

The Lancet, [Volume 376, Issue 9755](#), Pages 1853 - 1860, 27 November 2010
doi:10.1016/S0140-6736(10)61461-4

Published Online: 15 November 2010

Causes of neonatal and child mortality in India: a nationally representative mortality survey

The Million Death Study Collaborators[‡]

Summary

Background

More than 2·3 million children died in India in 2005; however, the major causes of death have not been measured in the country. We investigated the causes of neonatal and child mortality in India and their differences by sex and region.

Methods

The Registrar General of India surveyed all deaths occurring in 2001–03 in 1·1 million nationally representative homes. Field staff interviewed household members and completed standard questions about events that preceded the death. Two of 130 physicians then independently assigned a cause to each death. Cause-specific mortality rates for 2005 were calculated nationally and for the six regions by combining the recorded proportions for each cause in the neonatal deaths and deaths at ages 1–59 months in the study with population and death totals from the United Nations.

Findings

There were 10 892 deaths in neonates and 12 260 in children aged 1–59 months in the study. When these details were projected nationally, three causes accounted for 78% (0·79 million of 1·01 million) of all neonatal deaths: prematurity and low birthweight (0·33 million, 99% CI 0·31 million to 0·35 million), neonatal infections (0·27 million, 0·25 million to 0·29 million), and birth asphyxia and birth trauma (0·19 million, 0·18 million to 0·21 million). Two causes accounted for 50% (0·67 million of 1·34 million) of all deaths at 1–59 months: pneumonia (0·37 million, 0·35 million to 0·39 million) and diarrhoeal diseases (0·30 million, 0·28 million to 0·32 million). In children aged 1–59 months, girls in central India had a five-times higher mortality rate (per 1000 livebirths) from pneumonia (20·9, 19·4–22·6) than did boys in south India (4·1, 3·0–5·6) and four-times higher mortality rate from diarrhoeal disease (17·7, 16·2–19·3) than did boys in west India (4·1, 3·0–5·5).

Interpretation

Five avoidable causes accounted for nearly 1·5 million child deaths in India in 2005, with substantial differences between regions and sexes. Expanded neonatal and intrapartum care, case management of diarrhoea and pneumonia, and addition of new vaccines to immunisation programmes could substantially reduce child deaths in India.

Funding

US National Institutes of Health, International Development Research Centre, Canadian Institutes of Health Research, Li Ka Shing Knowledge Institute, and US Fund for UNICEF.

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