

toward achieving parity of access to such technology.⁴ Medical data that were previously unobtainable can now be streamed in real time from almost anywhere in the world to another location. In remote locations where few doctors are available, interpretation of the data is likely to be increasingly done with computer support, which can be coordinated by community health workers.¹

But many uncertainties surround digital medicine. There are serious concerns regarding privacy and security of data, which have yet to be addressed in any meaningful way. And robust evidence is needed about the benefits of digital medicine in terms of improved outcomes, cost-effectiveness, and the ability of individuals to take more charge of their care. To date, there has been almost no integration of data arising from the traditional doctor and health system with that generated by patients. Until these concerns are resolved, digital medicine may continue to be seen as unwanted, an extension of the electronic medical record story.

Despite these concerns, digital medicine is a rich resource for health-care professionals and patients. The purpose of this new *Lancet* column on digital medicine

will be to delve into important topics in this emerging field with a focus on the promises and provisos of digital medicine, and its potential to influence health and wellbeing and the practice of medicine. My colleagues and I will explore such topics as artificial intelligence, augmented and virtual reality in health, and the medically connected smart home. We start this week by asking how to reboot the treatment of blood pressure.

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I have received personal fees as an adviser from Apple, Walgreens, Quanttus, and Google; grants from the Qualcomm Foundation; fees for a role on the board of directors from Dexcom and Sotera Wireless (ended in 2013); and I hold equity in Sotera and Dexcom.

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Learning from every stillbirth and neonatal death

The period around childbirth carries the highest risk of death for a mother and her baby. Approximately half of all stillbirths and neonatal deaths are preventable with the provision of high quality, evidence-based, and timely interventions.¹ Such interventions can be implemented before and during pregnancy, during labour and childbirth, and in the hours after birth.¹ Three *Lancet* Series, *Every Newborn* (2014),² *Stillbirths* (2011),³ and *Ending Preventable Stillbirths* (2016),⁴ highlighted interventions to reach the ambitious but achievable targets set out by the UN Sustainable Development Goals, and the WHO Global Strategy for Women's, Children's and Adolescent's Health 2016–2030, to reduce preventable stillbirths and neonatal deaths worldwide.

Most of the estimated 2.6 million stillbirths and 2.7 million neonatal deaths worldwide each year occur in low-income and middle-income countries.^{1,5} Most deaths are not registered, reported, nor investigated by the health systems that could have prevented them. The true magnitude of stillbirths and neonatal deaths is under-reported, and information on outcomes around the

time of childbirth is often based on statistical estimates. Knowing the true burden of deaths is important to create awareness of the problem, and to allow analysis of missed opportunities within health-care systems and beyond. A major barrier to having comparable, national-level estimates of causes of stillbirths, is the absence of a single globally recognised stillbirth and neonatal death classification system. Numerous existing classification systems have used different approaches, resulting in restricted data comparability, and none is practical for use across low-income, middle-income, and high-income settings with differing diagnostic capabilities.

The need to better understand why stillbirths and neonatal deaths occur, and what can be done to prevent them, has led to the development by WHO of two complementary documents: *WHO Application of ICD-10 to Deaths During Perinatal Period (ICD-PM)*⁶ and *Making Every Baby Count: Audit and Review of Stillbirths and Neonatal Deaths*.⁷

The WHO ICD-PM is a globally applicable system for classifying perinatal mortality. This system reflects



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the inherently linked health outcomes of a woman and her baby. It brings together the causes and timing of perinatal death—ante-partum, in-trapartum, and neonatal—and maternal contributory conditions, and then applies the tenth revision of the International Classification of Diseases (ICD-10) for the classification of death in such a way that it reflects the local epidemiology. This multi-layered approach also allows clinicians to classify perinatal deaths and compare data across different settings. ICD-PM aims to focus attention on the areas where interventions are needed to improve outcomes for mothers and babies.

Making Every Baby Count: Audit and Review of Stillbirths and Neonatal Deaths provides the methodology and tools for developing a mortality audit system that uses the WHO ICD-PM classification and other frameworks to investigate modifiable factors in perinatal deaths, and to assess the avoidability of each death. As well as providing standardised data collection and summary forms for local adaptation, the guide describes each step of the mortality review process in facilities and proposes an approach to capture and review deaths that occur in communities. It also provides guidance on establishing a legal and ethical environment in which to create quality improvement processes, without fear of blame or punitive actions. Finally, the guide suggests a way forward to scale up from individual facilities to district, regional, and national level, and how to create links to systems of surveillance, civil registration, and vital statistics.

Many countries already use the Maternal Death Surveillance and Response⁸ process as a strategy for

addressing maternal mortality; these countries also use the WHO Application of ICD-10 to Deaths During Pregnancy, Childbirth and Puerperium (ICD-MM)⁹ to facilitate collection, analysis, and interpretation of information on maternal deaths. These new WHO guidance documents on perinatal mortality will enable countries to build on the Maternal Death Surveillance and Response platforms in order to improve perinatal and neonatal health, and are central to quality of care improvement and WHO's quality of care initiative. Both the ICD-PM classification and the Audit and Review of Stillbirths and Neonatal Deaths keep the focus on the mother-baby dyad, and help to identify interventions that will potentially benefit both mothers and their babies.

For policy makers, these tools provide increased clarity on the burden and causes of stillbirths and neonatal deaths, and on the preventive actions needed at each level to avert deaths in the future. Moreover, information gained by use of these tools will make these deaths visible on national policy agendas, in policy and programmatic response, and in vital statistics records. Regional and country offices of WHO, in collaboration with partners working in maternal, perinatal, and newborn health, will provide WHO member states with technical guidance and support to implement these two guidance documents; in particular, working with professional associations and academic institutions for nurses, midwives, and doctors to ensure sustainable implementation.

The burden of stillbirths and neonatal deaths remains unacceptably high. A long-needed, globally applicable classification system for perinatal deaths, and guidance on conducting stillbirth and neonatal death audits, will catalyse efforts to tackle the problem and allocate resources appropriately. By counting every mother and baby, and by understanding the causes of death and the contributing factors, we can end preventable maternal and neonatal mortality and stillbirths. It is now time to make every baby count.

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The authors are employees of WHO and helped develop the guidance documents. We declare no other competing interests.

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UN political declaration on HIV and AIDS: where to begin?

In June, 2016, the UN General Assembly made a political commitment to end AIDS by 2030,¹ endorsing the fast-track approach of the UNAIDS.² This political declaration is unflinching in its characterisation of AIDS as “a paramount health, development, human rights and social challenge”, and is detailed about the structural, programmatic, and normative challenges facing the global response to the HIV epidemic.¹ But as Michel Sidibé, Executive Director of UNAIDS, asserted at the 21st International AIDS Conference held in Durban, South Africa, in July, 2016, “If we are serious about ending AIDS, it is high time to make funding sustainable and predictable”.³

Worldwide financing for HIV and AIDS has been substantial, reaching about US\$19.2 billion in 2015, with funding by affected governments accounting for 57% of all investments.⁴ However, political and fiscal momentum is faltering and international funding is expected to flatline in the next 5 years.⁴ Donor intentions are changing and there are political pressures generated by non-AIDS priorities. Against this background, greater investment in the AIDS response needs to be front-loaded in the next 5 years and reach the \$26.2 billion per year to achieve the UNAIDS fast-track targets. The countervailing pressure, and the source of the urgency in this situation, is that progress made against HIV and AIDS will largely be dependent on enlarged and sustained programmatic activity. At the 21st International AIDS Conference AIDS activists all reinforced this point, as did Bill Gates at the 2016 Nelson Mandela Annual Lecture when he said “If we fail to act, all the hard-earned gains made in HIV in sub-Saharan Africa over the last 15 years could be reversed”.⁵

Although the ending AIDS by 2030 strategy is carefully delineated and politically endorsed, it is financially unsecured; and hard choices await. But the global community cannot afford to wait for a strategic reckoning of expanding needs and diminishing means. Even as we struggle to secure a substantial increase in funding for the fight against AIDS, it is possible to accelerate this life-saving work and reduce costs. There are three areas, all highlighted in the UN political declaration, and reaffirmed at Durban, that need not wait for a best-case fiscal outcome.

The first is HIV prevention—the point of greatest convergence between life-saving and cost-saving by avoiding future treatment costs. Yet currently, the rate of new HIV infections is outpacing enrolment in antiretroviral therapy programmes. Historically, the steepest declines in new HIV infections have arisen from behavioural change,^{6,7} but identifying what is most effective is context dependent.⁸ More research into effective and enduring behavioural change is a priority, alongside other efforts to advance the prevention agenda. The UN political declaration calls for a quarter of HIV and AIDS spending globally to be devoted to evidence-based prevention measures, but further support is needed to plan, fund, implement, and assess them, as current weaknesses in prevention programmes include “variable quality of programme design, the failure to bring interventions to scale, and poor or non-existent monitoring of outcomes”.⁹

Second, the response to HIV and AIDS can be strengthened through universal health coverage (UHC). Arguments that turn on vertical versus horizontal



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