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Tackling pneumonia and diarrhoea: the deadliest diseases for the world's poorest children

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On June 8, 2012, UNICEF released a report, *Pneumonia and diarrhoea: tackling the deadliest diseases for the world's poorest children,*[1] that presents a compelling argument for greater action for all children, but especially the most vulnerable, on these leading causes of child deaths. Pneumonia and diarrhoea together account for nearly a third (29%) of all deaths among children younger than 5 years, a loss of more than 2 million lives each year.[2]

This staggering toll of childhood death is concentrated in the world's poorest regions and countries.[1] Treatment of pneumonia and diarrhoea remains unconscionably low, especially among the poor who are also less likely than the wealthy to benefit from preventive measures.[1] The UNICEF report highlights the tremendous potential to narrow the child survival gap both across and within countries by focusing greater commitment, attention, and funding on these leading causes of child deaths. This report follows a 2010 UNICEF study[3] that indicated equity-focused approaches to child survival are right in principle and in practice too.

The 2012 UNICEF report underscores what has long been known: coverage of essential interventions for pneumonia and diarrhoea is often much lower in the world's poorest countries than in high-income countries. These countries bear a disproportionately large share of child deaths, which are often related to common infections, notably pneumonia and diarrhoea.[2], [4]The potential for saving children's lives is great if proven, cost-effective interventions for pneumonia and diarrhoea can be scaled up to reach the most disadvantaged children who are currently missing out.[1], [5]The report shows that by 2015, more than 2 million children's lives could be saved in the 75 countries with the highest mortality burden if each country's entire population of children under 5 years simply attained coverage already achieved by the wealthiest in their societies. Additional modelling work for Bangladesh indicates nearly six times as many children's lives could be saved in the poorest households compared with the richest if key pneumonia and diarrhoea interventions are scaled up to near universal levels.[1]

UNICEF's comprehensive assessment of progress in childhood pneumonia and diarrhoea[1] provides powerful results that should motivate the world to recommit to tackling these two diseases. Its findings point to some impressive successes mixed with lost opportunities. First, new vaccines are available against the major causes of pneumonia and diarrhoea. Most low-income countries have introduced *Haemophilus influenzae* type b (Hib) vaccines to nearly close the gap between rich and poor countries in terms of vaccine introduction. Pneumococcal conjugate vaccines are becoming increasingly available in low-income countries, and access to rotavirus vaccine for diarrhoea seems likely to improve in the near future.[6] Yet disparities in access to vaccines within countries could substantially reduce their impact, and is an ongoing concern for established vaccines, such as vaccines containing measles and pertussis.

Second, treatment coverage for childhood pneumonia and diarrhoea remains low with no real change during the past decade: the poorest children in the poorest countries are least likely to receive treatment (figure). The report found that a third (34%) of children with diarrhoea in developing countries are given

solutions made of oral rehydration salts—one of the most cost-effective and life-saving child survival interventions available.[7] Even fewer children are given zinc for treatment of diarrhoea.[1] Appropriate health-care seeking for children with symptoms of pneumonia remains low in developing countries and less than a third (29%) of these children receive antibiotics.[1]

Children under 5 years with suspected pneumonia who are taken to an appropriate health-care provider or facility by household wealth quintile and region, 2006—11 (%)

*Excludes China. Estimates are based on a subset of 36 countries with available data for 2006—11, covering 62% of the under 5 population in developing countries (excluding China, for which comparable data are not available) and at least 50% of the under 5 population in each region. Data coverage was insufficient to calculate the regional average for Central and Eastern Europe and the Commonwealth of Independent States, Latin America and the Caribbean, Middle East and North Africa, and industrialised countries. Data are from UNICEF global databases 2012, based on Multiple Indicator Cluster Surveys, Demographic and Health Surveys, and other national surveys.

Finally, the report emphasises that exclusive breastfeeding for the first 6 months of life is vital to reduce deaths from pneumonia and diarrhoea. Yet currently fewer than four in ten (37%) infants across the developing world are exclusively breastfed. Another key issue is drinking water. Although the Millennium Development Goal drinking water target was met in 2010,[8] more than 780 million people are still without improved drinking water sources and 2·5 billion people are without improved sanitation facilities, mostly in the poorest households and in rural areas. This is important because diarrhoeal deaths are closely linked to unsafe drinking water, inadequate sanitation, and poor hygiene.[9]

It is time for pneumonia and diarrhoea to assume a more prominent position on the child survival agenda given their substantial contributions to child mortality. We know what needs to be done. Action plans for pneumonia and diarrhoea have been set out by UNICEF, WHO, and partners.[10], [11] They include proven interventions from across different sectors—health, nutrition, water and sanitation—that are available for immediate scale-up. Indeed, many interventions for pneumonia and diarrhoea are identical, and could be addressed in a coordinated manner.[1] There are also innovations in products, strategies, and approaches that can help accelerate progress, such as child-friendly dispersible zinc and amoxicillin tablets in appropriate dispensing packs; flavoured oral rehydration salts in various packet sizes more suitable for children; training and deployment of community health workers to provide care closer to where the most vulnerable live; and use of mobile technologies to increase efficiency in service delivery.[12]

A global partnership that currently includes UNICEF, WHO, Aga Khan University, Boston University School of Public Health, the Bill & Melinda Gates Foundation, Johns Hopkins Bloomberg School of Public Health, International Centre for Diarrhoeal Disease Research, Bangladesh, and others is being formed to set out an integrated vision for pneumonia and diarrhoea control, identify evidence gaps for future research, and support global advocacy efforts. A coordinated global action plan for pneumonia and diarrhoea control is planned for release in early 2013. The UNICEF report is part of our contribution to this major global partnership and provides the evidence to closely link pneumonia and diarrhoea control to equity in child survival strategies. Great strides in child survival can be achieved when sound strategies, collaborative efforts, and adequate financing come together.

I declare that I have no conflicts of interest. GRG is Deputy Executive Director (Programmes) for UNICEF.

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Towards ending preventable child deaths

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Thanks in large part to the increased attention to maternal and child survival brought about by the Millennium Development Goals (MDGs),[1] the world has made substantial progress in reducing child mortality over the past two decades. The number of deaths among children younger than 5 years has declined from more than 12 million in 1990 to 7·6 million in 2010.[2] The mortality rate in children under 5 years has dropped from 88 deaths per 1000 livebirths in 1990 to 57 in 2010—a 35% reduction.[2] The rate of decline in the under 5 mortality rate has accelerated from 1·9% a year from 1990 to 2000 to 2·5% a year from 2000 to 2010.[2] The rate of reduction has doubled in sub-Saharan Africa.[2] These gains underline the importance of having clearly defined targets, especially when they are combined with mechanisms for monitoring progress, ensuring equity, and promoting accountability.

Despite these impressive gains, every year 7·6 million children still die before their fifth birthday. Two-thirds of child deaths in 2010 were due to infectious causes, nearly all of which were preventable through cost-effective interventions, such as breastfeeding and vaccination.[3] An additional high proportion of child deaths result from such causes as preterm birth, perinatal asphyxia, injuries, and congenital anomalies,[3] for which interventions already exist, for example, family planning and care during pregnancy and delivery. If the world mobilises to ensure that children in low-income and middle-income countries have access to all the interventions for maternal, newborn, and child care that have reduced child mortality in high-income countries, we could put an end to preventable child deaths.

The time has arrived to commit fully to this ambitious but attainable goal. On June 14—15, 2012, policy makers and leaders from civil society, academia, and industry will gather at the Child Survival Call to Action in Washington, DC, USA—a high-level forum co-convened by the Governments of Ethiopia, India, and the USA. The event will launch Committing to Child Survival: A Promise Renewed, a multi-year global initiative to unite governments and partners with the clear and compelling goal of effectively ending preventable child deaths.

In 2010, the UN Secretary General launched the Global Strategy for Women's and Children's Health, prompting the commitment of over US$43 billion towards maternal, newborn, and child health.[4], [5] Building on this initiative, A Promise Renewed invites governments everywhere to immediately commit to lowering child mortality rates and accelerating progress on newborn, child, and maternal health. UN agencies, industry, civil society, and the many global partnerships and coalitions dedicated to the rights of children pledge to work together to support these government-led efforts and to implement measures that monitor progress, ensure equity, and promote accountability.

The Call to Action and A Promise Renewed will rally efforts to reduce child mortality to below 20 child deaths per 1000 livebirths in every country by 2035. Assuming countries already below 20 continue the historical trends, achieving this target will save an additional 5·6 million children's lives every year by then. It will also promote greater equity through acceleration of efforts where they are needed the most.

Reaching this new goal requires overcoming substantial challenges. Most countries in sub-Saharan Africa would need to increase rates of child mortality reduction to 5—9% per year, which may be two to four

times greater than that achieved by many of them in the past decade. But these high rates of mortality reduction are feasible, as shown in the past decade by about 20% of all developing countries and 10% of countries in sub-Saharan Africa.[6] An example is Rwanda, which had 6·6% per year mortality reduction from 2000 to 2010.[2]

In 2010, about 30% (43 of 146) of developing countries already had child mortality rates below 20 child deaths per 1000 livebirths.[2] A meaningful target for such countries might be to ensure that all regions—including those that are most vulnerable geographically and socio-economically—achieve the 20 child deaths per 1000 livebirths mortality rate, thus focusing on the reduction of disparities within the countries.[6] This would address the issue of inequity, which has represented a key obstacle to progress in the past. Despite global progress in child survival since 1990, differences in mortality across regions have widened; mortality reduction has tended to be slower in the regions where most child deaths occur. So we see that children in low-income countries are now nearly 18 times more likely to die before the age of 5 years than children in high-income countries (under 5 mortality rate 107 *vs* 6 per 1000 livebirths), whereas in 1990 they were 14 times more likely to die (164 *vs* 12 per 1000 livebirths).[7]

But the wide gap in child mortality between and within countries is a testimony to the unrealised potential in ending preventable child deaths. Achieving the new child survival targets will involve improving the coverage of existing preventive and therapeutic interventions for mothers, newborn babies, and children. The use of new or improved communications and technologies will increase intervention coverage and can add improved efficiency to delivery approaches. UNICEF's recent analysis suggests that by focusing on reaching those groups with the highest under 5 child mortality, such as newborn babies and disadvantaged populations, we can increase the efficiency of interventions to reduce child mortality.[8] Investments in other sectors such as education, especially girls' education, will also add to gains.[9] Efforts will need to be supported by resources and new or stronger mechanisms for monitoring and accountability at the global and country level. As always, coordinating with and building upon existing initiatives—in this case, the Countdown to 2015, the Commission on Information and Accountability for Women's and Children's Health, and others—is essential to success.

We, as the leaders of WHO and UNICEF, are personally committed to the achievement of MDG 4 and new targets introduced through A Call to Action and A Promise Renewed. The two agencies will work in an even closer collaboration to support countries to achieve universal coverage of effective interventions—and effectively put an end to preventable child deaths.

We declare that we have no conflicts of interest. MC is Director-General of WHO. AL is Executive Director of the United Nations Children's Fund.

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