



## Longer lives and unfinished agendas on child survival

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The Global Burden of Disease Study 2015 (GBD 2015) is a landmark event.<sup>1-7</sup> Building on the earlier GBD studies it provides a detailed snapshot of the state of global health and an analytic approach to tracking this dynamic picture. As the international community embarks on the transition from the Millennium Development Goals (MDGs) to the Sustainable Development Goals (SDGs), GBD 2015 is a critical part of the toolkit for measuring progress and—critically—holding governments to account.

So what are the big themes in GBD 2015? Perhaps the biggest revolves around global demography. Our generation is living longer—a full decade longer—than in 1980.<sup>1</sup> The profound demographic shifts associated with increased life expectancy and falling child mortality are generating new challenges for health systems. As we live longer the burden of non-communicable disease is rising, along with the attendant costs of treatment.<sup>1</sup> The demographic transition now underway in developing countries comes with the transition to a disease burden in which the ailments of ageing—cancers, ischaemic heart disease, cirrhosis, and Alzheimer’s disease—and injuries figure more prominently in years lived with disability (YLD).<sup>2</sup> The paradox of our era, powerfully captured in GBD 2015, is that as health indicators have improved globally, more people are spending more time with functional health loss, and morbidity is increasing in absolute terms. This has far-reaching implications not just for health-system financing and service delivery, but also for economic growth and wellbeing.

GBD 2015 also provides a salutary reminder of the human costs of conflict. In just a decade, the war in Syria has reduced male life expectancy by 11.3 years.<sup>1</sup> What GBD 2015 does not capture is the burden associated with conflict-related trauma—and this may be an area for refinement in future studies. Children account for a large share of that burden. In 2015 the number of people displaced by armed conflict and disasters, a proxy for exposure to conflict-related traumatic events, reached record levels of over 65 million.<sup>8</sup> Distressingly, children accounted for over half of the world’s refugees and there are now some 50 million children living either as refugees or as internally displaced people.<sup>9</sup> More than half of them have fled violence and insecurity.<sup>9</sup> Failure to invest in psychosocial support and opportunities for education is robbing these children of a chance to rebuild their lives, with damaging consequences for their future prospects. The health systems of many conflict-affected countries and neighbouring states receiving refugees are ill equipped to finance and deliver support on the required scale.<sup>10,11</sup> Yet the international aid system is failing to respond.<sup>12</sup>

Another central, if understated, theme in GBD 2015 is that in celebrating the very real achievement of the MDG era, governments have failed to recognise the scale of the shortfalls from the targets that were set. Maternal health is a case in point. Only ten countries achieved the MDG target of reducing maternal mortality by three-quarters.<sup>6</sup> There were 24 countries, many of them affected by conflict and state fragility, that had a maternal mortality ratio greater than 400 in 2015.<sup>6</sup> Disparities between countries are widening. This is reflected in the sharp increase, from about 68% in 1990 to more than 80% in 2015,<sup>6</sup> in the share of maternal deaths accounted for by haemorrhage—the main cause of maternal death in the poorest countries. Changing this picture will require governments and aid donors to focus on the development of health systems equipped to deliver universal antenatal care and skilled birth attendance. More than that, GBD 2015 provides governments around the world with a salutary reminder that far greater emphasis must be placed on maternal health care if the more ambitious 2030 goals are to be achieved.

Child survival is another area marked by unfinished MDG business. GBD 2015 highlights the good news that child death rates are falling at an accelerating pace since



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2000—5.8 million children younger than 5 years died in 2015, which represents a 52.0% decrease in the number of under-5 deaths since 1990.<sup>5</sup> The divergence highlighted in GBD 2015<sup>5</sup> between the gains expected on the basis of wider improvements in social and economic indicators and the progress achieved reflects the extraordinary impact of national policies and international cooperation. The scaling up of multiple health interventions, including insecticide-treated bednets, prevention of mother-to-child HIV transmission, introduction of new vaccines, and integrated community-based health interventions on maternal and child health have delivered tangible results in terms of lives saved. The bad news is that the world fell far short of the MDG4 target of a two-thirds reduction in the under-5 mortality rate between 1990 and 2015. Under-5 mortality fell at an annual average rate of 3% between 1990 and 2015, compared with the 4.4% rate required to achieve the MDG target.<sup>5</sup> Another 14 million children would have survived had the target been met.<sup>13</sup>

GBD 2015 reinforces wider concerns over prospects for achieving the 2030 targets set for child survival. Admittedly, these targets are not well framed. The SDG ambition is to end “preventable” deaths among newborns and children younger than 5 years, with all countries aiming to fall below quantitative threshold indicators (respectively, 12 and 25 deaths for every 1000 livebirths). Unfortunately, while the thresholds have been set at a level that constitutes a high level of ambition for many countries in sub-Saharan Africa, for most countries in south Asia, east Asia, and Latin America they represent a softer target than the two-thirds reduction goal specified under the MDGs. If the aim is to end “preventable deaths”, the thresholds should have been set far lower—and there is a danger of governments viewing the SDGs on child survival with some complacency. That would be unjustified. Projections by UNICEF indicate that there are 47 countries which need to increase the pace of progress on child mortality to achieve the 2030 goal of 25 or fewer deaths per 1000 livebirths.<sup>14</sup> Within this group, 30 will have to at least double the current rate of reduction.<sup>14</sup>

GBD 2015 turns the spotlight on some of the underlying challenges. Three major themes stand out. First, neonatal mortality is falling more slowly than child mortality—neonatal deaths fell from 4.6 million in 1990 to 2.6 million in 2015, decreasing by 42.4% (compared with 52% for under-5 deaths).<sup>5</sup> Preterm birth complications and neonatal encephalopathy were the two leading

causes of under-5 deaths in 2015.<sup>5</sup> In south Asia, neonatal mortality rates are now more than double post-neonatal mortality rates.<sup>5</sup> With 45% of all child deaths occurring in the first day, week, and month of life, there is an urgent need to gear the health-system response towards effective provision of antenatal care, obstetric provision, skilled birth attendance, and postnatal care.<sup>14</sup>

Second, GBD 2015 helps to turn the spotlight on cause-specific death rates. Lower respiratory infections are the main cause of post-neonatal under-5 deaths and the third leading cause of child deaths overall.<sup>15</sup> These infections account for around 16% of mortality, with diarrhoeal diseases (the fourth leading cause of death in 2015) accounting for another 9%.<sup>14</sup> Pathogen counterfactual analyses in GBD 2015 identify pneumococcal pneumonia and rotavirus as the leading causes of deaths from the two infections in 2015.<sup>1</sup> In both cases, effective vaccines are available, in part as a result of private–public partnerships developed under multilateral initiatives. The development and provision of the pneumococcal vaccine through the Advance Market Commitment of GAVI, the Vaccine Alliance<sup>15</sup> is one of the success stories of the MDG era—and a potential catalyst for accelerated progress to 2030. An important challenge for international cooperation is to increase funding and accelerate programmes to roll out the vaccines now available. However, vaccines are not a substitute for efficient and equitable health systems. Indeed, their effectiveness and reach depends on the presence of skilled health workers, cold storage chains, and well governed procurement and delivery systems. More generally, sustained progress in combating both the major infectious disease killers like pneumonia and diarrhoea and neonatal deaths will require a strengthened focus on the development of health systems rather than disease-specific and cause-specific interventions.

The third big theme to emerge from GBD 2015 is that policy makers have to climb out of their sector silos. Cause-specific analysis of under-5 deaths can obscure the critical importance of background risk factors, including nutritional status, inadequate access to clean water and sanitation, and poverty. As countries progress towards the SDG targets, disparities in these areas are likely to become more important. For example, undernutrition is implicated in around half of child deaths.<sup>15</sup> As highlighted in GBD 2015<sup>15</sup> progress in reducing nutritional deficiencies is slower than in other areas and this represents an obstacle to the 2030 goals. So, too, does the rapidly increasing share

of global poverty accounted for by Africa's children—a by-product of demography, high levels of inequality, and slow economic growth. Recent projections suggest that about 148 million African children will be living below the US\$1.90 international poverty threshold in 2030, representing 43% of all global poverty.<sup>16</sup>

Much of the unfinished business associated with the MDGs can be traced to failures of equity, an issue that is present but understated in GBD 2015. The poorest and most disadvantaged children and mothers face increased health risks. Yet they are the least likely to be diagnosed, treated, or supported through health services. Some of the greatest health disparities are to be found in precisely those areas—antenatal care, skilled birth attendance, and postnatal care—needed to accelerate progress on child survival and maternal health.<sup>17</sup> Future GBD studies could usefully provide data on DALYs and years of life lost (YLL) disaggregated by socioeconomic status and location. The Socio-demographic Index (SDI) is a useful way to measure disparities between countries, but it could be supplemented to a comparable method for capturing disparities within countries.

Perhaps the greatest failing of the MDG era was a tendency to focus reporting on national averages, rather than on what was happening to inequality and the progress achieved by the most disadvantaged. The underlying assumption was that the benefits of expanded health provision would automatically trickle down through all social strata. That assumption was fatally flawed. Under the SDGs governments have now committed to “leave no one behind” and to ensure that the most marginalised achieve the most rapid progress. In the case of child survival, the 2030 goal of ending preventable deaths by 2030 cannot be achieved unless death rates among the poor fall more rapidly than the average. That is why the idea of universal health coverage has to be reinforced by the principle of what the *Lancet* Commission on Investing in Health's Global Health 2035 report described as progressive universalism, or progress that improves national average indicators while delivering higher-than-average gains for the poor.<sup>18</sup> And it is why we need GBD 2017 to provide a data window on who is getting left behind and by how far.

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I declare no competing interests.

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