

Study shows 8 out of 10 child deaths in low-income countries could be prevented

July 26 2023



Credit: CC0 Public Domain

According to a study from the international CHAMPS network published in *JAMA Network Open*, 82% of child deaths in low-income countries could be prevented. The study, which used the minimally

invasive autopsy technique developed by the Barcelona Institute for Global Health (ISGlobal), found an infectious agent in 87% of cases and identified malnutrition as the most common underlying cause of death.

Some 99% of deaths in children under five years of age occur in low- and middle-income countries. "If we want to prevent these deaths, we need to know the causes, but the problem is that we lack [reliable data](#)," says Quique Bassat, ICREA researcher at ISGlobal, an institution supported by the "la Caixa" Foundation. Clinical data and family or caregiver testimonies (verbal autopsies) are often used to determine the causes in low-resource areas, but they are not detailed enough.

In addition, it is important to distinguish between underlying causes (i.e. those that start the chain of events leading to death) and the immediate cause of death.

"This distinction is important because death can result from the interaction between different conditions," explains Bassat, who is part of an ISGlobal team that has developed and validated a minimally invasive technique to obtain biopsies from different organs to determine the causes of death through histopathological and microbiological analysis. This postmortem minimally invasive tissue sampling (MITS) technique was adopted by CHAMPS, an international child mortality surveillance network launched in 2016.

636 child deaths under the microscope

In this study, a CHAMPS team led by Bassat investigated the causes of [child deaths](#) in seven countries in sub-Saharan Africa and South East Asia (Mozambique, Sierra Leone, Kenya, Mali, Ethiopia, South Africa and Bangladesh), distinguishing between underlying, intermediate and immediate causes.

The analysis included 636 deaths in children aged one month to five years, that occurred in the community or in the hospital between 2016 and 2020. A MITS was performed in all cases, and clinical and verbal autopsy information was collected.

Malnutrition: The main trigger

The most common underlying causes of death were: malnutrition (16.5%), HIV (11.9%), malaria (11.2%), congenital defects (10.1%), respiratory infections (8.4%) and diarrhea (7.2%). An [infectious agent](#) was found in 87% of cases (the most frequent was *Klebsiella pneumoniae*, a bacterium mainly associated with hospital infections, followed by the malaria parasite *P. falciparum* and *Streptococcus pneumoniae*, a pneumonia-causing bacterium).

"Only 25% of deaths were due to a single cause; all the others were due to a complex interaction of factors," Bassat points out. Hence the importance of considering the whole chain of events leading to death, and not just the immediate cause, in order to design more effective prevention strategies.

The study concluded that 82% of the deaths analyzed could have been prevented, opening up many opportunities to design targeted interventions with high impact. Finally, they point out that minimally invasive autopsies also allow for the analysis of deaths that occur in the community (at home), providing valuable information on how to prevent deaths that escape the health system.

More information: Causes of death among infants and children in the Child Health 1 and Mortality Prevention Surveillance (CHAMPS) Network, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2023.22494](https://doi.org/10.1001/jamanetworkopen.2023.22494) , jamanetwork.com/journals/jamanetworkopen.2023.22494

Provided by Barcelona Institute for Global Health

Citation: Study shows 8 out of 10 child deaths in low-income countries could be prevented (2023, July 26) retrieved 17 May 2024 from <https://medicalxpress.com/news/2023-07-child-deaths-low-income-countries.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.