Progress and challenges in ensuring healthy births and babies

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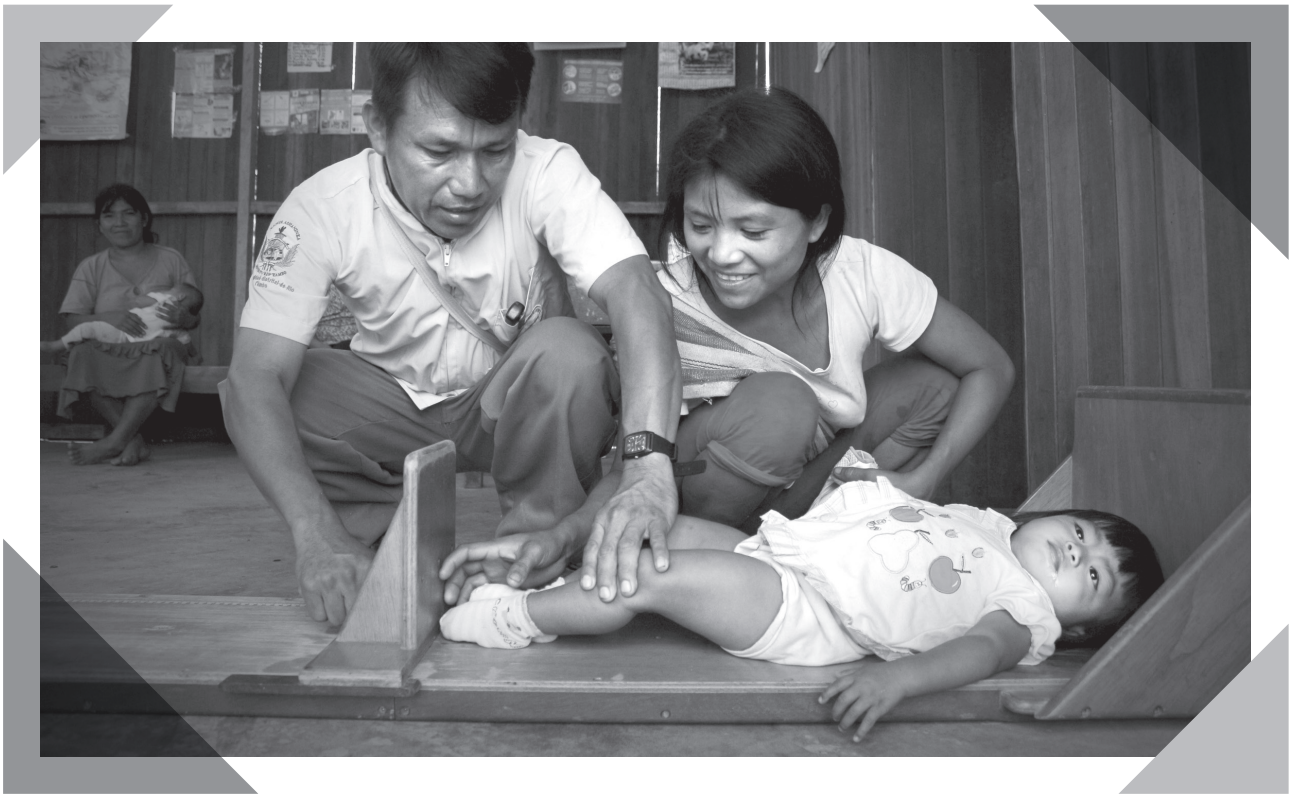

As child mortality falls, attention is turning to how to better identify children at-risk for developmental delays and disabilities and how to optimise child development and long-term economic productivity potential. Photo • Courtesy *Asociación Red Innova*

Millennium Development Goals 4 and 5 have been remarkably effective in galvanising advocacy and action on maternal and under-5 mortality over the past 15 years. As the Sustainable Development Goals are introduced this September, what have we learned and what comes next to ensure healthy births and babies around the world? This article reviews some major global trends in newborn health and survival, and considers major priorities for investment and actions to address the unfinished agenda.

A healthy start to life sets the trajectory for future health and neurodevelopment, and ultimately for adult productivity and ability to contribute to poverty alleviation and economic growth. Since 1990 the global burden of under-5 child deaths has been cut approximately in half (UNICEF/United Nations Inter-agency Group for Child Mortality Estimation (UN IGME), 2014). Even better, the annual rate of reduction (ARR) in child deaths has accelerated in the past decade, from 1.2% in 1990–1995 to 4% in 2005–2013, aided by the increased attention afforded through the Millennium Development Goals (MDGs), introduced in 2000, and movements such as the UN Secretary General's Every Women Every Child initiative, launched in 2010.

As global child deaths come down, however, the proportion that occurs in settings of conflict and political instability is rising. Excluding India and China, nearly half of child deaths now occur in such settings. This 'grand divergence' – with settings of poor governance increasingly left behind – has serious global implications beyond health (such as security) and makes urgent the need to address inequalities and increase services in these challenging contexts (Wise and Darmstadt, in press).

Another worrying trend is that progress in reducing the annual 2.9 million neonatal deaths in the first 28 days after birth lags substantially behind that for children

older than one month (UNICEF/UN IGME, 2014). At present rates of decline, it is stunning to consider that it will take over a century for African newborn babies – and nearly that long for babies born today in South Asia – to have the same survival probability as those born in Europe or North America (Lawn *et al.*, 2014). What's more, these timelines for sub-Saharan Africa and South Asia are more than three times slower than it took for a similar transition to occur in high-income industrialised countries several decades ago, despite the availability of many more interventions now than existed then. Surely inequality on such a grand scale demands more concerted action.

Uneven progress

Success in averting child deaths has been primarily in conditions such as measles, HIV, diarrhoea, pneumonia and malaria in children older than 1 month (Liu et al., 2015). In contrast, the conditions with the slowest progress are largely those of newborns, reflecting in large part the increased investments that have been made in child health – for example through PEPFAR (the United States President's Emergency Fund for AIDS Relief), GAVI (Global Alliance for Vaccines and Immunisation, the Vaccine Alliance), the Global Fund to fight AIDS, Tuberculosis and Malaria, Roll Back Malaria, President's Malaria Initiative, etc. – over the past decade but which have largely neglected newborn conditions and have essentially forgotten stillbirths (Darmstadt *et al.*, 2014). Thus, the proportion of under-5 child deaths that occur in the neonatal period is rising, and is now at 44% globally and over 50% in five major World Health Organization regions (UNICEF/UN IGME, 2014). Moreover, among major killers of children, progress has been slowest for preterm birth and this past year, for the first time, preterm birth became the top cause of death in children before their fifth birthday (Liu *et al.*, 2015).

Stillbirths (defined by the WHO as 'a baby born with no signs of life at or after 28 weeks' gestation') are particularly neglected on the global agenda. Interventions to prevent stillbirths are known, and many have collateral benefits for maternal and newborn health (Bhutta *et al.*, 2014). However, progress in addressing stillbirths is almost flat – in high-mortality countries the ARR was only 0.6% from 2000 to 2009 – reflective of the nearly complete lack of political will, funding and programmes to address stillbirths, including 1.2 million that occur abruptly during childbirth largely due to lack of skilled assistance (Darmstadt *et al.*, 2014).

As child survival improves, the global population of adolescents grows (UNICEF, 2012), as does evidence for the importance of pre-conception nutrition for ensuring healthy pregnancies and healthy births. However, global attention to the identification of, and investments in effective platforms for reaching adolescents with services is lagging. Very recently, however, adolescent health has begun to appear on the global public health agenda, for example with the establishment of a *Lancet* Commission on Adolescent Health, and inclusion of adolescents in the new Every Women Every Child strategy 2.0, called the Global Strategy for Women's, Children's, and Adolescents' Health .

In my view, there is an intervention 'pile-up', with ineffective introduction of interventions and implementation of programmes at scale (Darmstadt *et al.*, 2014). For example, whereas 16 proven interventions were identified in the 2005 *Lancet* Newborn Survival series (Darmstadt *et al.*, 2005), analyses for the Every Newborn *Lancet* series published in 2014 identified 59 pre-conception, antenatal, intrapartum, and postnatal interventions (Bhutta *et al.*, 2014). Tragically, however, coverage for many of the most effective interventions (such as newborn resuscitation) is unknown due to lack of global data, or has been stagnant (for example, Kangaroo Mother Care[1]) (Darmstadt et al., 2014; Bhutta *et al.*, 2014).

On a more positive note, another trend in child health is that as mortality rates have come down, the critical importance of actions to optimise child development has received increasing attention. It was only in 2014, however, that the first analysis of the global burden of disabilities stemming from early-life (newborn) conditions was published (Lawn *et al.*, 2013). The analysis

showed that in high-income countries, where neonatal mortality rates are low, disability rates are also relatively low due to the provision of good-quality advanced care for preterm and critically ill newborns. In low-income countries where mortality rates remain high, disability rates are also low, but for a very different reason: in these settings, infants at high risk for disabilities by and large do not survive. Perhaps most illuminating was the situation found in many middle-income countries. Here, where survival is improving but the quality of care is lagging – particularly more technically advanced care for very small and sick newborns – disability rates have risen over the past two decades and now are relatively high. Importantly, analyses suggest that improving the quality of care for mothers and infants who seek care in health facilities – addressing missed opportunities – could avert an estimated 2 million maternal and newborn deaths and stillbirths per year around the world (Lawn *et al.*, 2014). Arguably, ensuring quality of care in health facilities is one of the most important priorities of the decade ahead.

Perhaps the most important major global initiative of recent years for advancing newborn survival and health and for averting stillbirths is the Every Newborn Action Plan (ENAP), endorsed at the 2014 World Health Assembly by the 194 WHO member states. The ENAP (and associated *Lancet* Every Newborn Series) provides the first global goals for reductions in neonatal mortality and stillbirths, along with clear recommendations for what is needed to accelerate progress.

Unfinished agenda in assuring healthy babies

To accelerate progress, I would like to highlight four key elements, consistent with the ENAP:

1 improve care at birth and care for small and sick newborns
2 improve equity for maternal and newborn care
3 reach every woman and newborn and achieve impact at scale
4 politically prioritise healthy births and healthy babies in high-burden low- and middle-income countries and in marginalised populations within those countries.

Improve care at birth and care for small and sick newborns

An estimated 2.3 million maternal and newborn deaths and stillbirths occur in the approximately 48-hour period between onset of labour and the end of the birth day (Lawn *et al.*, 2014). Obstetric care during labour and delivery has the potential to avert 41% and 70% of all newborn deaths and stillbirths, respectively, and brings a quadruple return on investment by also preventing maternal deaths and preventing child neurodevelopmental delays due to adverse birth events (Bhutta *et al.*, 2014). In addition, care for small and sick newborns can avert 30% of all newborn deaths. Coverage for many of these interventions in low- and middle-income countries remains exceedingly low – for example just 11% for simple thermal care and less than 5% for Kangaroo Mother Care (Darmstadt *et al.*, 2014; Bhutta *et al.*, 2014) – and thus greater attention is needed to closing the evidence–practice gap. Greater investment is also needed in discovery of new preventive interventions for preterm birth, given major gaps in understanding of the mechanisms of preterm birth and thus lack of measures to prevent its occurrence.

Overall, nearly 3 million lives of women, newborns and stillbirths could be saved each year through high coverage of care around the time of birth and care of small and sick newborns at an additional running cost of only 1.15 dollars (US) per person in the 75 high-burden low- and middle-income countries (Bhutta *et al.*, 2014). Arguably, increased focus here has the greatest potential for accelerating progress in the coming decade.

Improve the quality and equity of maternal and newborn care

Quality improvement in maternal and newborn care provides substantial opportunity to improve the distribution, delivery and impact of interventions (Dickson *et al.*, 2014). Improving availability of and access to primary healthcare workers equipped with knowledge, competencies and essential commodities will be key for saving lives and optimising neurodevelopment. Improving gender equality and women's empowerment, pre-conception nutrition, and the ability to plan one's family are particularly important avenues for advancing maternal and newborn health and survival.

Several approaches to empowering women and girls are associated with improved maternal and newborn health outcomes, for example education, ensuring equitable access to household and community resources and decision-making authority, and physical safety (Gates, 2014). However, much remains to be learned about the mechanisms and pathways through which addressing gender inequalities and promoting women's and girls' empowerment enhances health and development outcomes.

In order to prevent deaths in small babies and optimise child development, greater attention needs to be paid to the nutritional care of adolescent girls and women in the pre-conception period and during pregnancy and lactation. An estimated 15 million babies are born preterm and over a quarter (27%) of all babies born (32 million) in low- and middle-income countries are small for gestational age (SGA) (Katz *et al.*, 2013). These conditions increase risk for mortality, especially when they occur simultaneously. Preterm and SGA babies are also at increased risk of poor growth – 20% of postnatal stunting and 30% of wasting are attributed to being born SGA – neurocognitive impairment, and adult-onset diabetes and cardiovascular diseases. Improved programmes for adolescent and pre-conception nutrition (such as folic acid supplementation) are urgently needed to address these challenges.

An estimated 222 million women and girls – 162 million of them in low- and middle-income countries – want but lack access to contraceptives, information and services, and are defined as having an unmet need for family planning (Singh and Darroch, 2012). Based on estimates for the year 2012, addressing unmet need for family planning in these countries with the use of modern contraceptives would avert 54 million unintended pregnancies, 26 million abortions, 79,000 maternal deaths, 600,000 neonatal deaths, and 500,000 post-neonatal infant deaths annually. Family planning programmes increase contraceptive use and reduce unintended and high-risk pregnancies such as those spaced too closely (Cleland *et al.*, 2012). Thus, family planning is a powerful approach for improving the health of women and their newborns and children. Recent commitments by donors, country governments, private sector and civil society at the London Summit on Family Planning to advance family planning in low- and middle-income countries provide a key opportunity to advance maternal and newborn health and survival.

As child mortality falls, attention is turning to how to better identify children at-risk for developmental delays and disabilities and how to optimise child development and long-term economic productivity potential. Several global initiatives are underway to validate measurements of child development; define effective interventions across relevant sectors, including health, nutrition, education, child protection and social protection; and identify delivery approaches to simultaneously achieve improved child survival and child development at large scale in countries.

Reach every woman and newborn and achieve impact at scale

Data are lacking on coverage of many interventions for averting newborn deaths and stillbirths (for example: clean delivery practices, newborn resuscitation, prevention and management of hypothermia, Kangaroo Mother Care, case management of neonatal infections) and on quality of care measures (Darmstadt *et al.*, 2014). Moreover, over one-third of babies in South Asia and sub-Saharan Africa never receive a birth certificate, most newborn deaths are never registered, and stillbirths are invisible in most countries (Lawn *et al.*, 2014). Improved vital registration, facility-based perinatal data systems, and household surveys including additional neonatal and stillbirth indicators, as well as improved metrics and tracking for neurodevelopmental impairment, are urgently needed.

Common principles which have emerged from analysis of country programmes which have been successful in achieving newborn health impact at scale include:

- promote strong national leadership and convening of stakeholders (from government, civil society, academia, the private sector) around newborn health
- engage with communities to understand the local social and cultural context, including community

beliefs and practices, as well as local policies, health systems, partners, and evidence for what works
- design solutions in a participatory manner, addressing bottlenecks and missed opportunities, and integrating interventions into programmes for care across the continuum of reproductive, maternal and child health and nutrition
- balance demand (for example behaviour change) and supply-side interventions (for example commodities)
- link community and facility-based care
- monitor progress and use data in real time to adapt and improve the process and coordination of implementation
- spread solutions via networks and primary healthcare delivery channels
- ensure accountability for results at all levels.

(Darmstadt *et al.*, 2014).

Politically prioritise healthy births and healthy babies in low- and middle-income countries

To accelerate global progress, countries where the burden of neonatal morbidity and mortality and stillbirths are highest must prioritise newborn health within their budgets, policies and programmes. Major emphasis needs to be placed on ensuring that all groups working in these countries on women's and children's health and nutrition include the newborn within their programmes, and ensure that they reach the poorest and most marginalised groups.

Note

1 Kangaroo Mother Care is an approach to the care of preterm and/or low-birthweight infants in which mothers and families are the main providers of the biological (warmth and food, for example exclusive breastfeeding) and psycho-emotional needs (love, caring and comfort) needs of their newborn. The infant is held continuously in the kangaroo position, in direct skin-to-skin contact on the mother's chest.

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