Solutions to Nigeria's newborn death rate might lie in existing innovations

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Depiction of mortality burden concentration in U5 lifespan—higher (red) and lower (white). Credit: Frontiers in Pediatrics (2024). DOI: 10.3389/fped.2024.1413113

Newborn deaths in sub-Saharan Africa could be reduced by nationally
scaling up in-country technologies, a review of 32 years' worth of research has found.

The review, led by Imperial College London's Professor Hippolite Amadi and published in *Frontiers in Pediatrics*, argues that Nigeria's own discoveries and technological advancements of the past three decades have been "abandoned" by policymakers.

The authors argue that too many Nigerian newborns, clinically defined as infants in the first 28 days of life, die of causes that could have been prevented had policymakers adopted recent in-country scientific breakthroughs.

The researchers say the lack of adoption and scale up of breakthroughs in treatment beyond Nigeria's major cities might partly explain the country's consistently high infant mortality rate.

Figures from the World Health Organization show that globally, 6,500 newborns die every day, and that sub-Saharan Africa experiences the highest neonatal mortality rate in the world at 27 deaths per 1,000 live births.

In addition, a child born in sub-Saharan Africa, a region that includes Nigeria, is 11 times more likely to die in their first month of life than one born in Australia and New Zealand, which is the lowest-mortality region.

Lead author Professor Amadi, who received the Nigeria Prize for Science (NPS) in 2023 for his work on low-cost newborn care systems in the West African nation, said, "Nigeria has the power to reduce its own infant mortality rate. We already possess the necessary knowledge and technology, cultivated by decades of Nigerian research and innovation."
"We need to put the policies and leadership in place to make these improvements where they are needed most, so we can reduce the soaring numbers of infant deaths in the country."

'Game-changing science'

Nigerian clinicians and researchers have developed several low-cost advances in neonatal care in recent years. These include adaptive care pathways for premature births, an innovative respiratory support mechanism for newborns with low birth weight, and solar powered intensive phototherapy machines for treating neonatal jaundice.

However, access to neonatal care exists mainly in major cities, where most hospitals with neonatal care units are located, and is more difficult in rural areas. To address this, the researchers argue that policymakers should scale up and adopt these strategies nationally.

To carry out the analysis, the researchers examined 4,286 publications for evidence of potential strategies or interventions to reduce infant mortality.

Of those publications, 19 covered potential strategies or interventions to reduce neonatal mortality, and 14 of these strategies produced significant results during their trials and subsequent usage in hospitals. However, none of these applications were adopted nationally, which the researchers say has denied newborns proper access to these interventions.

The researchers say that Nigeria is an example case study that could be applied to many other low- and middle-income countries (LMICs) that face similar high mortality and morbidity rates, including across West Africa. Professor Amadi added, "All low- and middle-income countries (LMICs) must look inward to strengthen and use what they already
"The continuing failure of the Nigerian system to protect newborns seems to have become a norm, a huge source of nursing fatigue, and an unwelcome situation. Nigeria, and other LMICs like it, already possess the game-changing science and technology to prevent many of its newborn deaths. It's now in policymakers' hands to nationally scale up these innovations and accelerate infant survival."


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