

Newborn illness linked to 71% of child deaths up to age 10, new study shows

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As many as 71.6% of child deaths up to age 10 are linked to illness as a newborn, according to a new University of Bristol-led study [published](#) today in the journal *JAMA Network Open*.

Drawing on data from [Bristol's National Child Mortality Database \(NCMD\)](#), the study examined 4,829 deaths of [children](#) up to age 10 which occurred in England between April 2019 and March 2022. Researchers used a statistical technique called the Poisson model, to derive the relative risk, comparing children with, or without, neonatal illness on risk of [death](#).

The study built on earlier work by the same group which showed that 42% of all child deaths occurred within 28 days of birth; it found that, further, perinatal events like [preterm birth](#), perinatal brain injury and neonatal infections had an impact on child survival for many years after.

Furthermore, the increased risk applied across a range of causes. Children affected by perinatal events were found to be over-represented among deaths due to infections and sudden, unexplained deaths in infancy and childhood.

Overall the team found 3,456 (71.6%) of the child deaths were among children who had evidence of some neonatal illness. Of these, 3,083 (82.7%) were children who died before 1 year of age, and 373 (33.9%) were those who died over the next nine years.

Professor Karen Luyt, Program Lead for the National Child Mortality Database and Professor of Neonatal Medicine at the University of Bristol, said, "The death of a child around the time of birth is one of the biggest contributors to childhood mortality in the developed world, with 42% of all [child deaths](#) in England occurring within 28 days of birth.

"Our findings show while the absolute risk of death is low, children who are admitted to neonatal units continue to have higher risk of death than others throughout their next ten years, with 63% having an identifiable perinatal condition listed as a cause, or contributor to their deaths, the most common being prematurity and congenital abnormalities. Children

with evidence of neonatal illness had increased risks of death from a range of causes including infections and SUDIC.

"This new evidence suggests that improvements to perinatal health and preterm births as well as a focus on reducing [brain injury](#) around [birth](#) could improve [child health](#) in the future."

The publication follows the NCMD's earlier publication of a full-length report [The Contribution of Newborn Health to Child Mortality across England](#), which contains further information about the cohort of children under study and the impacts of newborn health on their survival.

More information: David Odd et al, Newborn Health and Child Mortality Across England, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2023.38055](#)

Provided by University of Bristol

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