

Child mortality falls worldwide, but not fast enough, study finds

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Despite advances, millions of children worldwide still die before their fifth birthday, with complications from preterm birth and pneumonia together killing nearly 2 million young children in 2013, according to a study led by the Johns Hopkins Bloomberg School of Public Health.

Their report, published online Oct. 1 in *The Lancet*, examines what caused an estimated 6.3 million children under the age of five to die in 2013, one-third fewer than the 9.9 million estimated to have died around the world in 2000. While preterm births and pneumonia were also the top killers in 2000, complications from childbirth are now the third most common cause of death in this group, displacing diarrhea, a disease for which there have been many advances in treatment in the developing world.

The largest burden of child mortality is in sub-Saharan Africa, where nearly half of the deaths worldwide (3.1 million) occurred in 2013 – and where 60 percent of [child deaths](#) are estimated to occur in 2030 if trends continue, says study lead author Li Liu, PhD, MHS, MBBS, an assistant professor in the departments of Population, Family and Reproductive Health, and International Health at the Johns Hopkins Bloomberg School of Public Health.

Liu and colleagues from the London School of Hygiene and Tropical Medicine, the World Health Organization and University of Edinburgh analyzed vital statistics records and verbal autopsy data and estimated causes of child deaths for 194 World Health Organization member states

through computer modeling.

Of the 3.6 million fewer child deaths in 2013 compared to 2000, half were due to reductions in pneumonia, diarrhea and measles deaths. Deaths from measles, tetanus, HIV and diarrhea fell at the fastest rates since 2000.

"We have seen huge successes, but there is still a long way to go," says the study's senior author Robert E Black, MD, MPH, a professor in the Department of International Health at the Bloomberg School. "Millions of children are still dying of preventable causes at a time when we have the means to deliver cost-effective interventions. And if we don't continue to devote research, resources and attention to the issue of child survival, we are going to lose the battle."

The United Nations, in an eight-point blueprint known as the Millennium Development Goals, set a goal of reducing the mortality rate for children under five, the most vulnerable group, by two-thirds between 1990 and 2015. The rate has fallen but that goal remains. If current trends continue, the world will still see an estimated 4.4 million under-five children deaths in 2030. This number would reduce to 2.8 million, Liu says, if all countries reduce under-five mortality to or below 25 child deaths per 1,000 live births (as compared with the current 46 child deaths per 1,000 live births at the global level in 2013).

Measles and tetanus deaths have fallen because of successful vaccination campaigns. Interventions such as breastfeeding, hand washing and improved water treatment, as well as rotavirus vaccination and oral rehydration solution, can reduce diarrhea. Vaccination, improvement of indoor air quality and improvement of nutrition can reduce pneumonia. Some of the easier and more cost-effective strategies have been utilized, but more work needs to be done.

But similar progress has not been made on deaths from complications from preterm births, or babies born before 37 weeks of gestation, partly due to gaps in scaling up existing care such as giving corticosteroids to pregnant women during the third trimester to reduce the chances of delivering prematurely and partly because our current ability to prevent [preterm birth](#) is limited, Liu says. Even inexpensive options aren't as widely used as they could be. She cites "kangaroo mother's care," which involves putting a baby to her mother's bare chest to improve breathing and stabilize body temperature – which costs nothing to put in place.

Mortality rates among infants under 28 days of age fell much more slowly than that of children under five as a whole and are becoming an increasing area of concern. Further reducing newborn mortality would often require health system strengthening.

"Going forward, it's going to be harder and harder to make the kind of headway we have seen in child deaths," Liu says. "We have gone after some low-hanging fruit, but even in those areas there is still so much room for improvement. More, not fewer, resources are needed."

The researchers say the push in coming years must in particular focus on reducing child deaths in sub-Saharan Africa which currently accounts for 25 percent of the world's births and 50 percent of under-five deaths. If current trends continue, it will rise to 33 percent of the world's births and 60 percent of its child deaths in 2030. The researchers say this underscores the need for family planning to reduce unintended births and to space births for the best chance of survival, and for more effective child survival investments.

"We have a lot of unfinished business," Liu says.

More information: "Global, regional, and national causes of child mortality in 2000–13, with projections to inform post-2015 priorities: an

updated systematic analysis" *The Lancet*, 2014.

Provided by Johns Hopkins University Bloomberg School of Public Health

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