

Sharp decline in maternal and child deaths globally, new data show

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Since the start of an international effort to address maternal and child mortality, millions of lives have been saved globally, two new studies by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington show.

In 2000, the Millennium Development Goals (MDGs) were established by the United Nations to drive maternal and child deaths down by 2015. Child and maternal deaths had been falling in most [countries](#) since the 1980s, but the pace accelerated after the goals were set. If countries continue on this course, child deaths will fall from more than 6 million in 2013 to fewer than 4 million in 2030.

The results appeared in two separate studies. "Global, regional, and national levels of neonatal, infant, and under-5 mortality during 1990-2013: a [systematic analysis](#) for the Global Burden of Disease Study 2013" and "Global, regional, and national levels and causes of maternal mortality during 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013" were published May 2 in *The Lancet*.

The first installment in IHME's new updates to the Global Burden of Disease (GBD) study finds that child death rates dropped by 48% globally between 1990 and 2013. However, 6.3 million children still died before their fifth birthday in 2013. Maternal deaths fell significantly over the same period, though 293,000 women still died in 2013 from pregnancy-related causes. The vast majority of countries have seen accelerated reductions in maternal and child deaths – with child deaths declining by 3.5% per year since 2000 and maternal deaths by 2.7% per year since 2003.

Forty-five countries, including 27 in the developing world, are on track to meet the MDG 4 target of reducing child death rates by two-thirds of 1990 levels by 2015, while only 16 countries – most in Central and Eastern Europe – are likely to achieve

the MDG 5 target of a 75% reduction in their 1990 maternal death rate by 2015.

The study on [child mortality](#) shows that maternal education and income growth have had a significant impact in reducing child deaths. In addition, there is a strong trend in rich and poor countries that appears to be related to technological and other advances, such as vaccine and drug innovations.

A separate IHME study found that donor spending on maternal and child health grew substantially since 2000, indicating that the decline in deaths comes at a time of increased investment.

"The fact that we are seeing faster declines in child and maternal deaths in so many countries worldwide shows that international consensus around a framework like the MDGs focuses action and makes a difference," said Dr. Christopher Murray, Director of IHME and a co-founder of GBD. "As the world looks to 2015 and sets the post-MDG agenda, our findings provide a close look at what is working and point to where greater attention is needed to continue improving in maternal and child survival."

The leading cause of maternal death globally is medical complications of childbirth and the period post-delivery. Approximately one-quarter of maternal deaths were found to occur during childbirth and the 24 hours following. Another quarter happen during pregnancy, and the remaining deaths occur up to one year after delivery. Globally, HIV accounts for less than one out of every 100 maternal deaths, but in southern sub-Saharan Africa the virus causes 6.2% of deaths during pregnancy and childbirth.

For children, the data show that the earliest days of life are the most dangerous. In 2013, nearly 42% of global child deaths occurred in infants less than one month old. The 10 countries with the lowest

child survival rates were all in sub-Saharan Africa.

Key drivers of progress in reducing child deaths at the global level include maternal education, medical and public health innovations, and rising income. For each additional year of school mothers complete, child deaths drop by more than 8%. New drugs, vaccines, and other health innovations led to 4.2 million fewer child deaths in 2013, compared to 1990; and rising per capita income led to more than 900,000 fewer child deaths. Policies that reduce anemia and malnutrition, prevent malaria during pregnancy, provide calcium and micronutrient supplementation, and encourage skilled birth attendance likely will lead to even greater improvements in child and maternal health, the researchers note.

The studies also present scenarios to forecast the under-5 mortality rate and maternal mortality in 2030.

The trends show that it's possible for millions of children's lives to be saved in a short amount of time. If current trends persist, there would be 3.8 million child deaths worldwide in 2030. Under the most ambitious child mortality scenario, though – if all countries saw declines as strong as the countries that saw the fastest declines – there would be 2.4 million child deaths in 2030. The expected number of [maternal deaths](#) by 2030 globally is 184,000, and 53 countries will still have maternal mortality ratios over 100.

Key child survival (MDG 4) regional and country findings:

- Forty-five (24%) of the countries – 27 in the developing world – included in the study are on track to meet the MDG 4 target of reducing child death rates by two-thirds of 1990 levels by 2015.
- Two-thirds of the global decline in child deaths since 2000 occurred in just nine countries – India, China, Ethiopia, Bangladesh, Indonesia, Pakistan, Brazil, Afghanistan, and Nigeria.
- The country with the highest child death rate in the world in 2013 was Guinea-Bissau, at more than 150 deaths per 1,000.

The country with the lowest child death rate was Singapore, at about 2 deaths per 1,000.

- Turkey and China received relatively little international funding for health, yet made significant progress, reducing [child deaths](#) by the MDG goal of more than 4.4% per year since 1990. These gains are likely due to national policy change and health system strengthening.
- The 10 countries with the lowest child survival rates in 2013 were all in sub-Saharan Africa. In these countries – Guinea-Bissau, Mali, Chad, Central African Republic, Nigeria, Sierra Leone, Democratic Republic of the Congo, Niger, Somalia, and Equatorial Guinea – children have more than a 1 in 10 chance of dying before their fifth birthday.

"While a majority of the world's countries will not achieve MDG 4, tremendous progress has been made," said study author Haidong Wang, Assistant Professor at IHME. "Policy changes, increased development assistance for health, expanded HIV treatment programs, and greater access to child services are all important benefits of the push to achieve these goals. In the post-MDG era, countries will be well-served to continue these efforts."

Key maternal survival (MDG 5) regional and country findings:

- The United States was among just eight countries that experienced an increase in maternal death rates since 2003 – joining countries including Afghanistan and El Salvador.
- Sixteen countries – most in Central and Eastern Europe – are likely to achieve the MDG 5 target of a 75% reduction in their 1990 maternal death rate by 2015. They are Albania, United Arab Emirates, Bosnia and Herzegovina, Belarus, China, Estonia, Lebanon, Lithuania, Latvia, Morocco, Maldives, Mongolia, Oman, Poland, Romania, and Russia.
- East Asian countries have made the most progress toward MDG 5, reducing [maternal](#)

[mortality](#) by an average of 9% per year since 1990.

- Maternal mortality in sub-Saharan Africa and the Caribbean either held steady or increased from 1990 to the mid-2000s – even doubling in Southern Africa – before beginning a fast decline following establishment of the MDGs.
- Maternal death rates were highest in South Sudan and lowest in Iceland.

"In the next 15 to 20 years, it is possible to bring maternal death rates down to levels currently seen in most high-income countries, but much work remains to be done," said study author Dr. Nicholas Kassebaum, Assistant Professor at IHME. "This will require increased funding to strengthen health systems and improve access to interventions that are known to improve maternal health."

Provided by Institute for Health Metrics and Evaluation

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