

The Case for Doing More: Using Locally Derived, Private Sector Led Multidisciplinary Approaches to Resolve High Maternal and Child Mortality in African Settings

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Abstract

This short review makes a case for all hands on deck to create a favorable environment for private partnership innovation to significantly reduce neonatal mortality, infant mortality, and maternal mortality in under-resourced settings. Neonatal (0 to 30 days of life) and infant mortality is very high in developing and under-resourced areas of the world. 14,000 children still die every day, equivalent to 11 deaths every minute. The toll of under-five deaths over the past two decades is staggering: between 1990 and 2015, 236 (234, 240) million children worldwide died before their fifth birthday - more than the population of Brazil, the world's fifth most populous country. Sub-Saharan Africa remains the region with the highest under-five mortality rate in all regions in the world and Nigerians, particularly women and children, experience some of the worst threats to health in Africa. One Nigerian woman dies every 10 minutes due to complications from pregnancy and childbirth, while more than 500 newborns die daily. A concerted multi-sectoral effort is needed to address this situation and end preventable child deaths. The authors, who are currently conducting systematic reviews of available literature from within the region, propose local, private sector driven, performance-based innovative approaches that are locally derived, contextualized, evidence-based and culturally responsive as the future of maternal and child health development in African settings.

Keywords: Maternal Health; Neonatal; Under-Five Children; Nigerian Healthcare; Infants; Sub-Saharan Africa

Introduction

A review of recent global declines in international aid due to a reduction in the willingness of international governments to continue to support international aid for many African countries reveals [9] that many African countries may soon find themselves in a situation forced upon us by our own complacent attitudes, leaders' lack of vision, direction, and dependence on handouts from other countries and financial institutions. This situation will disproportionately affect women and children.

Neonatal (0 to 30 days of life) and infant mortality is very high in developing and under-resourced areas of the world [1]. Foreign governments and International organizations like the Canadian government, the United States Government, Johnson and Johnson, and the Bill and Melinda Gates Foundation have invested heavily in innovative approaches to end preventable child and maternal (mother) deaths (EPCMD) [6,24]. The UN agencies, notably UNICEF, have developed multiple policies and guidelines while supporting programs in developing countries. Nevertheless, 14,000 children under the age of 5 still die every day (a mere reduction of 2,000 deaths from 16,000 in 2015) [8]. For emphasis, this is equivalent to 11 deaths every minute, globally.

The toll of under-five deaths over the past two decades is also staggering: between 1990 and 2015, 236 (234, 240) million children worldwide died before their fifth birthday - more than the population of Brazil, the world's fifth most populous country. More than 5.2 million children died before their fifth birthday in 2019 alone and more than half of these children were born in sub-Saharan Africa [18,23].

Globally, the neonatal mortality rate [10], which is a universally accepted indicator of the general health and wellbeing of any population, fell from 36.6 deaths per 1,000 live births in 1990 to 17.5 per 1,000 live births in 2019 [13,20]. In Northern America and Europe, the rates decreased from 7.3 to 3.0 per 1,000 live births from 1990 to 2019. Comparatively, in the least developed countries and the Sub-Saharan Africa region, the rates decreased from 51.7 to 25.6 deaths and 45.4 to 27.5 per 1,000 births respectively, in the same time period [26]. These latter rates are 3 - 4 times higher than the rates in the high-income countries in 1990, 29 years ago. NMR may be worse in Africa since about half of the neonatal deaths are not even counted because no birth certificates are given to the babies. Similarly, over the past decade, between 2009 and 2015, Africa is the only continent where the number of neonatal deaths has almost flat-lined at a high level (966, 000 in 1990 and 985, 000 in 2015).

Sub-Saharan Africa remains the region with the highest under-five mortality rate in all regions in the world. The region is also home to the countries with the highest mortality rates in the world. In 2015, 19 out of the 20 worst countries for infant mortality were in Africa (Cameroon, Niger, Guinea-Bissau, South Sudan, Burkina Faso, Guinea, Benin, Mauritania, Côte d'Ivoire, Equatorial Guinea, Lesotho, Nigeria, Congo, Mali, Chad, Somalia, Sierra Leone, Central African Republic and Angola) [1]. To achieve the SDG target of an under-five mortality rate of 25 or fewer deaths per 1,000 live births by 2030, 47 countries need to significantly increase their efforts. 30 countries must either double or triple their current rate of reduction [13]. The first 28 days of life, the neonatal period, are the most vulnerable time for a child's survival. Neonatal mortality is becoming increasingly important because the share of under-five deaths occurring during the neonatal period has been increasing and the health interventions needed to address the major causes of neonatal deaths generally differ from those needed to address other under-five deaths. These interventions are also closely linked to those that are necessary to protect maternal health [2].

Reviewing the data: Lens on sub saharan Africa

Prematurity is the leading cause of death in children under 5 years old [15]. Based on the WHO data, around 15 millions of preterm births occur each year (which is more than 10 % of all births). Of these births, nearly 1 million will die from complications. More than 60% of all preterm births are in Asia and Africa [4]. Even though the numbers of preterm births are higher in Asia, the proportion is bigger in Africa (six of the ten countries with the greatest number of preterm births are in Asia but proportionally, eight of the ten countries with the worst rates are in Africa). 75% of these deaths, according to the WHO, can be saved with cost-effective interventions. As an example, for babies born at 32 weeks in developing countries, half of them died due to lack of simple health care (warmth, breastfeeding support). In more developed countries, almost all of these babies will survive. For babies less than 28 weeks, 90% of these babies will die in comparison to 10 % for more developed countries [11,12].

Accelerating progress in child survival urgently requires greater attention to ending preventable child deaths in two regions: Southern Asia and sub-Saharan Africa. 1 child in 12 in sub-Saharan Africa dies before age 5. In SSA, three million children under the age of 5 die annually from preventable diseases, most of which are pneumonia, diarrhea and malaria. According to the WHO data in 2013, nine countries

in Africa had more than 1 million living birth per year: Nigeria, Ethiopia, Democratic Republic of the Congo, United Republic of Tanzania, Uganda, Kenya, South Africa, Mozambique and Angola [23,29]. The neonatal mortality rates (per 1 000 living births) of these countries are in a range from 11.2 to 50.4. Due to poor accessibility to quality healthcare services, topographic challenges and extreme healthcare worker shortages and attrition, 80% of these children die at home without having access to quality healthcare services. Without the right tools, the trends will not change. One major impediment to care for babies who are premature, preterm, sick at birth or malnourished is the lack of appropriate equipment (incubators and radiant warmers) to care for them in the right environment. Where they exist, they are expensive to maintain and often not designed for the region.

Moreover, extended efforts are needed to provide the necessary services and interventions given the expected growing number of births and child populations in this region - with a 95 percent probability the number of children under age five in sub-Saharan Africa will grow by an extra 26 - 57 million (with a median of 42 million), from 157 million in 2015 to between 183 and 214 million in 2030 [31]. The region may face unique challenges in reducing the number of child deaths: the number of under-five deaths in sub-Saharan Africa may increase or stagnate even with a declining under-five mortality rate if the decline in the mortality rate does not outpace the increase in population, as observed during the 1990s.

Spotlight on Nigeria: Case study

The Federal Republic of Nigeria has a population of over 210 million people and is the most populous country in Africa. Nigeria is a resource rich nation recording strong economic growth, but this has not translated into corresponding economic and social welfare for Nigerians. Nigerians are increasingly poor with over 69% of the population (almost 100 million people) living on less than \$1 per day [17,25].

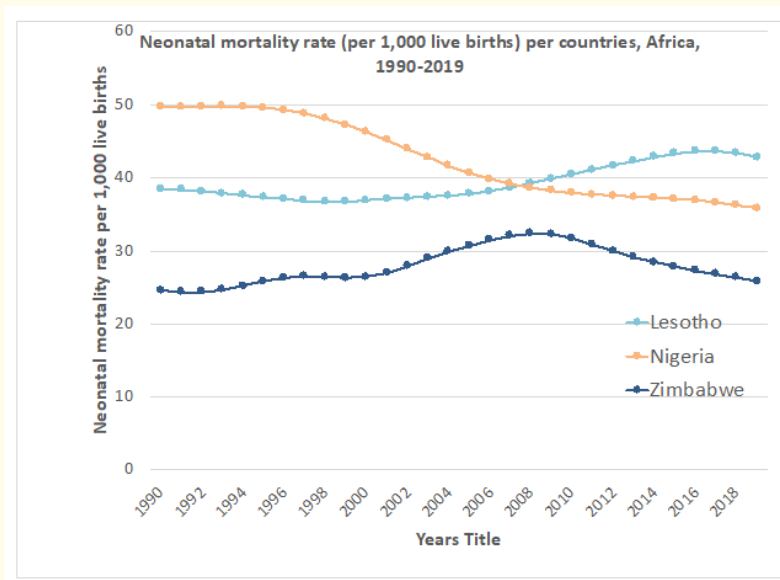


Figure 1: Comparing the neonatal mortality rates of Nigeria with 2 other African countries (Zimbabwe, Lesotho), 1990 to 2015.

Source: Developed with data obtained from the maternal, newborn, child and adolescent health and ageing data portal (World Health Organization).

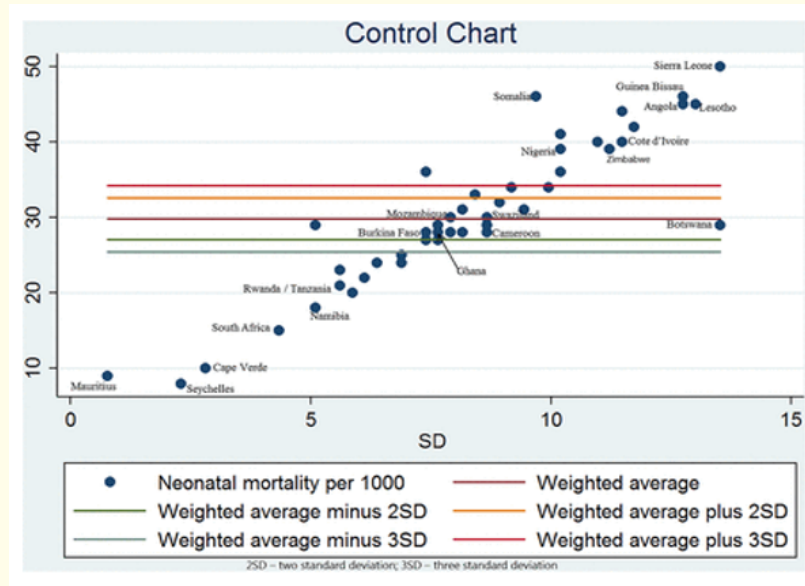


Figure 2: Control chart for neonatal mortality in sub-Saharan Africa.

Source: [10].

Nigeria is one of the 10 most dangerous countries to become a mother [3]. This ranking is based on a women’s lifetime risk of maternal death, the likelihood her child will survive to the age of 5, as well as the educational, political and economic status of women in 178 countries. In 2010, an estimated 40,000 Nigerian women died in childbirth, and an additional 1 to 1.6 million women suffered from serious disabilities from pregnancy and birth-related causes [14]. Nigeria accounts for an estimated 14% of maternal deaths worldwide. Nigerian women have an average total of 5.7 births, with each pregnancy exposing them to the risk of maternal complications. The total number of under-5 deaths per 1,000 births has plateaued at 35.5 - 37.8 since 2011, representing the lowest change in a decade since 1970.

The situation for newborns, intimately linked to maternal health indicators, is also bleak. Nigeria has the highest number of newborn deaths in Africa with 700 babies in the neonatal period (the first 28 days of life) dying each day [7].

Since Nigeria has one of the highest fertility rates (over 20% of women have an unmet need for family planning) in the world, it means that this trend is not about to decline, without mitigation. Nigeria ranks 153rd out of 187 countries on the United Nations 2012 human development index and the citizenry, particularly women and children, experience some of the worst threats to health in Africa. One Nigerian woman dies every 10 minutes due to complications from pregnancy and childbirth [27].

Discussion

The vast majority of maternal, newborn and child deaths are preventable through relatively basic and uncomplicated interventions. However, the context in which women and men access and seek out reproductive health services is more complex than in Western societies.

Health barriers

Barriers to accessing quality health care along the reproductive health continuum in most West African settings are intimately linked to gender inequality and may include women’s immediate economic circumstances, the cultural context, the weakness and limited reach

of the primary health care system and a combination of poor health financing, low managerial capacity, lack of both accountability on health investments and political will of local governments. As a powerful barometer of broader trends in development in a particular society, maternal health can be used to reflect the status of women and children in society and correlates well with any measure of these barriers [21].

For example, about 60 percent of Nigerian mothers give birth without the help of a skilled birth attendant due to high rates of health-care worker attrition. This increases the risk of complicated pregnancies. If one considers that Nigeria's population is young, (one third of Nigerians are aged 10 to 24 years) and the rate of unemployment is high (54% of youth are unemployed), many youths are particularly vulnerable [16,17]. Poor health infrastructure, the lack of access to contextual information, communication and education (IEC) on fertility, HIV/AIDS, sexually transmitted diseases (STDS), poor nutrition and life skills training put many adolescent girls and young women (AGYW) at higher risk for undesired pregnancies, maternal morbidity and mortality.

Due to the inbred cultural practices, norms, myths and beliefs on gender supremacy, girl education, women employment and early marriages in African societies, these young girls are exposed to serious reproductive health risks. For example, the most common prenatal and postnatal health complications in Nigeria include bleeding in pregnancy, severe anemia, prolonged obstructed labor, stillbirth, low birth weight and preterm births. Girls aged 10 - 14 years are five times more likely to die in pregnancy or childbirth than women aged 20 - 24 and pregnancy-related complications are the main cause of death in 15 - 19-year-old girls worldwide.

Preventable diseases in newborns

Diseases that are readily preventable or treatable with proven, cost-effective and quality-delivered interventions cause most child deaths. Infectious diseases (such as pneumonia and diarrhoea) and neonatal complications are responsible for the vast majority of under five deaths globally [19]. According to the latest estimates by WHO [28,29], infectious diseases and conditions such as pneumonia, diarrhoea, malaria, meningitis, tetanus, HIV and measles caused half of the 5.9 million deaths in children under five that occurred in 2015. The main killers of children under age five in 2015 included preterm birth complications (18 per cent), pneumonia (16 per cent), intrapartum-related complications (12 per cent), diarrhoea (9 per cent) and sepsis/ meningitis (9 per cent). Importantly, almost half of all under-five deaths are attributable to under nutrition [5], while more than 80 percent of neonatal deaths occur among newborn infants of low birth weight in the highest burden settings [11,12]. In summary, most child deaths are caused by diseases that are readily preventable or treatable with proven, cost-effective interventions. Action must be immediately taken to save children's lives by expanding access to effective preventive and curative interventions.

Recommendation

The figures above give credence to the inextricable links between poor health services and lower socioeconomic status, as described by the United Nations Development Program (UNDP)'s Istanbul International Center for Private Sector in Development (IICPSD) in the 2014 report describing the role of Private Sector Partners (PSPs) in poverty alleviation, including health. The authors recommend socially responsible and private sector driven performance-based models for healthcare.

A combination of locally derived, contextualized, innovative approaches that are evidence-based and differ from the norm of current implementation are urgently required to reverse the trend and accelerate the pace of progress towards achieving the sustainable Development Goals target for child survival in high mortality countries in SSA. A concerted multi-sectoral effort is needed to address this situation and end preventable child deaths. These new approaches should effectively and efficiently harness local African private sector potential for provision of sustainable and quality healthcare services by initiating or expanding the collaboration between socially responsible, inclusive or mainstream small businesses and local health facilities, financial institutions, local telecommunication institutions, local and regional information technology companies, not-for-profit organizations, local governments and tertiary level educational institutions.

The approach should be based on the premise that local clinics often exist as the central hub of activity in many rural African communities, including Nigeria. Healthcare providers (HCPs) are often the better-paid and well-respected people in their communities. However, there is often a marked disassociation between the definition of their positions and their contributions to socioeconomic development in their immediate communities. HCPs can positively influence structural, cultural, socio-economic and transformational change in their communities if given the opportunity and networks, based on their technical expertise and abilities to influence change. This perceived leadership position can be leveraged, in collaboration with the private sector, to address barriers to health services and improve how health services are targeted and delivered to the poorest 'at the base of the pyramid'.

By inculcating the principles of transformational leadership right from the onset in the core of doing business; establishing a network of multi-disciplinary partners and providers with a shared common vision and goals; defining what businesses, resources and assets are available locally, threats to their growth, and exploiting opportunities to introduce possibilities for technology enhanced, strategic collaboration between the public health sector and young women entrepreneurs, these interventions are expected to open up new markets for local Private Sector Partners (PSPs) and directly impact the economic growth and socioeconomic status of households in rural towns and villages. The benefit to patients is easy access to needed products and services at reduced prices, while also benefiting from sustainable community-based care, support and referral services indirectly funded by them.

Conclusion

African countries have the resources and assets that are required to reduce maternal and infant mortality. There is an abundance of literature on interventions that have been locally implemented, with various degrees of success. The next phase of growth in Africa will be powered by technology, fintech and major corporate organizations in the private sector. The approaches described in this opinion piece leverage on the opportunities created by this new boom. It is critical that all approaches are simple to implement, culturally acceptable, efficient, results-focused and quickly replicable within current African healthcare systems without further overburdening them. To be successful, these approaches require political will, wide-ranging reform and concerted involvement of all stakeholders, including the public sector, private sector, healthcare providers and healthcare service users.

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