul Kagame says, “Use of community health workers is something we have had experience with and we have seen good results.”

In Ethiopia, CHWs are also making impact. At the Abuja+12 Special Summit of Heads of State, Ethiopian Prime Minister and African Union Chairperson Hailemariam Desalegn asserted that the flagship health extension programme in his country involving 38,000 health extension workers has led to a significant reduction in HIV infections and the number of women dying in childbirth, and has also increased the number of children immunized.

These achievements suggest that CHWs could be key to achieving the Millennium Development Goals (MDGs). They can also speed up progress towards UHC. UHC has gained huge momentum at national and global levels with strong endorsements from the World Bank, WHO and the UN. The UN Secretary General Ban Ki Moon recently recognized UHC as a plausible target in the post 2015 development agenda. Despite this overwhelming support, the global health community has failed to realize the connection between CHWs and UHC.

Let’s examine this link.

UHC is a goal to ensure people everywhere have access to the essential health services they need without incurring financial hardship. CHWs contribute to meeting this goal by providing affordable culturally acceptable health-care services to people in settings where they need them most. They ensure mothers and children can receive care for common ailments within the community. When necessary, they refer patients to health facilities.

Although UHC contributes to sustainable development, it is limited by financial and physical barriers. Is there any role for CHWs here? Rwandan Health Minister, Agnes Binagwaho has an answer. She asserts, “Access to care in resource-constrained countries face financial, infrastructural and geographical barriers. Community health workers are a solution for overcoming those and improve access to healthcare in rural communities.”

UHC guarantees equitable access to preventive, curative, rehabilitative, and palliative care. CHWs contribute to this by providing basic health education and family planning services. They ensure children are immunized and women deliver in the presence of skilled birth attendants. They treat common ailments and also provide a link to health facilities to facilitate the continuum of care.

This link has great implications as policy makers design UHC programmes in countries with a large informal sector. It shows that CHWs can make vital inputs. Such programmes should not focus solely on risk pooling mechanisms but also on developing a viable CHW subsystem which recognizes that CHWs provide many basic life-saving health services in a highly cost-effective and culturally acceptable way. This subsystem will emphasize how CHWs at the community level can also help to garner social and political support for community-based risk pooling mechanisms, as seen in Rwanda.

A good CHW subsystem in a country (eg, Rwanda) would have an adequate number of well trained, highly motivated CHWs, equitably distributed across the country. They must receive adequate training from clinical experts and be properly supervised to ensure they provide quality services to the populace. They should also have a consistent supply of diagnostic testing materials, essential drugs, and user-friendly treatment guidelines to facilitate delivery of quality services.

These elements are captured in the 1 million community workers campaign launched by the Earth Institute. The campaign offers a golden opportunity to deploy a million CHWs in sub-Saharan Africa to achieve “systematic rural healthcare coverage across rural sub-Saharan Africa” to fast-track achievement of the MDGs. By supporting relevant stakeholders committed to “CHW scale-up in the context of primary healthcare systems”, the campaign can significantly improve access to essential health services for the rural dwellers in Africa. It is expected that this will significantly cut down the burden of disease in the region.

However, we must resist the temptation to create a monster vertical programme that neglects broader human resource for health reform and focuses solely on CHWs. We know such programmes do not last and waste scarce resources. Any CHW subsystem in any country should be implemented within broader strengthening of human resources for health that emphasizes effective collaboration among all cadres of health workers. CHWs cannot replace highly skilled health workers but can complement them in order to make quality healthcare available to people everywhere.

With this, UHC stands as a realizable health target in Africa.
Accountability now: renewing our resolve to advance women’s and children’s health

Carissa Etienne

Few global health initiatives are as intrinsically persuasive as the campaign to stop women and children from dying of causes that are utterly preventable. This is a human rights bottom line. From a health standpoint, it is also the foundation for ensuring health equity throughout the life course.

Many countries have made meaningful progress in reducing maternal and child mortality. But as The Lancet’s own Richard Horton has noted, and as the 2012 report of the Expert Review Group (iERG) on Information and Accountability for Women’s and Children’s Health underscored, this is no time to rest on our laurels. Millennium Development Goals 4 and 5 remain the furthest from being achieved by 2015. The modesty of our gains so far should strengthen our resolve to make them robust. Evidence shows that this is both essential and possible. But to accelerate gains, we need to deploy our resources more wisely and monitor our results more strategically. If our purpose is to inform policy rather than simply comply with spreadsheet prompts, we may need to drop some metrics to make way for others that more clearly mark the way forward.

“Accountability” is a term that blends the ethical notion of “holding to account” with the practice of accounting. Since 1990, in global health we have haltingly but steadily gathered numbers—not all that we need nor all of them entirely reliable, but enough to do some accounting and holding accountable. Our accounting tells us we need to expand certain efforts.

Critically, we know that we need to channel more efforts towards populations that are repeatedly and systematically deprived of services. We have evidence that shows (however wide the uncertainty intervals may be) that even when essential health services are provided, they cannot do the job unless other determinants that constrain health progress are addressed. These include disenfranchisement of women, social and political exclusion of ethnic and other minorities, food insecurity, inadequate water and sanitation services, and poor vital statistics recording, among others.

According to economic indices, the Region of the Americas is faring better than some other parts of the world, and this also applies to women’s and children's health. Regional averages for many of the indicators used by the Commission on Information and Accountability (COIA) for Women’s and Children’s Health show encouraging trends since 1990. But when these averages are broken down by country, major differences emerge. And when
data are examined by groupings according to wealth quin- tile, female age, educational attainment, geographic area of residence, or access to water and sanitation, the pattern of inequities mirrors those seen in other parts of the world: the poor have benefited less from health progress over time, have much less access to health services, and suffer far higher mortality than the wealthy.

In the Americas, being indigenous and being poor are nearly synonymous, and social discrimination clearly compounds the effects of financial insecurity. Despite decades-long efforts by countries to improve social conditions, indigenous communities continue to have higher rates of stunting and obesity, lack access to quality health services, and suffer higher maternal and child mortality. Other population groups struggle similarly against social and economic barriers. Large pockets of the Latin American and the Caribbean population continue to bear the brunt of what is known as the double burden of disease. All these problems will continue well beyond 2015 unless the social inequities that underlie differences in health status are drastically reduced.

The Pan American Health Organization/World Health Organization (PAHO/WHO) is not alone in its concern about the urgency of closing the gaps that lead to needless suffering and death for so many. On September 10–12 in Panama City, under the theme "A Promise Renewed for the Americas: Reducing inequities in reproductive, maternal, and child health," a unique partnership of agencies—the Inter-American Development Bank (IDB), the Salud Mesoamérica 2015 ("Mesoamerican Health 2015") initiative, UNAIDS, UNFPA, UNICEF/TACRO, USAID, and the World Bank, with PAHO/WHO as coordinating secretariat—will join forces to ensure that the unfinished business of women’s and children’s health is addressed within the post-2015 development agenda. This renewed commitment will be more than a show of goodwill; it will be a call for joint accountability, not just for specific technical programmes and metrics, but for promoting the elimination of inequities that are at the root of unequal progress. It will also be a call to action for the rest of the global health community to follow suit and to provide their support.
Healthy cities, healthy women

Afaf I Meleis

As urban populations continue to grow at an extraordinary rate, the urgent need for our cities to be responsive and adaptive to citizens’ health needs is greater than ever. In 2012, the UN confirmed that 3·5 billion people lived in cities, which is more than half of the world’s population, and by 2050 this number will boom to almost 6 billion. Although urbanization is an engine for modernization, economic growth, and development, there are many challenges that accompany rapid urbanization such as unemployment, violence, slum development, poverty, and lack of access to health care, transportation, and healthy foods. Among all these issues surrounding global urbanization, women and their health are jeopardized the most owing to gender inequities, and a lack of awareness among urban developers and policy makers of the unique needs of urban women and girls throughout their lifecycles.

Women are the pillars of society, playing important and multiple roles as mothers, leaders, students, decision-makers, scholars, lawmakers, business executives, voters, and workers. They are both informal and formal providers as well as recipients of health care and have a strong hand in guiding the health of their families and communities. Women and girls tend to take on the bulk of unpaid care work such as looking after and educating children, caring for elderly family members, and caring for the sick, yet they have many challenges in accessing health care and educational services in many urban areas. Women and girls desire and need to live in safe cities with better lighting, more access to services, and space that fosters connections and enables them to provide the care that their roles demand to meet the needs of their children, friends, partners, elders, and other family members. This entails cities providing women with greater access to resources for their children’s needs as well as elders’ needs, improving housing conditions or replacing slums, where many women newcomers to the city live, providing affordable and accessible modes of transportation and access to healthy foods, creating safer spaces for active sports or walking, and offering equal opportunities to employment and training programmes in the formal and informal job sectors as well as comparable compensation.

Women’s voices should be heard and included in planning decisions for cities. Women should be invited to be members of the policy-making bodies and involved in plans for the design of urban spaces, the lived environments, and the development of cities. This would ultimately ensure that spaces are designed with women’s and girls’ perspectives and with attention to their needs and health outcomes. As urban populations continue to grow at an extraordinary rate, the urgent need for our cities to be responsive and adaptive to citizens’ health needs is greater than ever. In 2012, the UN confirmed that 3·5 billion people lived in cities, which is more than half of the world’s population, and by 2050 this number will boom to almost 6 billion. Although urbanization is an engine for modernization, economic growth, and development, there are many challenges that accompany rapid urbanization such as unemployment, violence, slum development, poverty, and lack of access to health care, transportation, and healthy foods. Among all these issues surrounding global urbanization, women and their health are jeopardized the most owing to gender inequities, and a lack of awareness among urban developers and policy makers of the unique needs of urban women and girls throughout their lifecycles.

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Women’s voices should be heard and included in planning decisions for cities. Women should be invited to be members of the policy-making bodies and involved in plans for the design of urban spaces, the lived environments, and the development of cities. This would ultimately ensure that spaces are designed with women’s and girls’ perspectives and with attention to their needs and health outcomes. As
the 21st century continues to unfold, urban planning must be gender-inclusive of the differences between men’s and women’s perspectives in urban living and the differences in needs and health outcomes due to varying incomes. Gender-inclusive urban planning provides the impetus to empower women and to enhance the quality of their lives, and thus the quality of life of their families and communities, leading to healthier, sustainable societies.

We at the University of Pennsylvania School of Nursing, in collaboration with the Penn Institute for Urban Research, continue to drive forward the exploration of the issues affecting urban women and girls and to create opportunities for robust dialogues about barriers they face to achieve optimum health, as well as best strategies for creating healthy and safe urban settings. On Tuesday, September 17, 2013, at the Millennium Hotel London Mayfair, we have partnered with The Lancet to host HEALTHY CITIES: HEALTHY WOMEN LONDON—a conference designed to provide an opportunity for local and global leaders to share their ideas, solutions, and best practices around health care and urban design as it relates to many of the issues plaguing urban women’s health. We look forward to engaging in evidence-based dialogues about preventing violence against women, providing increased access to services, improving health through improving the built environment, and identifying ways to build and sustain a healthy lifecycle within a healthier urban community. We invite you to learn more about this powerful day and register to join us on September 17 by visiting our Healthy Cities: Healthy Women LONDON website.
Knowledge is power: the ethical ambiguity of evidence-based medicine in global health

Meghan J Clark

Inequity in health outcomes and access is a matter of both lack of resources and lack of knowledge. Open sharing of knowledge is paramount in the fight for global health and human rights. Yet knowledge is power. It holds the power and possibility to save lives. But it can also be used to assert power over others, to disempower and reinforce existing structures. There is an inherent ambiguity to evidence-based medicine within the power dynamics of partnerships for global health and human rights. How do we disseminate knowledge ethically?

The pursuit of health and human rights involves sharing knowledge and resources through collaborative partnerships. Since the launching of the Millennium Development Goals, numerous international health partnerships have emerged to share best practices and resources. In January, 2013, I accompanied one such partnership - a team of doctors and nurses from Ireland, Sudan, and the USA travelled to Khartoum, Sudan for the Sudan Helping Babies Breathe (HBB) National Initiative. Launched in 2010, Helping Babies Breathe is “an evidence-based educational program to teach neonatal resuscitation techniques in resource-limited areas.” Helping Babies Breathe communicates basic knowledge of newborn care (clearing the airway, stimulation, manual respiration using bag and mask) through role playing, a flip chart, and a picture chart. The program is designed as a global initiative for addressing neonatal mortality’s increasing percentage of under-5 deaths.

One aspect of the HBB protocol involves a recommendation to delay cutting the umbilical cord for 1–3 minutes in contrast to immediate clamping of the cord. In Sudan, traditional practice is not immediate clamping but “milking the cord” to deliver more blood to the newborn. Since the traditional practice had the same medical purpose as the “evidence-based” practice, the midwives resisted the presentation of “evidence-based medicine” as a self-explanatory argument. The literature is in fact inconclusive on delayed clamping vs “milking.” Is it right therefore to demand a change in traditional practices when there is no conclusive evidence to necessitate it? In the area of newborn care, global standards that prohibit harmful practices are necessary, but what about traditional medicine practices that are deemed harmless or perhaps of comparable benefit? If the knowledge of the local community is not engaged, then the power imbalance alluded to above is perpetuated.
Invoking the western evidence base is easier than admitting one does not know the answer. However, allowing the presuppositions about western medicine to automatically trump the traditional practices of a rural community worker is an assertion of power, not knowledge sharing. It is this same presumption that Paul Farmer challenges in “Clinical Trials and Global Health Equity.” And in these cases, disseminating knowledge uses power to control rather than empower. Evidence-based medical protocol is powerful and necessary for improving public health. At the same time, attention to human rights advises caution so that knowledge is power for health and not power over others. When grounded in participation and sharing, knowledge serves to lower the disparities of training and skill that perpetuate health inequity.

Clinical evidence and scientific research are integral parts of global health. Dissemination of best practices, medicines, and other resources are a question of justice. However, it is also true that the limitations of the western framework sets the boundaries for what questions are asked. In assuming that western protocols are best, it is assumed that a traditional practice cannot compete. By extension, the assertion of power treats the questions of village health workers with limited education as lesser—if their questions really challenged the protocol, WHO would have considered them. Much of the research on cord clamping is inconclusive on “milking,” in part, because it was not considered a prevalent enough practice for extensive research. Our current evidence is limited by the questions investigated. Moreover, it is imperative to remember that medical evidence changes. The recommendation for delayed cord clamping itself is a drastic change from previous guidelines which recommended immediate clamping.

International partnerships depend upon participation and the building of relationships. The stakes are high when power is improperly used in the context of global health. All medical ethics involves questions of power and vulnerability between provider and patient. In the context of global health partnerships, that same power and vulnerability dynamic exists between aid workers and local community health providers. Whenever these relationships break down, it has life and death consequences for the public health of communities. Neonatal mortality is a global health crisis. The effectiveness of our efforts to combat this crisis will depend upon whether or not we share knowledge by building communities, empowering local health workers, and allowing their questions to challenge assumptions about western evidence.
A brutal murder recalls need for laws that protect LGBTI people

**Mandeep Dhaliwal**

Despite the remarkable progress achieved by HIV prevention and treatment responses, the brutal murder of a prominent AIDS activist in Cameroon serves as a stark reminder of the work that still lies ahead.

Eric Ohena Lembembe, Executive Director of the Cameroonian Foundation for AIDS (CAMFAIDS), was found dead at his home on July 15 2013, his body showing signs of torture. His was a powerful voice for those at the margins in Cameroon, notably lesbian, gay, bisexual, transgender, and intersex (LGBTI) people—but his violent death was hardly unique.

Seventy-eight countries criminalize consensual same-sex acts between adults. In at least five countries, same-sex acts can incur the death penalty. Even where being LGBTI is not a crime, LGBTI people commonly face violence, the threat of violence, discrimination, exclusion, and harassment, often with tacit or explicit support from authorities and with grave consequences for public health.

A new law in Russia, for example, imposes fines and up to 15 days in prison for people accused of spreading “propaganda of nontraditional sexual relations” to minors. This law will certainly fuel homophobia and could have the unintended consequence of criminalising sexual health education for young people in Russia, where rates of HIV infection have been rising dramatically, according to the Joint UN Programme on HIV/AIDS (UNAIDS).

In many parts of the world LGBTI people are excluded and relegated to the margins of society. Marginalised citizens, who often bear a disproportionate burden of HIV, and often face discrimination and constant threats to personal safety, are far less likely to seek HIV counselling, testing, and treatment. Most recently, data from the Global Men’s Health and Rights Survey show that experiences of violence are associated with significantly reduced access to condoms, HIV testing, and treatment for those most vulnerable to HIV.
In 2012, the UNDP-led Global Commission on HIV and the Law found that discrimination and criminalization of people on the basis of sexual orientation and gender identity reduce access to HIV services, increase stigma and undermine efforts to prevent and control HIV.

The Commission called on countries to outlaw all forms of discrimination and violence against those living with and vulnerable to HIV as an urgent public health and human rights priority. Calls for strategic investing in public health and prioritizing efforts to reach the most at risk are growing stronger.

In its report HIV and the Law: Risks, Rights, and Health, the Commission noted the untenable contradiction between investing in HIV prevention and treatment while ignoring or condoning human rights violations against vulnerable and marginalized citizens, including LGBTI people.

The Commission’s work has spurred a number of countries to review laws that criminalize HIV, limit access to lifesaving medicines, prevent people from accessing HIV and health services, and perpetuate gender inequality— which correlates to higher rates of HIV infection.

The Global Fund to fight AIDS, TB and Malaria has committed to supporting policies and strategies that remove human rights barriers to health services for all, especially the most vulnerable. UNAIDS has called on countries to remove punitive laws and to promote and protect human rights, especially the rights of those most vulnerable to HIV, to achieve zero new HIV infections, zero AIDS deaths, and zero discrimination. The UN Secretary General, Ban Ki-Moon, has spoken out, calling for an end to homophobia as a matter of security, dignity, and survival.

Policies and practices that reaffirm rights to equality, dignity, privacy, and security would not only conform to international human rights obligations but also go a long way toward addressing HIV; they would also yield broader health and development dividends.

This means investing more in legal services and ensuring law enforcement offers protection from violence and prosecutes those who commit violence. It means supporting legislatures in promoting right-based legal reform and sensitizing judges.

Eric Ohena Lembembe gave his life to the cause of LGBTI rights. Millions of others are meanwhile subject to similar violence and discrimination around the world, prevented by fear from accessing vital HIV testing, treatment, and counseling services.

Ensuring that the law is on their side should be a public health priority and it would be a fitting tribute to Eric’s life of service.
Equitable partnerships for tackling killer infectious diseases

Alimuddin Zumla

The appearance of a new infectious disease with high mortality rates can ignite fierce scientific and political competition. A rush by scientists to be first to discover the virus and to claim patents and commercial rights can ensue. The global events surrounding the new killer virus Middle East respiratory syndrome coronavirus (MERS-CoV) appear no different, as recent political and scientific controversies illustrate. How can we get scientists to work together with unity of purpose to tackle killer infectious diseases? How can we create collaborative international multidisciplinary partnerships and get scientists to move away from self-centred agendas towards more altruistic intentions? Is it possible for scientists and health-policy-making institutions such as WHO to work together without instruction or dictation, to protect global health security through effective amiable partnerships? Can scientists achieve unity of purpose by working together through equitable partnerships, synergising expertise, enhancing activities and progress, and achieving deliverables in a faster more effective manner?

MERS-CoV was first isolated, sequenced, and patented by researchers at the Erasmus Medical Centre (EMC) in the Netherlands. It was initially named HCoV-EMC, after their institution. The announcement in September 2012 of the discovery of MERS-CoV by the EMC researchers resulted in accusations over breach of the sovereign rights of Saudi Arabia, sample ownership, claims to patents, and perceived restrictions on other scientists to use the virus. This latest saga reminded me of the Indonesian Prime Minister’s complaint over western researchers’ patent claims to the avian influenza virus H5N1 and it brought back memories of the ‘colonial’ research models used by western country institutions and scientists in the pre-1990s era in Africa. For many decades western researchers conducted research through ‘postal/FEDEX’, ‘parachute’ or ‘annexed site’ research models. These were one-way benefit activities and the ethics of that practice was challenged. African scientists have since developed their own successful R&D programmes focused on locally relevant health issues and based on equitable south-north partnerships, coupled to local capacity development and training. To my great relief, in May, at the World Health Assembly in Geneva, WHO Director General Dr Margaret Chan, rightly reminded the research community that intellectual property claims or patents on strains of new viruses should not limit scientific investigations aimed at protecting everyone from MERS-CoV. Renaming of the virus from EMC-CoV to MERS-CoV by the International Committee on Taxonomy of Viruses, and explanations and assurances given by scientists from EMC during a TV discussion of their intention to make available MERS-CoV materials freely available, have fortunately helped calm the controversy.

Despite these initial hiccups, unity of purpose is being achieved on research on MERS-CoV, much of which may not be visible to the public or other researchers due to the rapid pace of research. An enormous amount of progress has been achieved in the past 3 months by visionary leadership shown by the Saudi government and WHO. At the end of March 2013, there were only 17 MERS-CoV cases reported globally (all of whom had medical co-morbidities), nine from Saudi Arabia. Hardly a global emergency 3 months ago. These small number of MERS-CoV cases would not have attracted much attention had it not been that nearly 60% of people who contracted the disease died, and that there were deaths of patients due to MERS-CoV in the UK, France, Germany, and Italy, with major media attention. With small numbers of cases, obtaining useful research data was limited to case reports and the Saudi government kept proactive watchful surveillance with immediate reporting to WHO of MERS-CoV cases. There were many unknowns at that time regarding MERS-CoV. Several priority research questions required urgent answers: the source of the virus, the route of transmission, the epidemiological and clinical features, prevalence rates in the community, transmission patterns, evolution of the virus, and lack of rapid serological diagnostics for surveillance. The epidemiology, mode of transmission, clinical features, and prevalence in the community remained largely unknown.

In April/May an outbreak at health-care facilities in the eastern province of Saudi Arabia changed the pace of
research and answered all political critique. Urgent research conducted under the umbrella of the recently established Global Centre for Mass Gatherings Medicine (GCMGM) to enhance equitable global R&D partnerships in Riyadh rapidly brought together US, Canadian, UK, and Saudi institutions into defining the Al Hasa hospital outbreak, bringing the outbreak under control, defining transmission patterns, and sequencing the virus, all within a period of 4 weeks. The data were presented confidentially to WHO and soon after published. All staff from UK institutions involved in this investigation volunteered their own personal time at their own costs. A second study now provides the most detailed picture yet of the clinical and laboratory characteristics of MERS-CoV. The new research also reveals some important differences with severe acute respiratory syndrome (SARS). The recent identification of milder or asymptomatic cases of MERS in health-care workers, children, and family members of contacts of MERS cases indicates that we are only seeing the tip of the iceberg of severe cases and there is a spectrum of milder clinical disease that requires definition. Several projects are ongoing under the umbrella of the GCMGM to rapidly determine the pandemic potential of the virus through molecular analyses of MERS-CoV. This unity of purpose proved the power of collaborative approaches to tackling this new killer virus and has enabled rapid definition of several unknowns of the MERS-CoV.

Those of us working in the global health and infectious diseases field should reflect on the recurrent need to find a way of getting committed scientists and politicians to work together effectively and synergistically in equitable collaborative partnerships to deal with new killer infectious diseases. The MERS-CoV outbreak again illustrates the urgent need for scientists and politicians to establish unity of purpose, overriding self-interests, and focusing on priority research needs for maintaining global health security. There is enough room for everyone to work together and share joint outputs.
HIV prevention R&D funding in 2012: is the end of the epidemic at risk?

Mitchell Warren

Almost a decade ago, our organizations took part in the formation of the HIV Vaccines and Microbicides Resource Tracking Working Group to keep tabs on how much is being invested in various kinds of HIV prevention research and development and to disseminate our findings to policymakers, researchers, and advocates.

Our most recent report, From Research to Reality: Investing in HIV Prevention Research in a Challenging Landscape, shows that US$1.3 billion in 2012 enabled sustained investment in new and potentially powerful preventive tools like vaccines and microbicides, and emerging prevention methods such as voluntary adult male circumcision, pre-exposure prophylaxis (PrEP), prevention of mother to child HIV transmission (PMTCT), and treatment-as-prevention. We are gratified that, despite severe budgetary constraints, donors continue to support the research required to ensure that HIV no longer poses a threat to the health and welfare of millions around the world.

At the same time, it is clear that investments in HIV prevention research have plateaued in recent years, although the composition of that funding has shifted. Funding for preventive vaccines has remained flat, while additional support for new trials and implementation projects has driven higher levels for microbicides, treatment as prevention, and voluntary male circumcision. Funding for PrEP saw a reduction in 2012, reflecting a year of planning in advance of demonstration projects seeking to translate clinical trial results into public health interventions.

The USA has remained staunchly committed to investing in research and development for HIV prevention, providing nearly 70% of all funding in 2012. Unfortunately, this investment is now threatened by across-the-board US budget cuts known as “sequestration.” A more diverse and global cadre of partners will have to add their support to HIV prevention R&D to sustain and build on the progress already made in stopping new HIV infections.

Despite the unprecedented progress of recent years, the HIV prevention field has been confronted with several challenges, not least the early termination of the HVTN 505 HIV vaccine trial due to lack of efficacy and the disappointing results from the VOICE trial, which failed to demonstrate the ability of either a microbicide gel or an oral antiretroviral drug as PrEP to prevent HIV infection. While disappointing, the insights obtained from these trials is being applied to improve the design of future products and
trials. This is how scientific product development works, and it requires sustained investment.

Key global and regional discussions around the post-2015 global development landscape and the European Union’s “Horizon 2020” innovation framework provide important opportunities for advocates to emphasize the important place HIV prevention must continue to hold on the global health agenda. Accelerating HIV prevention R&D now will help ensure that a generation free from HIV might one day be realized. Allowing a decrease in funding to delay the introduction of new HIV prevention tools by even a year or two would put millions more at risk of HIV infection in the future. We cannot allow economic uncertainty to undo the progress we have made collectively over the last two decades.

Money isn’t all that’s needed. The roughly 100 000 volunteers who took part in HIV prevention trials in 2012 alone made a priceless contribution to HIV prevention. Without them and those who participated in earlier trials, there would be no HIV prevention research and development. We owe it to them and their communities to do all we can to sustain and advance progress toward ending the HIV/AIDS pandemic.

The total cost of the global HIV/AIDS epidemic is immeasurable in human, economic, emotional, and social terms. Every day, some 7000 more people are infected with HIV. It was clear from the earliest days of the epidemic that successfully tackling HIV and AIDS would require committed partnerships bringing together governments, researchers, policymakers, programme implementers, and civil society. We must ensure that these collaborations—the bedrock of HIV prevention research—get the unwavering support they deserve.

Margaret McGlynn, President and CEO of the International AIDS Vaccine Initiative, contributed to this blog post.
New guidance on fair contract negotiation in collaborative research partnerships

Debbie Marais

We at the Council on Health Research for Development (COHRED) have recently published guidance on fair contract negotiation in collaborative research partnerships. The guidance was developed particularly for contexts where there may be no lawyer or legal expertise, and where negotiating mutually beneficial research contracts is critical for building sustainable research and innovation nationally. What does the fair research contracting guidance address and how will it contribute to levelling the playing field in global health research?

Although welcome, the growing volume of research conducted in and with low- and middle-income countries (LMIC) brings with it a number of new challenges for research institutions and government departments in those countries. A greater volume of global health research has likewise resulted in increased complexity of legal arrangements accompanying funding and benefit-sharing—but without a corresponding increase in legal and negotiation resources in LMIC institutions.

Better contract negotiation expertise in LMIC institutions is likely to improve the distribution of the benefits and responsibilities of collaborative research, such as compensation for overhead costs, data ownership, institutional capacity in research management, technology transfer, and intellectual property rights. Without fair research contracts, a major global opportunity is lost to transfer the kind of research capacities and benefits to LMIC institutions that would enable them to engage in research and innovation on their own terms. For these reasons, strengthening research contracting capacity in LMICs is not merely a matter of fairness. It is key to developing a thriving research and innovation sector in LMICs, which will advance sustainable health, equity, and development.

The fair research contracting guidance document is the culmination of work we at COHRED have been engaged in with key partners over the past few years. The initiative began in 2006, when the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) brought the issue of contracting practice to the attention of WHO’s Advisory Committee on Health Research, by highlighting the difficulties they faced in negotiating ‘equitable’ contracts with research sponsors. COHRED was asked to lead an International Collaboration on Equitable Research Contracts to examine this issue in more detail and...
plan a collective response. The first phase of this response was finalised in May 2009 with the publication of an editorial in the Bulletin of the WHO raising awareness on the issue.

We identified key challenges encountered by LMIC institutions during the research contracting process during a number of key meetings and workshops in 2011 and 2012. At a Bellagio meeting in October 2012, our focus shifted to solutions in the form of contracting checklists and negotiation guidance that would support LMIC institutions engaging in collaborative research. Following this meeting, a number of the participant organisations pledged to form a consortium to move the fair research contracting work forward. This consortium includes BIO Ventures for Global Health, COHRED, the International Centre for Diarrhoeal Disease Research, Bangladesh, the INDEPTH network, the London School of Hygiene and Tropical Medicine, the National Research Foundation of South Africa, Oswaldo Cruz Foundation (FIOCRUZ), Public Interest Intellectual Property Advisors, University of the Witwatersrand School of Law, and the World Intellectual Property Organization.

The issue of inequitable research partnerships is not new. We specifically refer to the efforts by KFPE (the Swiss Commission for Research Partnerships with Developing Countries) which identified 11 Principles of Good Research Partnerships. Our effort is complementary to this. But previous work has not addressed the crucial role that equitable contracts play in defining the nature of research collaborations, in building the foundations for successful long-term partnerships, and in enhancing the research systems of LMICs. The essential difference in our guidance document is that it attempts to shift control over negotiating research benefits to the LMIC partner, instead of reliance on the good intentions of the high income country partner.

Our guidance booklet, titled Where there is no lawyer: Guidance for fairer contract negotiation in collaborative research partnerships, was developed with financial support from the Netherlands–African Partnership for Capacity Development and Clinical Interventions against Poverty-Related Diseases (NACCAP). It highlights the key issues for consideration when entering into formalised research partnerships, and provides tools and resources for negotiating fairer research contracts. The issues addressed in the guidance document include intellectual property rights, ownership of data and samples, capacity building and technology transfer, compensation for indirect costs, and the legislative context of research contracts. These issues can either promote or hinder equitable collaboration, depending on how they are dealt with in the contractual agreement.

On release in June 2013, the guidance was met with an overwhelmingly positive response—including from the Southern African Research and Innovation Managers’ Association (SARIMA), university-based legal departments in South Africa, and from the INDEPTH secretariat, a network representing institutions in 20 countries on three continents, who have all commented on the relevance and value of the booklet to their work with partners.

With support from the Doris Duke Charitable Foundation, we are now expanding this guidance booklet to a cloud-based, universally accessible, interactive resource that LMIC institutions can access to increase their ability to negotiate fair contracts in international collaborative health research. To ensure that the fair research contracting guidance is relevant to the circumstances and needs of those engaging in research partnerships, we are inviting feedback on how the document can be adapted and improved.

This is a joint post with Carel IJsselmuide.
Research in times of conflict

Samba Sow

Scientific research, by definition, is about process. Scientists must follow carefully developed guidelines and established protocols to make sure research is conducted validly, accurately, and ethically. As any field researcher knows, meticulous attention to detail is challenging at the best of times, when obstacles like staff turnover, equipment shortages or delays, power outages, strikes, security concerns, and disruptive rumours are not out of the ordinary. But these “everyday” logistical challenges of doing research are further compounded when political instability surrounds your research site.

In the past year, my colleagues and I at Center for Vaccine Development (CVD) Mali faced immeasurable challenges in keeping research efforts going when the insurgency that has afflicted our country for decades began moving southward and threatening the capital city of Bamako, where our research centre is located.

CVD-Mali is a collaborative enterprise between the Ministry of Health and the University of Maryland School of Medicine that, over the past decade, has employed and trained a cohort of Malian health workers and scientists capable of performing world-class clinical trials and in introducing lifesaving interventions, such as new vaccines, into the routine health system. Our work in Mali has always been challenging. Mali is one of the poorest countries in the world, and decades of political upheaval have resulted in poor infrastructure and development. In particular our surveillance system has suffered, making it difficult to measure and understand disease burden. Only in the past decade have we been able to accurately document and analyze disease burden—a vital step in setting priorities for improving the health of Mali’s children.

We still have much more to learn to prevent illness and death, and the research projects we conduct here are all aimed at that goal. For example, we run one of the seven sites of the Pneumonia Etiology Research for Child Health (PERCH) project. Led by Johns Hopkins Bloomberg School of Public Health, PERCH is a case-control study aimed at updating our understanding of what causes pneumonia in order to better treat patients and prioritize more effective interventions, like vaccines, to prevent the illness in the first place. We are also one the seven sites for the Global Enteric Multicenter Study (GEMS), the largest case-control study of diarrheal disease etiology, treatment, and prevention strategies. In addition, we are conducting two important phase III vaccine trials, a maternal influenza vaccine trial in pregnant women and a meningococcal A conjugate vaccine trial in children 9-15 month old.

These studies are important for their potential to improve child and maternal health in our country, and also because they demonstrate the importance of doing research in low-resource settings, where research to help improve and better target effective interventions is
arguably more important due to scarce resources. Much of our work is also very complex by design, for example, PERCH aims to determine pneumonia aetiology, which is epidemiologically and microbiologically difficult in even the most ideal settings. It is important that we are using modern diagnostic methods and getting samples quickly from patients to laboratories. Clinical trials also must be executed meticulously to ensure adherence to Good Clinical Practice and protection of human subjects.

Leading already complex projects became even more difficult when the coup in March 2012 brought to an end 20 years of representative democracy in Mali. Life in Bamako has been somewhat chaotic since the coup, and a curfew has been in place, limiting all activity to between 6 am and 6 pm. There have also been reports of people ransacking structures and looting and stealing petrol, which prompted the closing of petrol stations around the city. The cover of night has brought sporadic gunfire throughout much of the city, and most Malians have felt safest staying indoors.

During this time, ensuring the safety of CVD-Mali staff and patients has been our utmost priority. As a result, certain protocol-specified study activities have been suspended, while vital activities required to keep patients safe have continued with modification. For example, recruitment of participants across studies has been temporarily suspended, but vital study procedures such as surveillance for serious adverse events following immunization (AEFI) has been ongoing, albeit by telephone, with around-the-clock availability of staff on-site for any participants who present to the study sites. We temporarily suspended home visits for AEFI surveillance to avoid undue risk to our staff, but if patients complain of symptoms, CVD-Mali staff will refer them to a clinic or visit the home during curfew-permitted hours. Home visits will continue when conditions permit. All of our participating clinics have also been able to keep 24/7 medical shifts running to welcome study participants who might present with symptoms or a medical emergency. Our laboratory has also remained operational despite decreased staff. Given the possibility of power outages, CVD-Mali has secured a stock of fuel to ensure that back-up generators can function, which is vital for the cold chain for storage of study vaccine and study samples.

This spring, as violence worsened, my staff and I were putting ourselves in danger just by going to work every day. The uncertainty was unnerving. It was difficult to secure even the most basic supplies, such as kerosene, not to mention vehicles. These realities meant our staff members were frequently unable to report to work.

I often transported specimens myself, when the drivers couldn’t make it to work safely. On more than one occasion, I pulled up to a checkpoint where armed guards questioned whether I was affiliated with Al Qaeda, looking suspiciously at the coolers full of blood samples in the back of my truck. (There is an unfortunate myth here that CVD-Mali doctors are selling blood to Americans so they can bring vaccines into Mali to sterilize the children or infect them with HIV, which made our study even more vulnerable to scrutiny.)

However, thanks to the dedication of my staff and the close communication we maintained with the government, international agencies, and our project and funders around the world, we were able to do our part by keeping our research projects operating, and the integrity of the research is intact. Our staff, thankfully, remained safe. Now the situation has returned mostly to normal here in Bamako, and we hope the fighting that continues in the north will be resolved soon.

I am immensely proud of my team for keeping our research efforts moving forward, the important mission of our project keeping us focused during this difficult time. Studies like PERCH, GEMS, and the Meningitis Vaccine Project are perhaps even more important in low-income countries where ministries of health must do more on smaller budgets and therefore need accurate, timely information on disease burden to prioritize interventions.

These studies are difficult to do in low-resource settings, even more so when instability strikes. While researchers, donors, governments, and other key stakeholders must not ignore the challenges of research during crisis, I urge them not to shy away from these countries either. These studies help make it possible to better design health innovations like vaccines that work well in resource-poor settings.

And there are enough dedicated people willing to stick through the tough times to get the job done.
Clinical trials and global health equity

Paul Farmer

What happens when people who previously did not have access are provided with the kind of health care that most of The Lancet’s readership takes for granted? Not very surprisingly, health outcomes are improved: fewer children die when they are vaccinated against preventable diseases; HIV-infected patients survive longer when they are treated with antiretroviral therapy (ART); maternal deaths decline when prenatal care is linked to caesarean sections and anti-haemorrhagic agents to address obstructed labour and its complications; and fewer malaria deaths occur, and drug-resistant strains are slower to emerge, when potent anti-malarials are used in combination rather than as monotherapy. Given that the benefit of these interventions is hardly in dispute, how should global health researchers approach the task of documenting and disseminating their impact in what are these days termed resource-poor settings? What role does a journal have in fostering that process?

It has long been the case that randomized clinical trials have been held up as the gold standard of clinical research. Typically, individuals are randomized to receive one of two treatments; both patients and the clinicians caring for them are blinded to their treatment assignment; outcomes are rigorously measured among all participants. Since the assignment is random, factors ranging from socioeconomic and nutritional status to comorbid disease should be equally distributed within the two groups, so that confounding does not affect the interpretation of results. This kind of study can only be carried out ethically if the intervention being assessed is in equipoise, meaning that the medical community is in genuine doubt about its clinical merits.

It is troubling, then, that clinical trials have so dominated outcomes research when observational studies of interventions like those cited above, which are clearly not in equipoise, are credited to the point that they are difficult to publish. One of us recently attended a seminar on impact evaluation in which the speaker announced that all health aid should be evaluated, and that the only valid form of evaluation is a clinical trial. Does this mean we should only provide aid if we are not sure that it works? Such a conclusion is patently absurd but it is one consequence of privileging a particular study design over our clinical objectives.

The world we inhabit, as researchers and clinicians and policy-makers and journal readers, is not in equipoise. It is one in which great disparities of risk for disease, and for unequal access to already proven preventions and remedies, are marked and often extreme. For example, it has been demonstrated in Haiti, Cambodia, and in settings across Africa, that, among patients with active tuberculosis and advanced HIV infection, even brief delays in the initiation of ART are associated with increased mortality. In fact, it has been shown in every study in which this question has been proposed and evaluated. It’s not clear that randomized, controlled trials are necessary to show this yet again, especially in settings in which HIV disease and tuberculosis are the ranking causes of young adult death. This is one of the reasons that the recent publication of one South African trial, which sought to compare outcomes with delayed ART to concurrent initiation of combination chemotherapy for both diseases, occasioned recrimination from some ethicists. The debate underscores the question of where research resources should be invested: some of these trials cost tens of millions of dollars. Our own colleagues used rigorous observational methods to reach the same conclusions in Rwanda. The study cost well under US$30,000.

In global health, we often know the right thing to do but struggle to know the right way to do it. The service delivery environments are complex and difficult: there are competing illnesses, limited infrastructure, and scant human resources for both service delivery and for its evaluation. Achieving success in these environments requires new resources, innovation in care delivery models, and research about implementation methods. In such settings, operations research, using observational methods, are often most appropriate. The implementers and their partners identify 1) the goals or objectives for the programme; 2) the chief constraints and barriers to achieving these goals; and 3) research questions that provide insight into how best to overcome these obstacles. These studies move from the questions to which we know the answers (for
patients afflicted by both tuberculosis and advanced HIV disease, when do we initiate ART?) to questions that might optimize clinical outcomes (given that the programme aims to initiate therapy early, are we identifying these co-infected individuals in a timely manner? Does a novel diagnostic improve the speed at which such patients might be enrolled in care or the identification of drug-resistant strains of these pathogens? Does providing community-based support create an environment that allows for better adherence and help prevent the emergence and nosocomial spread of drug-resistant tuberculosis? Do we see the anticipated positive outcomes and, if not, why not?).

In answering these types of questions, context matters. Creating a controlled environment to answer these questions via a randomized clinical trial may remove the context from the research, leaving us knowing the true answer without knowing what the right answer is. Stripping away context, both local and translocal, creates the illusion of equipoise in a world riven by poverty and social disparities. How, then, do we have a body of research where such context matters? All aspects of the research—from prioritizing research questions to interpretation and dissemination of results—must have local involvement and promote a sense of ownership. With the exception of patients enduring both poverty and disease, no one understands contexts and constraints of a care delivery programme better than the individuals who implement and manage them. Disengaging them from research is another way in which context itself is disengaged from the research; it slows the use of results that might improve delivery and inform policy.

We argue that any global health research endeavour should strive to address two disparities if it is to be regarded as in equipoise: first, the disparities of risk (of both disease and poor outcomes due to lack of access to proven therapies) that constitute the backdrop of global health; and, second, the disparities of training and opportunity that explain why research capacity is heavily concentrated far from the settings in which the burden of these pathologies is concentrated.

These disparities occur within countries and across them; they are of course shaped by the same social and economic forces. True equipoise requires that those who design and fund research understand them even as they address ranking health problems, which is the primary goal of delivery programmes, while creating opportunities for mentored training and research. One sure way of achieving these goals is through promoting research agendas generated from within delivery programmes and by allowing implementers and practitioners to be consumers of research results in order to better affect health outcomes among the populations they serve.

So what then is the charge of a global health journal? First, to recognize that the information gleaned from a rigorous observational study may be more useful to programme implementation than information derived from what are now reified as clinical trials. In terms rarely used in research circles, such observational methods should be deemed pertinent to clinical trials of equity. When journals recognize this by publishing more such studies, research funding will likely follow, shifting funding to studies conceived to improve the delivery of prevention and care and to learning through the process of implementation. Second, journal editors can help ensure that results are presented in such a way that any study’s methods can be understood and assessed by implementers and by those setting and revising health policy regarding life-and-death matters, including those mentioned above and many others now emerging. Like Rwanda, these are settings of rapid change in both burdens of disease and in the tools available to address them. Finally, journal editors might...
favour, for review and publication, research that reflects meaningful involvement of the implementers and managers, as research generated in this manner is most likely to address the needs and constraints of health programmes in settings of poverty and high burdens of disease. This, then, is the challenge and promise of a journal dedicated to global health research; to value equity over reified notions of equipoise, to insist on intelligibility over arcana, and to pose questions about plans for dissemination of information that is indisputably of relevance to the wellbeing and very survival of many millions who do not yet benefit from already proven interventions. In this way, journals with global aspirations can help reframe the research enterprise so that it better addresses the true needs of an emerging community of global health practitioners and programme managers, and of the patients and populations they serve.

This is a joint post with Megan Murray and Bethany Hedt-Gauthier.
The road to Abuja+12: Africa is moving

Mustapha Sidiki Kaloko

As Africa’s leaders assemble in Abuja this month for a Special Summit on AIDS, TB and Malaria (Abuja+12) there is progress to celebrate, good things to come, and greater hurdles ahead. The African Union Roadmap on Shared Responsibility and Global Solidarity for AIDS, TB and Malaria (2012–2015) heralds sustained efforts to end the three diseases. With astute and farsighted leadership in Africa the roadmap consolidates the progress that the countries have made in the past twelve years since the 2000 Abuja Declaration and charts the way forward to achieve the set targets.

Focusing on three things that Africa needs to do urgently—decreasing dependency by growing African investments, delivering quality-assured drugs sooner to the people who need them, and improving leadership—the AU Roadmap will help African countries to build long-term and sustainable solutions.

The political will is unquestionable: AIDS, TB and Malaria have remained high on our political agenda with several commitments to address the challenge in 2000 and 2001 (Abuja Declaration), 2006 (Abuja Call) and 2010 (Kampala Declaration). Over the past twelve years, AIDS Watch Africa has served as an African-led advocacy, accountability and resource mobilisation platform to press for the urgent acceleration of continental action to combat AIDS with a broadened mandate in 2012 to also address TB and Malaria.

The results are encouraging: the annual number of people newly infected with HIV in Africa has been reduced by 25% since 2001, the number of children acquiring HIV infection has declined by 24% between 2009 and 2011 and the number of people who died from AIDS-related causes was 32% lower in 2011 than in 2005. Since 2001, nearly 13 million people in Africa have been reached with TB treatment. There are also encouraging signs in the effort to prevent new cases of malaria: the burden of malaria in Africa is down by one third, and eight countries have already achieved the targeted reduction of 75% in the incidence of malaria since 2000.

However, although 29 countries have reached the level of US$44 total health expenditure per capita, 22 of these have out of pocket payments exceeding 20% of total health expenditure. This level is higher than the ceiling at which financial risk protection can be ensured. Countries that have reached the US$44 per capita but have a high level of out of pocket payments still need to focus on developing and strengthening pooled prepayment mechanisms.

While domestic investments for health continue to increase substantially it’s not yet time for Africa to stand on its own. International investments, which have remained stable in recent years, must be sustained and increased. There is need for new and diversified sources of
international investments especially from countries with emerging economies. The potential to identify new sources of tax can also be further explored and various countries have already started along this path. Possible innovative financing tools include airline ticket levies and financial transaction taxes; private sector financing through bonds; and pooled or bulk procurement.

The AUC, Regional Economic Communities, AU Member States and development partners have already risen to the challenge of leading the changes needed to see the vision of the AU Roadmap made a reality. Countries have developed more robust, results focused national strategies and related investment cases. AU member states continue to streamline disease coordination and governance to make best use of limited national human and financial resources.

To accelerate progress in achieving the Abuja commitments, the African Union will continue to work with Member States to encourage them to develop financial investment plans for health, especially AIDS, TB and Malaria, ensure that the AUC’s Pharmaceutical Manufacturing Plan for Africa (PMPA) Business Plan Consortium is fully functional and resourced work with Heads of States and Government to champion the African Union Roadmap at the national, continental and global levels and to oversee its implementation and reporting in their countries in collaboration with the main stakeholders.

However, the fight against the three deadly diseases will remain an unfinished business in 2015. HIV/AIDS, TB and Malaria control should remain a high priority in the post-2015 agenda, together with efforts to strengthen maternal and child health services and expand community health worker programmes. A strong focus on health systems strengthening is also key to making visible progress against these diseases. Coordinated action through regional intergovernmental mechanisms by the African Union and Regional Economic Communities will be critical for fostering national support for strong multisectoral collaboration. Sustained political commitment and an effective global partnership will be fundamental to future progress.
The power of ideas and the ideas of power: from research to policy in global health

Julio Frenk

What shapes the ideas of those with the power to make decisions?

In an effort to respond to this question, I found a commentary I wrote for a newsletter in 1995, in which I stated the following:

“It would be naive to assume that decision-makers always base their decisions on objective evidence about the best means to achieve the desired ends. Often, such evidence is not available. Even when it is, the decision-maker, particularly in the public sector, must balance off the weight of evidence against the economic and political feasibility of following the desired course of action. While it is clear that decisions are made on the basis of many other forces apart from scientific information, it is also true that good evidence can steer those who have the power to decide into a better course of action. In other words, the power of ideas can help to shape the ideas of power.”

We now know that most of the health gains achieved since the 20th century can be attributed to the advancement of knowledge, which improves health through three main mechanisms. First, knowledge gets translated into technologies, such as vaccines, drugs, and diagnostic methods. Increasingly, new technologies in the telecommunications field, such as mobile phones, are also having major impacts on the health of populations.

Second, knowledge is internalized by individuals, who use it to structure their everyday behaviour in key domains like personal hygiene, feeding habits, sexuality, and child-rearing practices.

Finally, knowledge becomes translated into evidence that provides a scientific foundation both for health care and for policy formulation, implementation and evaluation, the third and less known use of knowledge for health improvement.

The value of knowledge to guide decision-making is emphasized by the policy innovations that are being implemented worldwide in search for universal health coverage (UHC). Together with economic, political, and ideological reasons, this search has been fuelled by the need to find answers to a complex epidemiological transition that is imposing a triple burden of ill health on developing countries: the unfinished agenda of common infections, under-nutrition and reproductive health problems; the emerging challenges represented by non-communicable diseases, mental disorders, and injuries; and finally, the health risks associated with globalization, including the threat of pandemics like AIDS and influenza and the health consequences of climate change.

The process of policy innovation needs to be illuminated by research. There are so many unanswered questions about health system performance that a research agenda must be embedded in every reform initiative. Actual
implementation of reform is a fairly rare occurrence, so failing to learn from these experiences condemns us to rediscover at a great cost what is already known or to repeat past mistakes. I like to say that to reform it is necessary to inform, or else one is likely to deform.

The opportunities for research to play a key role in health system reform have been enhanced by the development of new policy tools to gather and analyze information and generate evidence, such as the burden of disease methodology, cost-effectiveness analysis, national health accounts, political mapping, and performance evaluation of health care institutions, among others. These tools give firmer bases for problem definition and for the design, adoption, implementation, and evaluation of policy options.

This type of effort requires a global approach. In fact, the development of improved policy tools is only one of the various challenges we must face in order to link global research to health system reform. We also need to build mechanisms to exchange information, evidence, and lessons. While every policy experience will have features related to its local context, they usually generate lessons for other countries. National health policy initiatives will have a higher likelihood of success if they can also build on the positive experiences made available through global mechanisms for shared learning.

Such mechanisms would help to overcome the false dilemma between national and global research. Defining a common agenda, designing and improving tools for analysis, building a common repository of documentation, and comparing experiences, are all essential to both the national and the global research efforts.

The path is clear: research and policy should walk together. Scientifically derived evidence must be the guiding light for programmes and policies in national governments, bilateral aid agencies, multilateral institutions and civil society organizations. When we can achieve this convergence, we will have at last integrated ideas and power.
Encouraging research; promoting equity

Carissa Etienne

The launch this month of The Lancet Global Health Journal is a welcome development for all of us in the global health community. It reflects both the growing importance of global health issues on the scientific and development agenda and The Lancet’s growing commitment to bringing the results of high-quality research to bear on these issues. The fact that this new journal is The Lancet’s first open-access publication means that its content will be accessible to scientists, planners, practitioners, and public health advocates in countries around the world, rich and poor alike. This in itself is a major step forward toward improving global health equity.

Readers of The Lancet hardly need to be reminded of the importance of research for health. Throughout history, research has been a major driver of health progress. My own organization, the Pan American Health Organization (PAHO), was created in 1902 in the midst of an international fight against the scourges of yellow fever and malaria, which were preventing the completion of the inter-oceanic Panama Canal. Only through the collaboration of international teams of researchers were the vectors of these diseases identified, allowing the implementation of public health measures to bring them under control.

In the last century, research has been essential to major global public health achievements, from the elimination or control of smallpox, polio and other vaccine-preventable diseases to the development of life-saving treatments for HIV/AIDS. It has also supported more subtle health progress, for example, showing that premature babies can thrive through skin-to-skin contact with their parents rather than in isolation in an incubator, and that mothers can safely use milk banks to ensure their babies are well nourished while they work outside the home. It is not an overstatement to say that most of us integrate research into our everyday lives: whether we are deciding what to eat or how to exercise, when we put on a helmet or buckle up in the car, we are constantly choosing options based on the knowledge we have gained from research.

Research is also essential to the growing efforts to strengthen health systems, expand health coverage and improve health equity in countries around the world. Research helps us determine not only what health interventions are safe and effective but also which ones are most cost-effective—knowledge that is essential for increasing the efficiency and sustainability of health systems. Research helps us identify health needs and health gaps, best practices, and new and better solutions. It also points to better ways of preventing health problems before they arise.

Producing, interpreting and successfully applying the results of research is itself a major challenge in low- and middle-income settings. The need for more and more relevant research, and improved capacity to put it into practice, led PAHO Member States in the Americas to endorse a regional Policy on Research for Health in 2009 and led all the member countries of the World Health Organization to endorse a global Strategy on Research for Health. As a result of growing demand and awareness, country investments in research for health have increased. This has led to progress in capacity building to strengthen health research systems, the setting of research priorities to better meet health needs (particularly in low- and middle-income countries), and identification and dissemination of best practices in research. All this has increased the sharing of research evidence, helped to translate that evidence into better products and policies, and focused the work with other sectors to address the determinants of health.

Throughout this journey, The Lancet has been a strong advocate for the production of research and for better use of its results. The new Lancet Global Health will provide a major boost to these efforts, especially in low- and middle-income countries. It will provide much-needed encouragement for researchers from these countries while helping to ensure that research becomes an even more important force in promoting greater equity and better quality of life for people throughout the world.
Changing the perspective: from disease control to healthy people

Anders Nordström

Never before has the health situation improved so fast across the world. At the same time, exposures to major health risks rise just as quickly and dramatically. Looking beyond 2015 it is clear that we are moving from an era focusing mainly on communicable diseases and survival to a time of rapid escalation of non-communicable diseases (NCDs) and the need to put maximum healthy life expectancy at the centre of our work and minds.

What are the implications of those epidemiological and societal changes for governments, for researchers, and for the international health system?

The fact that it is time to focus on health and not merely on disease will have major implications.

Ministers of health will have to move out of their comfort zone and ensure that investments in, for example, energy, infrastructure, gender equality, and food contribute to maximal health impacts. This will require different competencies to work across sectors and a new type of accountability framework.

We need a World Health Organization and not a World Medical Organization. The latest speech by Margaret Chan in Helsinki provides hope that WHO will make the necessary transition. But today the control of disease outbreaks still receives much greater attention and resources than effective work on reduction of major risk factors and the broader determinants of health.

We can learn a lot from UNAIDS and the multi sectoral partnership on how the HIV/AIDS epidemic has been managed. Is it time to close down UNAIDS and address other health problems in the same way as we have addressed HIV/AIDS? Is WHO prepared to take the lead and coordinate the rest of the multilateral system into a co-sponsored and coherent Global Health Program? Or should we expand the mandate of UNAIDS to become UNHEALTH?

The consequence is also that the priority is not primarily more medical research but research on change: policy change, institutional change, and behavioural change.

First, our knowledge today in terms of how healthy policies are developed and politically made real is quite limited. The discipline of political science and further research might help us.

Second, prioritizing healthy people instead of disease control will require different kinds of institutions and cross-sectorial collaboration. This is well known and accepted but how to make it happen and how to provide the right incentives and accountability will require a new type of research.

Finally and most importantly—what does it take to enable people to change their behaviours? There is a fundamental need for more investments in behaviour science to fully understand why people are making healthy or non-healthy choices in terms of lifestyles, and how this knowledge can be translated into actions both at the political and institutional levels.

Looking beyond 2015 we must accelerate our efforts to take forward the present health-related Millennium Development Goals (MDGs) focusing on saving more women’s and children’s lives. However that is not enough. When children survive, they are rapidly exposed to the new generation of health risks and associated NCDs. One might claim that the burden of NCDs is not so high yet in low-income countries but the key message is that we must not wait until we get there. We have a window of opportunity to protect the health of billions of people and control the cost for a rapidly ageing population.

Enabling children who survive their first five years to grow up to stay healthy is an agenda that is closely linked to more sustainable and resilient societies. The choice that must be made is not between a healthy planet or health but a healthy planet with healthy people. Sustainable human development requires that we as human beings are equipped with the knowledge to utilize opportunities and resources to take more healthy decisions.

What are required are societies where values, knowledge, and infrastructure support and empower people to live long and healthy lives. A lot has been achieved but the challenges and future costs in terms of risks and unhealthy live styles are enormous.

It is time to act—politicians, researchers, international organizations, and we as individuals. It is we who matter most and who can take a step today towards a more healthy life and a healthier planet. Governments, institutions, and researchers then have the responsibility to support and to create the necessary conditions and environments.
Research priorities in the post-2015 era

Zoë Mullan

Welcome to The Lancet Global Health Blog! This interactive site will feature opinion pieces from some well known faces in global health, as well as newer kids on the block. It will also act as a discussion forum for the research articles and other content we publish on The Lancet Global Health journal website. In the weeks running up to its launch, we posed a question to those who registered for alerts: “What is the biggest research priority in global health for the post-MDG era?” In the post below, we present what we felt were the most representative answers to this question.

We had 110 responses to the question, from 35 countries. There was a diversity of answers, yet two clear prevailing themes. These were non-communicable diseases (NCDs), particularly obesity, and what we might call “implementation science”. Other topics that featured strongly were mental health and drug resistance.

The respondent who we felt best summed up the urgent need for more research into NCDs was Shireen Rafeeq (Pakistan), who wrote:

“As the MDGs deadline approaches, it is time to move beyond basic health indicators and focus on enabling a productive life for all the people of the world, rich or poor. This can best be done by reducing the burden of non-communicable diseases, which kill over 36 million individuals annually, with 80% of the deaths in the developing world. One of the most important, not to mention easily preventable, determinants of NCDs is obesity. Encouraging the adoption of a healthy lifestyle, including achieving and maintaining a healthy weight, should be the next main research priority in global health.”

Of the other topics proposed, we particularly liked the following from Kakaire Kirunda (Uganda):

“By their nature, global health issues once again remind us that we are living in one global village. From the global burden of tuberculosis and the global AIDS pandemic to avian influenza and the on and off haemorrhagic fevers, especially in Africa, all are global health challenges that necessitate countries working together. However, together with the global nature of these challenges, there has been glocalisation of these issues. And as such, the biggest research priority in global health for the post-MDG era should be on how to unlock community capabilities especially in the global south towards solving these challenges, locally!”

Finally, we picked a response that we felt epitomised the sort of research we hope to disseminate and encourage at The Lancet Global Health. This was written by Anna Dare (New Zealand):

“The most important priority is re-framing how we study global health challenges in order to generate outputs that have currency not just in academia but among those tasked with the role of delivering equitable, affordable and sustainable health care to populations in the face of limited resources. This means asking research questions that generate practical solutions, not merely measure ill-health, using endpoints that focus on health gain instead of disease burden and conducting studies that evaluate process as well as outcome. In the post-MDG era, research must not simply be the study of global health, but the mechanism by which to inform its progress.”

We would like to thank all those who took the time to respond, and encourage others to leave their thoughts in the comments below. The authors of the winning responses above will each receive a coveted Lancet paperweight!
Vivax malaria eradication: where are we now?

Matiana González-Silva

The re-establishment of malaria eradication as an international goal has repositioned Plasmodium vivax on the malaria research agenda. Papers devoted to this species have more than doubled during the last decade, and in recent years, four scientific conferences have been devoted to this malaria species, the last one in May 2013, in Barcelona, Spain.

Although less lethal than malaria caused by P. falciparum, vivax malaria is far more widespread: more than 2·5 billion people live at risk of being infected by a parasite that is also responsible for severe disease, and even death, mostly in Asia and Latin America. However, there is far less research ongoing about vivax basic biology, epidemiology, and intervention strategies. The ratio between P. vivax and P. falciparum publications is still 1 to 4, although this also means a significant improvement considering that it was 1 to 10 only ten years ago.

As discussed during the recent conference in Barcelona, a lingering question remains: will P. vivax be more difficult to eliminate than P. falciparum, as has been claimed in the past?

The question is itself most curious, since major advances have already been made against P. vivax. Most countries that have achieved malaria elimination were predominantly ‘vivax territories’, and so are most regions currently approaching this final goal. This is so despite a number of unique characteristics in the biology of P. vivax that makes its management and elimination particularly challenging.

This species is often transmitted by mosquitoes that bite outdoors and during day time, which renders traditional vector control less effective. Gametocytes develop earlier in the parasite life cycle, allowing transmission to occur before clinical symptoms are apparent. Most importantly, the vivax life cycle comprises a dormant stage that can cause relapses months and even years after the original infection, constituting a reservoir of infection that represents the biggest hurdle for elimination and ultimately eradication of P. vivax.

The biological challenge that P. vivax represents is being addressed by a very few number of scientists. However, encouraging steps are being taken to increase our understanding of hypnozoite biology, including advances in the development of in vitro/ex vivo culture systems, systems biology approaches, and new tincture methodologies that might allow us to distinguish between the two liver stages of this parasite life cycle: hypnozoites and hepatic schizonts.

But many questions remain unresolved. If we could, should we awaken dormant parasites, making them easier to treat? How do we assess, and minimize, the risk caused by primaquine, currently the only licensed radical cure drug available, but which causes haemolysis in patients with severe glucose-6-phosphate dehydrogenase (G6PD) deficiency?

Vivax parasite
In addition to development of new, safer drugs against the dormant stages of *P. vivax*, other tools specifically designed for malaria eradication include vaccines capable of interrupting transmission by eliciting long-lasting immune responses that prevent infection or inhibit gametocyte development, or, as showed by one of the speakers at the conference, attacking the parasite while it develops in the mosquito midgut. There is also consensus that, as good as new tools might be, eradication will be made feasible through use of a combination of interventions, including non-technological components such as strong health and surveillance systems, sufficient funding, and political will.

The use of mass drug administration for both radical cure and prophylaxis, enabling *P. vivax* eradication, remains a matter for debate. Would it be acceptable to administer drugs to populations of primarily healthy people, or would we need to develop a diagnostic tool to identify hypnozoite carriers? Although there is some fear of cultural barriers for accepting what could be perceived as authoritative interventions, it is important to remember that, historically, preventive tools have been very well accepted in public health: travellers to malaria-endemic areas regularly take antimalarial drugs as prophylaxis, mass drug administration is a keystone in the current paradigm for neglected infectious diseases, and vaccines are used massively against diseases for which the risk is minimal as long as programmes are sustained.

*P. vivax* has to be addressed as part of the global strategy against malaria. It co-exists with *P. falciparum* in large parts of the world, it causes significant disease, and its fight requires a combination of strategies. It is not surprising that it will take research translated into implementation, and the best data, to reach long-term goals such as malaria eradication.

WHO is currently preparing a global strategy and operational manual against *P. vivax*, and this species will occupy a key position both in the forthcoming Global Technical Strategy for Malaria Control and Elimination and into the revised Global Malaria Action Plan. Furthermore, the revised Malaria Vaccine Technology roadmap will consider *P. vivax* as a priority for the first time.

This progress leaves the community with a sense of optimism. Investments are giving results, and *P. vivax* is receiving the attention it deserves. However, big challenges also lie ahead, including how to sustain investment for this species, in the context of a shrinking and increasingly competitive research and development envelope.

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