Enhancement of community trust, engagement, and ownership will be key to building resilient systems for health.[4] This includes strengthening community health worker capacity and, more generally, partnering with communities in meaningful ways. More health workers are needed, and training must prepare them for the right competencies—ie, those that enable teamwork and flexibility. Investments should be focused on people. This will help to train more health workers and create employment, notably for young people. And this in turn will foster economic growth.

Early warning systems for all health threats should lead to full implementation of the International Health Regulations.[5] In parallel, information and surveillance systems need to be reinforced and might be most efficiently deployed at a regional level, through multicountry networks, to allow for cross-border control and response.

Substantial external financing will be needed to achieve many of these objectives. One important priority will be for countries to ensure donor coordination. Careful thought is needed about the financial landscape in these countries, as well as consideration of the financing policies needed to meet resource needs and ensure sustained recovery. The financing package will need to include mechanisms to reduce the burden of health expenditures for the populations by promoting financial protection, and to move towards universal health coverage goals.[6]

Finally, we need to consider how all partners can work together to maximise efficiency and effectiveness. This includes discussing roles and responsibilities that complement one another and take advantage of each one's relative strengths. Accountability for both countries and partners will be at the centre of building resilient systems for health. The work in supporting Ebola-stricken countries will need long-term commitments from all key actors. The durable gains associated with building a functional health system cannot be compromised for more visible but less effective "quick wins".

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Global health metrics needs collaboration and competition

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The most recent update on the global, regional, and national causes of death, presented in *The Lancet* by the GBD Mortality and Causes of Death Collaborators,[1] a large international consortium of researchers led by the Institute for Health Metrics and Evaluation, includes an unprecedented amount of data. The Global Burden of Disease Study (GBD) 2013 has provided internally consistent estimates of the causes of death for 1990–2013. The yearly number of deaths worldwide increased as a result of population expansion, from 47·5 million in 1990, to 54·9 million in 2013. In relative terms, mortality rates have steadily decreased, leading to an increase in global life expectancy from 65·3 years to 71·5 years.[1]

The clearest progress was in reduction of global child mortality from infectious causes such as pneumonia and diarrhoea, accompanied by decreasing mortality rates from cardiovascular diseases and cancer in high-income regions. The HIV/AIDS pandemic was the greatest challenge to overall progress during this period, resulting in substantially shortened life expectancy in sub-Saharan Africa. Non-communicable diseases gradually emerged as the most prominent contemporary threat to global public health. The ageing

global population has increased the absolute number of deaths related to non-communicable diseases, although relative mortality rates improved for most diseases. A small number of non-communicable diseases, including pancreatic cancer, atrial fibrillation and flutter, diabetes, chronic kidney disease, and drug use disorders, ran counter to these trends and became increasingly deadly in both absolute and relative terms.[1] The authors present fairly precise estimates of the number of deaths owing to 240 different causes in 188 countries over a 23-year period; an astonishing number of outputs, based on far more input data.

In many fields of modern science, collection and analysis of so-called big data, generated by collaborations between hundreds of scientists, has become a major driver of new discovery. Notable examples include the Human Genome Project, the search for the origin of mass at the Large Hadron Collider, the Sloan Digital Sky Survey in astronomy, and genome-wide association studies in genomics and personalised medicine.[2] Such science generates new information on a large scale that fills many gaps in knowledge and enables further scientific progress. It is not surprising that such efforts have come to dominate evaluations of research impact in recent years.[3] Modern science is benefiting from massive collaborations. However, big data science is also associated with risks. Research projects can become so large that they acquire a political dimension, mainly because of their anticipated effect on subsequent policies and funding decisions. Once a network of researchers achieves a monopoly over an area of research, incentives to perform might fade, while incentives to preserve that monopoly rise. When the slow-moving, publicly funded Human Genome Project suddenly had competition from the privately funded Celera Genomics, a dramatic race began to complete the human genome sequence, which accelerated and improved both efforts.[4] Similarly, thousands of scientists working at the Large Hadron Collider were arranged in the two parallel experiments—ATLAS and CMS—that were expected to confirm each other's findings independently. For genome-wide association studies, replication of findings is a norm before results can be seriously considered.[5]

As an emerging field of science, global health metrics seems to be following a similar evolutionary path to other big data disciplines. Estimates of the causes of the global burden of disease, disability, and death are important because they guide investment decisions that, in turn, save lives across the world.[6] Historically, the responsibility for those estimates rested largely with WHO and its academic partners. Although WHO's team of experts have been doing fine technical work for many years, its monopoly in this field had removed incentives to invest more time and resources in continuous improvement.[7] The emergence of the Institute for Health Metrics and Evaluation, generously supported by the Bill & Melinda Gates Foundation, has changed the science of global health metrics in a similar way to Celera Genomics' competition with the Human Genome Project.

It is hardly surprising that the publication of GBD 2010 sparked controversy.[8] The Institute for Health Metrics and Evaluation struggled to generate support, legitimacy, and acceptance for their findings. Their many invited collaborators expected unrestricted access to all input data, sharing of methods, clear timelines, fair and transparent distribution of funding support, and agreement on the acknowledgment of credit. Researchers outside the GBD 2010 collaboration expected provisions for independent replication of all results. Some collaborators withdrew from the GBD 2010 project over those concerns. Moreover, WHO chose not to acknowledge the GBD 2010 estimates because of similar concerns, thus creating open competition.[9] Some feared that the existence of parallel global health estimates would confuse policy makers in low-income countries and reduce pressure on non-performing governments to improve health of their jurisdictions.[10]

The initial concerns are now being attenuated by the benefits of competition. WHO mobilised their staff and collaborating academic expert groups to revise their methods and consolidate the estimates for which they are traditionally strongest—eg, on child and maternal health, malaria, tuberculosis, and HIV/AIDS.[11] They launched a series of meetings to develop clear guidelines for reporting global health estimates that could be officially endorsed by WHO.[9] Those meetings included scientists from the Institute for Health Metrics and Evaluation, ensuring communication between the two groups and possibly suggesting a future change in policy towards the GBD estimates. Meanwhile, the Institute for Health Metrics

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For more on the **Human Genome Project** see https://www.sanger.ac.uk/about/history/hgp/

For more on the **Large Hadron Collider** see http://home.web.cern.ch/topics/large-hadron-collider

For more on the **Sloan Digital Sky Survey** see http://www.sdss.org/

and Evaluation responded to criticisms and improved its practices. The new GBD 2013 estimates show the vast expansion of collaborators, acquiring primary information even from countries that traditionally provide little data, such as China, Mexico, Turkey, and Russia.[1] The description of methods is more detailed and transparent, and the instruments of analysis—many of which are now available online—are becoming increasingly sophisticated. Particular care was taken to address the key weaknesses, correcting questionable estimates from GBD 2010. Unfortunately, the GBD 2013 estimates fall short of allowing full independent replication of all results.

A comparison of the GBD 2013 estimates to those of WHO and its affiliates suggests that we should expect the grand convergence between two sets of estimates to begin this year, with the global causes of child deaths being a prime example.[11,12] The remaining differences are, in fact, useful because they point to the most important data gaps or the most controversial sources of data used. They will help focus subsequent debate on an increasingly specific set of questions. Therefore, the competition between WHO and the GBD has benefited the entire global health community, leading to converging estimates of the global causes of death that everyone can trust.

The GBD initiative has emerged as a well-organised and rapidly growing collaboration that is now seriously challenging WHO's role in generating global health estimates. WHO maintains its position for several key strengths, for which it benefits from collaboration with affiliated groups of external academics. However, it will need to rethink its own role and massively scale up its capacity to generate global health estimates to remain competitive. WHO's indecision over investment in global health metrics, or over the role it should have in the long term, will help the GBD collaboration to gain widespread support for its estimates. Idleness by WHO might even lead to a new monopoly in global health metrics, with the centre of activity moving from Geneva to Seattle. Such a scenario might again simplify global health politics but, in the absence of healthy competition, science could be the poorer.

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Trafficking, sex work, and HIV: efforts to resolve conflicts

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Trafficking occurs in sex work as it does in other types of labour. However, the issue of trafficking in sex work has been singled out, its scale and potential for harm frequently mis-stated or exaggerated to bolster antiprostitution arguments, inflame public opinion, and justify repressive and counterproductive police action.[1–5] Conflation of sex work with trafficking leads not only to difficulties with definition and harm to sex workers on the ground, but also to conflicts that undermine HIV prevention.

The UN definition of trafficking requires coercion and movement or harbouring of people for the aims of exploitation, and estimates of its prevalence vary widely.[4] A useful operational definition of trafficking