

Unexpected decline in newborn mortality drives child deaths below 8 million

May 25 2010, by William Heisel

(PhysOrg.com) -- Worldwide mortality in children younger than 5 years has dropped from 11.9 million deaths in 1990 to 7.7 million deaths in 2010, a rate of decline that is faster than expected, according to new research from the Institute for Health Metrics and Evaluation (IHME) at the University of Washington.

The total number of deaths consists of 3.1 million neonatal deaths, 2.3 million postneonatal deaths, and 2.3 million deaths of children aged 1 year to 4 years.

The study, "Neonatal, postneonatal, childhood, and under-5 [mortality](#) for 187 countries, 1970--2010: a systematic analysis of progress towards Millennium Development Goal 4, will be published online today, May 24, by The Lancet. It shows that under-5 mortality is falling in every region of the world -- a 35% reduction since 1990 -- and that only Swaziland, Lesotho, Equatorial Guinea, and Antigua and Barbuda have seen increases between 1990 and 2010. The global decline during the past 20 years is 2.1% per year for overall under-5 mortality and for neonatal mortality, 2.3% for postneonatal mortality, and 2.2% for mortality in children aged 1 year to 4 years.

"Previous estimates had shown child deaths falling slowly and neonatal deaths nearly at a standstill," said Julie Knoll Rajaratnam, the lead author of the study, a UW assistant professor of global health, and a researcher at the IHME. "We were able to double the amount of data and improve the accuracy of our estimates to find that children are doing better today

than at any time in recent history, especially in the first month of life."

Researchers at IHME and the University of Queensland, Australia, generated estimates for 187 countries of under-5 [mortality rates](#) -- the risk of a newborn dying by age 5 for every 1,000 live births.

In 13 regions of the world, including all regions in sub-Saharan Africa, there is evidence of accelerating declines. Within sub-Saharan Africa, rates of decline have sped up by at least a full percentage point over the past decade compared to the previous decade in 14 countries, including Angola, Democratic Republic of the Congo, and Kenya.

As a result, 31 developing countries are on pace to meet the United Nation's Millennium Development Goal 4 by reducing child deaths by 66% between 1990 and 2015. This includes countries such as Brazil, Mexico, Malaysia, and Egypt. In 1990, 12 countries had an under-5 mortality rate of more than 200 deaths per 1,000 live births. Today, no country has an under-5 mortality rate that high, according to IHME estimates.

"One of the biggest achievements of the past 20 years has been this incredible progress in countries that historically have had the highest child mortality in the world," said Dr. Christopher Murray, IHME Director and one of the paper's co-authors. "Unlike adult deaths, where we have seen the gap between the countries with the highest mortality and lowest mortality widen, in child deaths, that gap is shrinking."

In Ethiopia, the under-5 mortality rate in 1990 was 202 per 1,000 live births, one of the highest rates in the world. By 2010, that rate has dropped by half to 101 per 1,000. Even countries with low numbers of child deaths have continued to see mortality declines. Singapore had a child mortality rate of 8 per 1,000 live births in 1990, but by 2010, that rate had dropped to 2, the lowest in the world.

"Even though most countries will not reach Millennium Development Goal 4, the fact that so many countries have made substantial progress since 2000 -- particularly in sub-Saharan Africa -- should be an opportunity for looking for ways to build on that success," Rajaratnam said.

In high-income countries, which make up less than 1 percent of all [child deaths](#), stark differences remain. The United States, for example, ranks 42nd in the world for its 2010 under-5 mortality rate, lower than most of Europe, including countries with far fewer resources, such as Estonia, Croatia, and Hungary.

This research was discussed at two events on May 24 in Washington, D.C. IHME and *The Lancet* are hosting a symposium on "Measuring the Progress on Maternal and Child Mortality: Data, alternative methods, and findings." Earlier in the day, the Kaiser Family Foundation will host a related policy forum: "World Progress in Maternal and Child Health and the Future Role for the U.S."

More information: Rajaratnam JK, Marcus JR, Flaxman AD, Wang H, Levin-Rector A, Dwyer L, Costa M, Lopez AD, Murray CJL. Neonatal, postneonatal, childhood, and under-5 mortality for 187 countries, 1970--2010: a systematic analysis of progress towards Millennium Development Goal 4. *Lancet* 2010; 375: 1988--2008, published online May 24. www.thelancet.com/journals/lan...
[http://www.thelancet.com/journals/lan... \(10\)60703-9/fulltext](http://www.thelancet.com/journals/lan...)

Provided by University of Washington

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