

## Global Burden of Stillbirth Has Declined in Recent Years, But Remains Generally High

Ongoing efforts to reduce stillbirth around the world have had some impact, but the burden remains high, especially in less well-off parts of the world, a new analysis suggests.<sup>1</sup> Between 2000 and 2015, the stillbirth rate fell by roughly one-fourth, and the absolute number of stillbirths declined by one-fifth. Nonetheless, in 2015, 2.6 million infants were stillborn—nearly all of them in low- and middle-income countries. Regionally, Sub-Saharan Africa and southern Asia had the highest levels of stillbirth; nationally, Pakistan and 13 Sub-Saharan African countries had very high stillbirth rates, exceeding 30 per 1,000 total births.

The study aimed to improve on a 2009 World Health Organization analysis of stillbirth by increasing both the amount and the quality of data. The investigators evaluated all stillbirth rate data from 195 countries worldwide; they used data collected from national routine or registration systems, nationally representative surveys and other sources, such as population-based studies and health facility-based data. The data were adjusted to achieve a standard definition of stillbirth—birth of an infant with no signs of life at 28 weeks of gestation or later, a period corresponding to the third trimester of pregnancy—and were smoothed for countries having several years of data but small birth cohorts. Data were excluded if case ascertainment was deemed to be poor.

No stillbirth rate data were available for 38 countries, and nine countries—all in Sub-Saharan Africa and southern Asia—had only subnational data. Final analyses were based on 2,207 data points from 157 countries (90% more data points than in the 2009 analysis). The investigators estimated national, regional and global stillbirth rates and numbers. For 39 countries with high-quality data for multiple years, national stillbirth rates were estimated using loess regression of the countries' own data. For the remaining countries, the estimated stillbirth rate was modeled for 2000–2015 using a restricted maximum likelihood estimation procedure and including the country-level random effect.

In the regression model, factors that were associated with a higher natural log for the stillbirth rate included the natural log of the neonatal mortality rate (with each unit increase associated with a 0.33-unit increase in the natural log of the stillbirth rate) and the natural log of the low-birth-weight rate (0.01). Data from Sub-Saharan Africa and south Asia regions (0.33 each) and all other nondeveloped regions studied (0.32) showed a positive association in comparison with developed regions. In addition, relative to high-quality vital registration data, data from a health facility deemed likely to have bias showed a positive association (0.14). On the other hand, factors that were associated with a lower natural log of the stillbirth rate included the natural log of gross national income (−0.13), average number of years of female education (−0.03) and receipt of four antenatal care visits (−0.004). Finally, compared with data obtained from high-quality vital registration systems, data from sources such as retrospective surveys and health management information systems showed a negative association (−0.11 to −0.36).

At the global level, the average estimated stillbirth rate fell by 26% between 2000 and 2015, from 24.7 to 18.4 stillbirths per 1,000 total births. During the same period, the absolute number of infants who were stillborn declined by 19%, from 3.3 million to 2.6 million. Regionally, Sub-Saharan Africa and southern Asia continued to have the highest stillbirth rates and numbers throughout the study period. As of 2015, fully 98% of all stillbirths occurred in low- and middle-income countries, with 77% occurring in Sub-Saharan Africa and southern Asia. The annual pace of decline in the stillbirth rate was slowest in Sub-Saharan Africa (1.4% per year) and fastest in eastern Asia (4.5%). Finally, at the national level, six countries in Western Europe had stillbirth rates of less than two per 1,000 total births as of 2015. At the other extreme, Pakistan and 13 countries in Sub-Saharan Africa had rates exceeding 30 per 1,000 total births and

had seen a minimal downward trend since 2000.

According to the investigators, their findings are encouraging, but also suggest that progress toward reducing the worldwide burden of stillbirth is unlikely to meet targets such as the Every Newborn Action Plan goal of 12 or fewer stillbirths per 1,000 births in all countries by 2030. They note that the study had limitations, including the low quality of some of the data; despite gains in measuring stillbirths at the local level, lack of quality reporting mechanisms (especially in countries with the highest burdens) renders many of these births invisible to data collection efforts. The investigators conclude that “The leadership gap must...be addressed to ensure the gains in women’s and children’s health are accompanied by comparable reductions in stillbirths, especially in high-burden countries where most stillbirths could be prevented with known, low-cost, and effective interventions.”—S. London

### REFERENCE

1. Blencowe H et al., National, regional, and worldwide estimates of stillbirth rates in 2015, with trends from 2000: a systematic analysis, *Lancet Global Health*, 2016, 4(2):e98–e108.