

ZERO MOTHERS DIE: A GLOBAL PROJECT TO REDUCE MATERNAL AND NEWBORN MORTALITY THROUGH THE SYSTEMATIC APPLICATION OF MOBILE HEALTH AND ICT

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Abstract

With almost 300,000 women and six million children under-five continuing to die each year, it is imperative that we start applying the innovation and progress made in the private sector to reducing these unacceptably high mortality rates in developing nations. Launched in September 2014 at the United Nations Headquarters during the Women Leaders Forum, Zero Mothers Die is a unique global public-private partnership to systematically deploy mobile technology and ICT solutions to reduce maternal and newborn mortality. Zero Mothers Die seeks to bring mobile health solutions to pregnant women to increase their access to healthy pregnancy information and emergency care, as well as empower healthcare workers through capacity-building in the area of maternal, newborn and child health. The aim of Zero Mothers Die is to facilitate the delivery of innovation and low-resource technology for healthcare into nations where maternal and child mortality rates remain high, by constantly updating the Zero Mothers Die project model components and supporting countries in convening local public-private partnerships to implement Zero Mothers Die initiatives in their country.

Keywords: eHealth; mobile health; mHealth; maternal mortality; newborn; maternal health; ICT.

Introduction

As the deadline quickly approaches for achieving Millennium Development Goals (MDGs) 4 (Reduce Child Mortality) and 5 (Improve Maternal Health), these remain a priority for many countries. Despite current efforts, maternal and child mortality remain unacceptably high around the world, with 800 women dying every day from pregnancy and childbirth related complications, with 289,000 women dying in 2013 alone.¹ Twenty-four percent of deaths in pregnant and post-partum women are attributable to Human Immunodeficiency Virus (HIV) in Sub-Saharan Africa. Almost all of these maternal deaths (99%) occur in developing countries, and most could have been prevented.² In addition to the plight of pregnant women, children under the age of five face dire circumstances after birth. In 2012, 6.6 million children under the age of five died, with 44% of all child deaths occurring within the first month of life and more than three million of these deaths being due to conditions that could be prevented or treated with access to simple, affordable interventions.³

According to a report by the Institute for Health Metrics and Evaluation,⁴ it is estimated that only 13 developing countries will achieve MDG 5a (reduce by three quarters, between 1990 and 2015, the maternal mortality ratio). An estimated 31 countries are predicted to achieve MDG 4a (reduce by two thirds, between 1990 and 2015, the under-five mortality rate). Only nine of these countries will achieve both MDGs 4a and 5a. Of the 75 countries with the highest burden of maternal and child mortality, 25 have made insufficient or no progress in reducing maternal deaths

and 13 show no progress in reducing under-five mortality.⁵

In parallel to these sobering facts, there is an increasingly high potential for Information and Communication Technologies (ICT) to improve health. Given the expansion of telecommunication networks and penetration of mobile phones in rural areas in developing countries, this gives rise to the possibility of connecting previously unconnected women to healthcare through mobile health (mHealth). Mobile phone networks cover 96% of the world's population, with 77% of mobile subscriptions held by nearly 90% of the population in low- and middle-income countries.⁶

mHealth initiatives cover a wide range of activities, including data collection, disease surveillance, health promotion, diagnostic support, disaster response, and remote patient monitoring. However, there is specific evidence of mHealth's positive impact in maternal health: in 2014, a mobile maternal health initiative in Zanzibar identified that mobile phone interventions significantly increased the proportion of women receiving antenatal care during pregnancy.⁷ Receiving antenatal care (ANC), and attending at least four ANC visits, is one of the most important factors for saving women's lives according to the World Health Organization (WHO). Further evidence shows that mHealth tools can help minimise time barriers and facilitate urgent care, as well as support health promotion through mobile messaging services.

Systematically applying eHealth solutions to reduce maternal and newborn mortality is the primary aim of Zero Mothers Die, a unique public-private partnership initiative that seeks to bring mobile health solutions to pregnant women to increase their access to healthy pregnancy information and emergency care.⁸

Zero Mothers Die: A solution applying eHealth to help achieve MDGs 4 and 5

Launched in September 2014 at the United Nations Headquarters during the Women Leaders Forum, an official side event of the UN General Assembly, Zero Mothers Die has attracted a variety of partners from different sectors in order to build a strong global partnership covering all aspects of the project. At the global level, Zero Mothers Die is led by the Zero Mothers Die Consortium consisting of two foundations, Advanced Development for Africa (<http://www.adaorganization.net/>) and Millennium2025 'Women and Innovation', a Public Utility Foundation,

(http://www.millennia2015.org/millennia2025_foundation), and a private sector company UniversalDoctor Project (<http://www.universaldoctor.com/>). Zero Mothers Die is supported by key technical partners, including the Joint United Nations Programme on HIV and AIDS (UNAIDS), Airtel, Global Partnerships Forum and The People's Vision. At the country level, local Zero Mothers Die partnerships are developed to lead the design and implementation of the project directly on the ground, with key support from UNAIDS country offices.

Within the global framework of the UN MDGs, the Zero Mothers Die partnership aims to support the achievement of MDGs 4 and 5, by reducing maternal and child mortality through the expanded access and use of eHealth. By increasing access to ICT to achieve its goals, this partnership in turn supports the achievement of Target 8F within MDG 8: "In cooperation with the private sector, make available the benefits of new technologies, especially information and communications".⁹

Methods

Zero Mothers Die presents a project model containing six mobile-based components targeting maternal and newborn health. These project components include: 1) A mobile messaging service delivering maternal, newborn and child health information to pregnant women and new mothers through voice / text messages in their local languages; 2) systematic distribution of mobile phones to vulnerable and unconnected pregnant women to increase their access to healthcare information; 3) an allocation of free airtime during each month of their pregnancy, restricted for calls only to their assigned healthcare worker or facility to enable communication, particularly during emergencies; 4) capacity-building and training of healthcare workers using ICT and digital tools; 5) mobile money savings scheme to increase access to skilled care during childbirth; and 6) a solar power mobile phone charger to provide green energy for the charging of their mobile phones and enable financial empowerment through a business generation scheme. This project model is presented to governments as a comprehensive mobile maternal health initiative, however it is necessary that it is then adapted and tailored to the needs and contexts on the ground in each country. Zero Mothers Die does not advise a one-size fits all approach, but rather a tailored

approach to ensure the project design meets the requirements of the country.

With these components, the project's key objectives are to: a) Reduce maternal health complications and maternal mortality, and raise prevention of mother-to-child transmission of HIV (PMTCT); b) accelerate mobile phone ownership and use by vulnerable pregnant women, particularly low-resource women in rural or isolated communities and without access to mobile phones, in order to reduce the mobile phone gender gap; and c) educate, train, and ensure capacity-building of healthcare workers using mobile devices preloaded with up-to-date training materials and content to improve maternal and child health in their communities. In addition, the projects provide digital tools to support and enable healthcare workers to collect patient data if a government health information management system is in place, thereby contributing to overall health system strengthening.

The guiding principles of the overall project are sustainability and scalability through local ownership, integration within local health ecosystems and health information management systems to support health system strengthening, and identifying inclusive business models to ensure continuation of the project. Each country of implementation has a local project lead organisation, which then engages the relevant local Ministries (Health, Telecommunications, Family and Welfare, etc.) and technical partners in the project processes of formulation, design and implementation, in order to secure their buy-in and local ownership and ensure sustainability (beyond initial funding) as well as scale up.

Results

Implementation Phases 2014 – 2017

Zero Mothers Die was officially launched at the fourth annual Women Leaders Forum, an official event of the 68th Session of the United Nations General Assembly in New York City, organized by Advanced Development for Africa in partnership with the Global Partnerships Forum, Global Digital He@lth Initiative, UNAIDS and International Telecommunications Union, with support from Yoo Soon-taek (wife of Secretary General Ban Ki-moon), Cherie Blair, Dr. Christine Kaseba-Sata (former First Lady of Zambia), and Sylvia Bongo Ondimba (First Lady of Gabon).

Ghana was chosen, in consultation with the major

technical partners, as the first country for implementation of Zero Mothers Die as it is one of the UNAIDS Global Plan countries.¹⁰ The Country Director of the UNAIDS Ghana office was the initial lead for bringing the Ministry of Health (MOH) and other government and local UN agencies on board as country partners in the process. Several major stakeholder meetings and technical visits for “Zero Mothers Die Ghana” have taken place between the Zero Mothers Die Consortium and the following partner agencies: Office of the First Lady, Ministry of Health (several components, but mainly from Ghana Health Service (GHS)), Family Health Division, and National AIDS/STI Control Programme, Ghana AIDS Commission, Ministry of Communication, National Communication Agency, Greater Accra Regional Ministry, Municipality of Accra, Accra Regional Health Service, AirTel Ghana, UNAIDS, World Health Organization, United Nations International Children's Emergency Fund (UNICEF), UNAIDS-Geneva and Partners.

Dr. Afisah Zakariah, Director of Policy, Planning, Monitoring and Evaluation at the Ministry of Health, was appointed as the lead for the Zero Mothers Die Planning and Task Team within the MOH to lead the preparation and implementation phases of Zero Mothers Die Ghana in three districts of Greater Accra. Given the restricted amount of funding available for the first phase, an initial implementation has been planned for six sub-districts in Greater Accra (GA South). GHS has now taken on the lead of operationalising the Zero Mothers Die Ghana implementation plan under the leadership of Dr. Anthony Ofori, in cooperation with Airtel. Pending on-going technical discussions between the partners to operationalise the project, the launch of the initial implementation phase is set to take place within 2015.

Gabon has been identified as the second country for implementation, in close partnership with the foundation of the First Lady (Fondation Sylvia Bongo Ondimba, FSBO), who is leading project design and formulation on the ground with various in-country partners.

Formulation phases are currently underway in Mali and Nigeria, with Rwanda and Zambia identified as follow up countries whose Ministers expressed keen interest in bringing the Zero Mothers Die initiative to their country.

Conclusion

With almost 300,000 women and six million children under-five continuing to die each year, it is imperative that we start applying the innovation and progress made in the private sector to reducing these unacceptably high mortality rates in developing nations. Zero Mothers Die is a continuously evolving initiative, seeking support from the private sector to contribute in-kind their core competencies to support the cause of bringing mother and child deaths down to zero. Zero Mothers Die's aim is to facilitate the delivery of innovation and low-resource technology for healthcare into nations where maternal and child mortality rates remain high, by constantly updating the components of the Zero Mothers Die project model, and supporting countries in convening local public-private partnerships to implement Zero Mothers Die initiatives in their country.

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Conflict of interest: the authors declare their involvement in the Zero Mothers Die Project.

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