Zero Mothers Die

Saving the Lives of Pregnant Women & Children Using ICTs & Mobile Health

Zero Mothers Die Consortium

Technical & Country Partners

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BACKGROUND & JUSTIFICATION OF PROJECT

UN Millennium Development Goals 4 and 5

Improving the survival of women during pregnancy, delivery and post-partum and reducing child mortality of under-five children is a priority for many countries striving to achieve Millennium Development Goals (MDG) 4 and 5. Despite current efforts, maternal and child mortality remain unacceptably high around the world, with 800 women dying every day from pregnancy- or childbirth-related complications. 24 percent of deaths in pregnant and post-partum women are attributable to HIV in Sub-Saharan Africa. In 2010, 287,000 women died during and following pregnancy and childbirth.[1] 99 percent of these maternal deaths occurred in developing countries, and most could have been prevented.[2] In 2012, 6.6 million children under the age of 5 died, with 44% of all child deaths occurring within the first month of life and more than 3 million of these deaths due to conditions that could be prevented or treated with access to simple, affordable interventions.[3]

The UN Millennium Development Goals focused on improving maternal health and reducing maternal mortality rates by three-quarters (MDG 5) and reducing under-five child mortality rates by two-thirds (MDG 4) between 1990 and 2015, are therefore high priorities for developing countries, many of which are not on track to achieve them by 2015. According to a report by the Institute for Health Metrics and Evaluation[4], only an estimated 13 developing countries will achieve MDG 5 by 2015. An estimated 31 countries are predicted to achieve MDG 4 during the same period. Only nine countries out of these countries will achieve both MDGs 4 and 5. 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]

UNAIDS aims to bring countries closer to achieving these MDGs through the Global Plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive. The Global Plan has 22 focus countries, 21 of which are in Sub-Saharan Africa. The use of Information and Communication Technologies (ICTs) in health can help countries bridge the gap in achieving the MDGs by 2015, particularly through the use of mobile health. Several global initiatives recommend mobile phones as a means to improve access to maternal health services and reduce maternal mortality (ITU, mHealth Alliance, Mobile Alliance for Maternal Action). A recent study in Zanzibar (Tanzania) demonstrated that mobile phone intervention targeting pregnant women was associated with an increase in skilled birth attendance, which is one of the most important factors for saving women's lives during childbirth according to the World Health Organization (WHO).[6] Evidence also shows that mobile health tools can help minimize time barriers (delays) and facilitate urgent care, as well as support health promotion through mobile messaging services.[7]

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[1] Zaba B, Calvert C, Marston M, Isingo R, Nakiyingi-Miiro J, et al. (2013) Effect of HIV infection on pregnancy-related mortality in sub-Saharan Africa: secondary analyses of pooled community based data from the network for Analysing Longitudinal Population-based HIV/AIDS data on Africa (ALPHA). *Lancet* 381: 1763–1771.

[2] WHO maternal mortality fact sheet: http://www.who.int/mediacentre/factsheets/fs348/en/index.html

[3] WHO child mortality fact sheet: http://www.who.int/mediacentre/factsheets/fs178/en/

[4] Lozano R, Wang H, Foreman KJ, Rajaratnam JK, Naghavi M, et al. (2011) Progress towards Millennium Development Goals 4 and 5 on maternal and child mortality: an updated systematic analysis. Lancet 378: 1139–1165.

[5] Building a Future for Women and Children (2012). Countdown to 2015 Initiative.

[6] http://drp.dfcentre.com/project/wired-mothers-use-mobile-phones-improve-maternal-and-neonatal-health-zanzibar

[7] mHealth Alliance, 2012. mHealth and MNCH: State of the Evidence

ICT and Mobile Health Landscape in Africa

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.[8] Mobile health initiatives cover a wide range of activities, including data collection, disease surveillance, health promotion, diagnostic support, disaster response, and remote patient monitoring. Mobile health initiatives targeting MDGs 4 and 5 (reducing child mortality and improving maternal health) have shown that mobile health can improve maternal and child health through:

- Targeting the reduction of mother to child transmission of HIV and improving maternal and child health through increased access to information by women via mobile messages.
    - o For examples, see MAMA South Africa, Wazazi Nipendeni by the mHealth Tanzania Public-Private Partnership, Grameen Foundation's MOTECH Mobile Midwives initiative in Ghana, mothers2mothers in nine African countries, and Text to Change's work in 17 countries in Africa and South America.
- Laboratory data transmission and data collection via mobile phones and SMS.
    - o For examples, see Early Infant Diagnosis initiative by Project Mwana in Zambia and Malawi, and mTrac in Uganda, by UNICEF; Millennium Villages Project ChildCount+ PMTCT module in Kenya and Ghana; and TRACnet by Voxiva in Rwanda.
- Training and provision of diagnostic support to community health workers through ICTs.
    - o For examples, see Pamoja project and AMREF in Kenya, Tanzania and Uganda.

OVERVIEW

Zero Mothers Die: A commitment towards MDGs 4 and 5 using ICTs and Mobile Health

Zero Mothers Die is a global initiative by an innovative public-private partnership to save the lives of pregnant women, new mothers and their newborns by employing a comprehensive approach to improving maternal, newborn and child health (MNCH) through the systematic use of ICTs and mobile health.

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 ICTs for health. By increasing access to ICTs 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 ICTs.[9]

As 300,000 women die every year of pregnancy-related complications, Zero Mothers Die targets 100,000 pregnant women at high risk, by leveraging the project's systematic distribution of 100,000

[8] ITU (2013). *The World in 2013: ICT Facts and Figures.* Geneva: ITU. Also, ITU (2013). *ICT Global Statistics.* Geneva: ITU. See:
http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2013.pdf
[9] http://mdgs.un.org/unsd/mdg/host.aspx?Content=indicators/officiallist.htm

mobile phones to deliver pertinent pre- and post-natal MNCH information and services to the right women at the right time. Zero Mothers Die also seeks to build the capacity of healthcare workers in the area of MNCH using ICTs as well as digital tools and content.

Zero Mothers Die will target all expectant and new mothers, while maintaining the prevention of mother-to-child-transmission of HIV (PMTCT) as a key element. This scope was chosen to avoid discrimination due to HIV stigmatization, and to ensure women who would become HIV seropositive during pregnancy would not be lost by our initiative. In addition to PMTCT, a special focus will be placed on improving nutrition during the critical first thousand days—from the start of a woman's pregnancy to her child's second birthday—which has been proven to have a significant impact on the well-being and development of children.[10]

The Zero Mothers Die global model presents six mobile-focused components:

(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 100,000 mobile phones per year to vulnerable and "unconnected" pregnant women to increase their access to healthcare information;

(3) An allocation of 36,000,000 minutes of free airtime per year to pregnant women to enable their communication with local health workers and facilities;

(4) Capacity-building of healthcare workers in rural communities using ICTs and digital tools;

(5) A mobile money savings scheme to support the cost of skilled care during childbirth; and

(6) A solar power mobile phone charger to provide green energy for the charging of their mobile phones and to bring financial empowerment to pregnant women through a business generation scheme.

Each country implementation of the Zero Mothers Die initiative will involve an adaptation of the above model based on the context, realities and needs in the country.

OBJECTIVES

The overall objective is to employ a comprehensive approach in reducing maternal and child mortality through the development and implementation of a mobile health project for pregnant women and community health workers with multiple components. This project will support the targets of the UNAIDS Global Plan to reduce the number of new HIV infections among children by 90% through PMTCT, and reduce maternal mortality due to AIDS by 50% by 2015, through an overall improvement in maternal health in the target countries.

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[10] Black RE, Victora CG, Walker SP, et al. Maternal and child undernutrition and overweight in low-income and middle-income countries. Lancet 2013; 382: 427-451

Specific objectives will include:

- Reduction in maternal health complications and maternal and child mortality, preventing mother-to-child-transmission of HIV, and improvement of maternal and child nutrition. This includes targeting pregnant women in general, from the prenatal visit through the second year of the child's life.

- Acceleration of mobile phone ownership and use by vulnerable women, particularly those in rural or isolated communities with lack of resources, to increase access to healthcare, empower women with information and reduce the mobile phone gender gap. This includes education of women on the benefits of mobile phone ownership and use, as well as facilitating connections with local healthcare workers through 30 minutes of free airtime per month restricted to calling assigned local health care facilities and workers.

- Education, training and capacity-building of healthcare workers using mobile devices preloaded with digital content for training and patient education to improve MNCH in their communities, as well as digital tools to support their work, such as patient data collection if a government health information management system is in place, thereby contributing to overall health system strengthening.

<u>Guiding Principles: Sustainability and Scalability</u>

Two guiding principles of Zero Mothers Die are that it should be sustainable and scalable, by building strong local ownership and being integrated into other related health services offered in-country. It is important to avoid any operation in silos, and that it leverages what the Ministry of Health and UNAIDS is doing in-country and becomes part of the local health ecosystem. Local ownership, integration within local health ecosystems, and inclusive business models will be key to the sustainability of the project.

- Relevant local Ministries (Health, Communications, Family and Welfare, etc.), agencies, stakeholders and partners will be engaged in the project processes to secure their buy-in and local ownership to ensure sustainability beyond donor funding and scale up.

- Zero Mothers Die will be integrated as much as possible into health services offered in-country and local health information management systems, in connection with the private sector and telecom providers, thereby integrating within local health ecosystems. Efforts will also be made to ensure the project is aligned with national eHealth policies and plans.

- Zero Mothers Die aims to establish an inclusive business model to ensure long term sustainability beyond 2015.

PROJECT PHASES 2012-2016

Initiated in Geneva in April 2012 at the Global Health Dynamics Roundtable, **Zero Mothers Die** has conducted a series of activities in order to build a strong partnership covering all aspects of the project. The phases of the global project cover:

1.   *2012 – 2014: Preparation, Advocacy and Partnership Initiation*

Zero Mothers Die is led by a Consortium composed of three founding organizations, Advanced Development for Africa Foundation (ADA), Millennia2025 Foundation and UniversalDoctor Project, in partnership with UNAIDS and supported by a key technology partner, Airtel, which joins the partnership consortium for the first implementation phase in Ghana. Additional partners are currently being contacted**.** As of January 2014, the Zero Mothers Die Consortium has conducted a series of meetings with potential partners and prepared a detailed project proposal, including estimated costs.

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 ITU. Zero Mothers Die was also presented at the Millennia2015 International Conference at UNESCO, 3-6 December 2012, and at the special session on Women and eHealth at Med-e-Tel, 10 April 2013, Luxembourg. On all occasions, the project has elicited great interest among the participants.

The estimated budget of this phase is **US$230,000, comprising US$162,000 of in-kind support** already provided by ADA, Millennia2025 Foundation and UniversalDoctor Project.

2.   *2014 – 2015: Implementation Phases*

Ghana was chosen, in consultation with the major technical partners, as the first country implementation for Zero Mothers Die. The Country Director of the UNAIDS Ghana office was the initial lead for bringing the Ministry of Health (MOH) and other government and UN agencies on board as country partners in the process. Several major stakeholder meetings and technical visits for ZMD 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 GHS, FHD and NACP), Ghana AIDS Commission, Ministry of Communication, National Communication Agency, Greater Accra Regional Ministry, Municipality of Accra, Accra Regional Health Service, Airtel Ghana, UNAIDS, WHO, UNICEF, UNAIDS-Geneva and Partners (by videoconference).

Dr. Afisah Zakariah, Director of Policy, Planning, Monitoring & Evaluation (PPM&E) at the Ministry of Health, was appointed as the lead for the ZMD Planning and Task Team within the MOH to lead the preparation and implementation phases of ZMD 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). Ghana Health Service has now taken on the lead of operationalizing the ZMD Ghana implementation plan under the leadership of Dr. Anthony Ofosu, in cooperation with Airtel. Regarding the technical implementation of the mobile messaging service, Grameen Foundation has been chosen as the lead implementer in the field.

Pending ongoing technical discussions between the technical partners to operationalize the project, the launch of the initial implementation phase is set to take place within 2015.

Project formulation and preparatory phases are underway in Gabon, Nigeria, Zambia, Mali and Rwanda, in close partnership with local agencies including Ministries of Health, ICTs/Telecommunications and First Lady's Offices.

Depending on the development of ongoing partnership negotiations, the next phases of implementation will be conducted in additional countries.

For any Zero Mothers Die country project, an implementation plan will be developed with national authorities, including estimated budgets calculated per country of implementation, with the contribution of the Millennia2015 communities in countries, ADA experts and consultants, and local representatives of the partners.

3. *2016 - 2017: Scale Up Phases*

In-country and cross-country scale up expected and being planned for.

TARGET COUNTRIES & BENEFICIARIES

I. Target Countries in Africa

The Zero Mothers Die project will initially launch in select pilot countries in Africa. The choice will be based on:

   a) Target countries for the UNAIDS Global Plan,
   b) Capacity of the consortium to deliver the project in that location,
   c) Local health worker capacity for mobile health services as indicated by sensitization of CHWs to using ICTs in their work,
   d) Existing networks and relationships with key local stakeholders.

II. Target beneficiaries

   • Expectant women and new mothers and their children (from pregnancy up to the second birthday of her child): 100,000[11]
   • Local community health workers (CHWs): x (depending on countries of implementation)

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[11] Target of 100,000 calculated as 10% of estimated annual number of women who could participate in Zero Mothers Die over two-year project implementation.

TECHNICAL COMPONENTS

The Zero Mothers Die project model consists of the following technical components[12]:

1. Increase Access to Maternal, Newborn & Child Health Information

MumHealth: Maternal & Child Health Information through Mobile Messaging Service

The first component will focus on delivering culturally sensitive maternal, newborn and child health (MNCH) information via text and voice messages to pregnant women and new mothers, and potentially expanded to partners, relatives and others involved in the pregnancy. [13] Subscribers to the service would register by indicating the expected due date or birth date of their newborn and receive health messages and reminders up to thrice weekly (the design of the service will be adapted according to each in-country implementation) during the 40 weeks of pregnancy and the first 104 weeks of the child's life. Beyond general maternal and child health, messaging would include content on PMTCT, proper nutrition, breastfeeding, immunizations, birth spacing and referrals to local health resources. This component is directed towards women who already own a mobile phone[14] and those equipped with mobile phones through the Zero Mothers Die project (see Component 2). Similar initiatives have been successful in South Africa, Ghana, Tanzania, Bangladesh and other low and middle-income countries.

The content for the MNCH mobile messages will cover topics such as PMTCT and be drawn from various sources, including the Mobile Alliance for Maternal Action (MAMA) mobile messages library, and customized to form a repository of audio (voice) and text messages in up to four local languages/dialects per region of implementation. This repository, called **MumHealth**, is being developed in partnership with UniversalDoctor Project to tackle illiteracy, language barriers and access by women with disabilities. The messages will be localized according to local languages/dialects, cultures, literacy levels, etc., using well-tested processes developed by UniversalDoctor to ensure successful uptake.

Airtel Africa is providing 250,000 free SMSs per year for the first implementation phase of MumHealth in Ghana, along with a one-time allocation of 8,000 Airtel sim cards. Airtel is committed to ensuring the connectivity is effective and accessible by not only Airtel customers but also users on all major mobile networks in Ghana. The project has secured the support of the Ministry of

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[12] All components of the project would strongly benefit from a promotional media campaign to increase awareness of the project's activities and to increase participation levels. This is particularly true for Component 1, which would require users to opt-in to the service by registering and therefore they need to be aware of the service and how to register (a best practice from the Wazazi Nipendeni maternal health messaging service).
All components would also benefit from the participation of local, on-the-ground partners who understand local contexts and have strong local networks to promote the project's activities.

[13] Platform selection will depend on final project formulation and design. Options include the WeLUCY Digital Inclusion platform, Text to Change's platform Vusion, and Grameen Foundation's MOTECH Suite, as well as local government platforms already in use.

[14] With the assumption that external subscribers (women who own mobile phones) will pay for a subsidized cost of this service, with subsidization depending on the project funds raised, to maintain sustainability of the project.

Communications and Ministry of Health in Ghana in order to help secure the alignment and participation of other mobile network operators in Ghana for the project, with Airtel as the lead. This alignment is necessary to ensure any pregnant woman, regardless of which network they are currently subscribed to, can benefit of the services provided by Zero Mothers Die.

2. Access to Mobile Devices by Pregnant Women

Provision of 100,000 Mum's Phones per year

The second component involves the provision of specially designed yet low-cost mobile phones, called Mum's Phones, preloaded with a set amount of free (restricted) airtime to pregnant women, particularly targeting those that are at-risk, low-resource and in rural communities, to enable their access to information and care.

This component will accelerate the access and use of mobile phones by pregnant women, empower women through increased access to information, and reduce the mobile phone gender gap. Participating women will be provided with a mobile phone after their fourth month of pregnancy. The minimum requirements for women to participate in the project include: (1) registration of pregnancy at the nearest healthcare center or in the villages by CHWs, nurses or midwives, and (2) commitment to at least four prenatal visits before childbirth. The registered pregnant women will receive tailored MNCH information, important reminders and instructions directly to their assigned mobile phones. Equipping expectant women and new mothers with registered mobile phones ensures a CHW will be able to contact them with important information regarding their pregnancy. Thanks to Component 3 (below), pregnant women will also be able to communicate directly with CHWs.

This component may also include equipping CHWs with mobile phones to attend women during pregnancy and during the first year of childbirth, if it is determined that there are not adequate mobile phone ownership levels among this target group in the areas of implementation.

3. Access to Communication with Health Workers & Facilities

Connectivity and Free airtime: 36,000,000 minutes per year

Thirty minutes per month of free airtime allocated to each pregnant woman's mobile phone will be restricted for calling assigned CHWs, healthcare centers or referral hospitals. The aim of this component is to facilitate communication between pregnant women and CHWs, midwives, nurses and doctors to improve access to pregnancy-related services, such as attended births, and enable the women to share information on their pregnancies as well as ask questions to CHWs. During the period of use, the expectant or new mother may purchase her own airtime, in addition to the free airtime provided, to use the phone as her own. Once the period of use is complete (pregnancy through the second birthday of the child, or maximum 33 months), the mother would then keep the mobile phone and continue purchasing airtime and using the mobile phone.

Airtel Africa is providing an allocation of 675,000 minutes of free airtime per year for the first implementation phase of Zero Mothers Die in Ghana, which will be used towards providing the enrolled with 30 minutes of free airtime per month during their pregnancy and first year of child's life. The allocation of minutes would begin upon registration of pregnant women into the Zero Mothers Die project, i.e. the start date of the implementation phase.

4. Empowering Community Health Workers through Access to Information & Training

Education and Capacity-Building of Health Workers

This component will provide access to health information, training and capacity-building for health workers through digital tools and content. Providing access to health information and ICT support for health workforce development are two priority eHealth actions identified by WHO and approved by the Executive Board in 2006.

To achieve this, Zero Mothers Die Ghana is leveraging a unique mobile eco-system partnership initiative launched in Sub-Saharan Africa by GSMA Mobile for Development during the PMNCH Partners' Forum in July 2014. Collectively, this partnership initiative will be launching a mobile health product, called Smart Health Pro, and a group of mobile services tailored for health workers in Ghana in September 2014, which will consist of:

- Discounted Samsung handsets and tablets for health workers (and consumers);
- A mobile application called Smart Health Pro that provides a range of professional healthcare applications, information and services for health workers (accessible via Google Play and pre-loaded on 80 million Samsung devices), which will be tailored by country to meet local needs;
- A deal by MTN whereby all existing and new MTN SIMs will allow local health workers free (zero-rated) access to download the Smart Health Pro mobile application and health content, perform health registration and data collection, and other healthcare related download/upload of data – all for free;
- Making innovative diagnostics like the Omega Diagnostics Visitect HIV CD4 point of care solution more affordable and accessible via mobile integration
- Providing access to the Samsung ecosystem (e.g. music, video and other value-added services) to be used as an incentive to drive health usage.

The companies in this partnership are working to deliver the objectives of the United Nations Every Women Every Child Global Strategy, as well as the Global Nutrition for Growth Compact, in the areas of nutrition and maternal and child health.

Zero Mothers Die will also bring together other partners with existing projects to deploy their technology-based initiatives geared towards supporting the work of healthcare workers and specifically adapted for low-resource settings in the field.

5. Access to Skilled Care During Childbirth

Mobile Money Savings Scheme for Attended Childbirth and Related Costs[15]

Many births in developing countries still occur at home, far from skilled care, resulting in higher rates of maternal and neonatal mortality. This component involves building a mobile money savings scheme to enable pregnant women to save money over time to finance attended childbirth. Lack of financial coverage for attended childbirth is a key barrier to safe births and post-partum care for mother and child.

Through this component of Zero Mothers Die, pregnant women would be able to enroll in a pre-paid maternal health mobile money savings scheme built on local mobile money services/solutions at the same time as they register their pregnancy at the local healthcare center or with the CHW. The figure below details the various use-cases of MFS for the maternal and child health continuum of care.
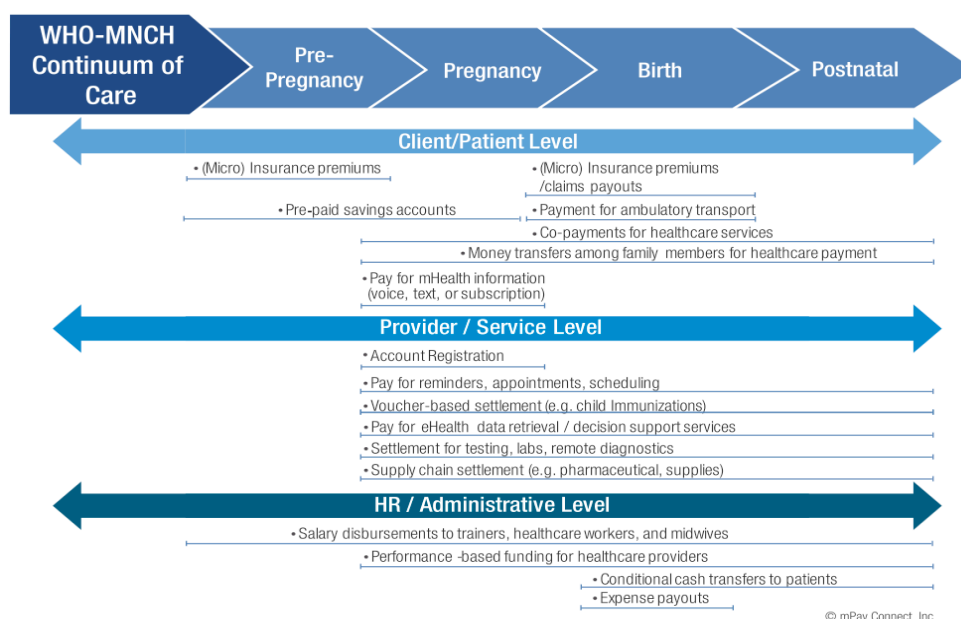
Source: Gencer, M. (March 2012). *Advancing the Dialogue on Mobile Finance and Mobile Health: Country Case Studies.* mHealth Alliance.

Incentives for attending antenatal care services could be built into the scheme by providing additional deposits into women's childbirth savings for attending these services. Successful implementations of mobile money savings schemes for maternal health in Kenya include Changamka MicroHealth's maternal health smartcard micro-savings program and Mamakiba's maternal health care savings platform, which both use Safaricom's M-Pesa mobile money transfer system.

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[15] The inclusion of this component will depend on the countries selected for implementation, particularly whether mobile money services exist in-country and are feasible for the project.

CASE STUDY: CHANGAMKA MATERNITY SMART CARD – KENYA

Changamka's initial service was a Smart Card based micro-savings initiative targeting maternal health. Clients could add funds in small increments to the card via a mobile phone using m-Pesa. The initial card was pre-loaded with KSh 500. A basic insurance plan was offered for approximately $50 that covered antenatal care, delivery and postnatal care. The $50 insurance package is considered fairly expensive by Kenyan standards, so the underlying business model was dependent on corporate sponsors in order to be acceptable to a greater number of women and couples. While nearly 10,000 clients were using Changamka by June 2011, there were numerous challenges for scalability and sustainability of the business model due to the costs of Smart Cards, costs of GPRS terminals and lack of venture capital. A new mobile-based business model that connects to the government-sponsored health insurance plan is currently being developed that could address some of the shortcomings of the initial business model. The new model would deploy m-vouchers that would cover costs of delivering a baby in a health care facility and a pre-payment vehicle that facilitates cost-sharing of about 10 percent of delivery costs. The move from a paper voucher to the m-voucher can reduce administrative costs of the voucher program by approximately 15 to 27 percent.

CASE STUDY: MAMAKIBA – KENYA

Mamakiba is the mobile maternal healthcare platform of Jacaranda Health – a startup social venture for maternal health based in Nairobi. Upon meeting with a Mamakiba healthcare worker, low-income, pregnant women in peri-urban areas of Nairobi with mobile phones linked to M-Pesa can establish a savings target that will cover the costs of their pregnancy, from ante-natal care to delivery. They can further set up a savings plan that will allow them to meet that goal, and begin payments via their M-Pesa accounts. The pregnant women register at the Jacaranda Health clinics during their first visit by opening an electronic medical record, which can simultaneously register them for Mamakiba. Once the pregnant women opt into Mamakiba, the savings calculator estimates two amounts: a) the total amount she needs to save for the selected bundled service and b) the minimum amount she needs to deposit to savings prior to the next ANC visit. Once a clinical service is delivered, the amount is deducted from the patient's savings account.

CHALLENGES & RISKS

Targeting HIV seropositive pregnant women could lead to discrimination due to stigmatization of the disease.
Proposed solution*:* This will be avoided by broadening the project scope to cover maternal mortality in general and including all pregnant women in the project.

Language and low literacy barriers may pose obstacles to reaching the target populations.
Proposed solution: The mobile messages will be developed in key languages/dialects in the area of implementation and will be tailored and localized for target beneficiaries. In order to overcome the

challenges of low literacy and disabilities, Interactive Voice Response (IVR) technology will be used to develop voice messages as an alternative solution by offering pre-recorded audio information in different languages/dialects. Digital multimedia content will also be provided to community health workers to promote audio-visual learning and capacity-building.

Mobile phone ownership levels may be low, particularly amongst the target beneficiary group of pregnant women.

Proposed Solution: Zero Mothers Die endeavors to equip at-risk, low-resource pregnant women who do not own a mobile phone with the Mum's Phone, a low-cost mobile phone specially designed for pregnant women.

Misuse or resale of the mobile phones provided by the pilot to equip the pregnant women.

Proposed Solution: Equipping women with uniquely designed phones with limited functionality could avoid this. This can also be tackled by restricting the numbers that can be dialed through the mobile phone.

Lack of internet connectivity can restrict accessibility to curated education & training content for CHWs.

Proposed Solution: Equip CHWs with tablets preloaded with content adapted to their needs, thereby requiring no connectivity for use. Content in the proposed target health areas also do not change much and therefore do not require frequent updating.

Lack of local ownership of the project by local partners and stakeholders can prohibit uptake and sustainability of the project, particularly given the potential cost burden.

Proposed solution: The Ministries of Health and Communications, as well as other Ministries, Departments and Agencies, are being brought onboard to be involved in processes of project formulation and implementation, as well as sensitized on the objectives of Zero Mothers Die to secure local buy-in and eventual ownership of the initiative. The partnership, along with local government agencies, will ensure that project objectives are aligned with local health objectives, priorities and strategies.

Importation of mobile phones for and used by the ZMD project can be confused with the flood of fake Chinese mobile handsets on the market.[16]

Proposed Solution: ZMD will ensure the mobile phones acquired and distributed by the project to the pregnant women will come from responsible mobile phone manufacturers who are reliable in providing quality mobile phones.

EXPECTED RESULTS: IMPACTS & OUTCOMES

The Zero Mothers Die project aims to achieve the following impacts and outcomes:

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[16] See: http://www.ghanaweb.com/GhanaHomePage/features/artikel.php?ID=182497

1. Impact: Improved maternal, newborn and child health and nutrition of target population due to increased education, awareness and access to health information by expectant and new mothers as a result of mobile phone technology and ICT based health services. By enabling this access to information, the expectations are that more pregnant women and new mothers will adopt appropriate healthcare seeking behavior, and avoiding maternal and child health complications. Targets:
   - Achieve 5% reduction in prevalence rates for stunting in children <5 of target population registered for Zero Mothers Die health services
   - Achieve 5% improvement in Body Mass Index (BMI) of women of reproductive age registered for Zero Mothers Die health services
   - x% reduction in maternal health complications within target population registered for Zero Mothers Die health services.

2. Impact: Reduction in the number of new HIV infections among children. Target:
   - x% reduction in number of new HIV infections in newborns of target population registered for the Zero Mothers Die health services
   - 100,000 registered pregnant women in components 1 and 2
   - 100,000 registered women who have received HIV-nutrition relevant messages through the course of pregnancy and in the first 1000 days of life

3. Impact: Increased mobile phone ownership among at-risk or resource-poor women, increased awareness of benefits of mobile phones and increased knowledge of how to use them to improve well-being of the women themselves and their children. This includes:
   - x mobile phones distributed to expectant and new mothers.

4. Outcome: New knowledge and practices adopted by the target population of Zero Mothers Die health services. Targets:
   - At least 15% of registered active users demonstrate changes in knowledge or behavior in relation to nutrition practices as recommended by The Lancet June 2013, in either one or several knowledge domains:
     i. Improved maternal nutrition practices during pregnancies,
     ii. Improved infant and young child feeding practices (nutrition in the first 1000 days of life),

5. Outcome: Capacity building of midwives, nurses and CHWs in implementation areas of the project to use ICTs in their work to strengthen their capabilities and register, schedule visits and track pregnant clients. This includes:
   - x health workers trained
   - x pregnancies attended
   - x health workers using tools and algorithms for nutritional management of childhood illnesses, etc.

6. Outcome: Local ownership of the project by local partners and stakeholders, including government, who will be directly involved in processes of project formulation and implementation to promote buy-in and work towards eventual local ownership of the initiative.

PROJECT MONITORING & EVALUATION

Periodic six-monthly multipartite review meetings will be held based on periodic progress reports provided by country implementation partners and organized feedback from the field to the partners/donors. Quarterly field monitoring visits and reporting will be supported by ADA, along with a mid-term evaluation and independent end of project evaluation.

PROJECT PARTNERS: ROLES & RESPONSIBILITIES

CONSORTIUM PARTNERS

Advanced Development for Africa (ADA)

Representatives:
- Coumba Touré, President
- Yunkap Kwankam, Senior Advisor on eHealth

Roles & Responsibilities:

To provide overall coordination of the project, including management of full project development, needs assessment, landscape analysis, site visits, identifying a local focal point for day-to-day management and local implementing partners, monitoring and evaluation (M&E) strategy, and final project report.

Website: www.adaorganization.org | Contact email: cdtoure@gmail.com

Millennia2025 Foundation

Representatives:
- Véronique Thouvenot, Co-Founder, Scientific Director
- Anne Petitgirard, Senior Advisor in Maternal and Child Health, and HIV
- Lilia Perez Chavolla, Senior Advisor in ICT Applications

Roles & Responsibilities:

To provide tools, content, local expertise and services to address on-the-ground challenges and tackle illiteracy and disability barriers, as well as access to local networks through Millennia2015 communities in regions, and research to inform needs assessment and landscape analysis. Millennia2025 will also provide scientific research, project support and coordination of implementation, reporting and M&E plans.

Website: www.millennia2015.org | Contact email: thouvenot.veronique@millennia2015.org

UniversalDoctor Project

Representative:
- Jordi Serrano Pons, Founder & CEO

Roles & Responsibilities:

To build and develop tailored and localized platforms of information for both CHWs and pregnant women called UniversalWomen Educator and MumHealth, respectively, and provide the technical expertise necessary for implementing Components 1 and 4 of the project. UniversalDoctor will also lend its expertise in appropriate translation and localization of content for different communities.

Website: www.universaldoctor.com | Contact email: jserranopons@universaldoctor.com

Global Partnerships Forum

Representatives:
- Mr. Amir Dossal, Chairman and Founder

Roles and Responsibilities:

Lend expertise in strong partnership building and management and provide support in brokering new partnerships. Global Partnerships Forum serves as a platform for building innovative partnerships and alliances, and facilitates collaborations with policy makers, business leaders, entrepreneurs, philanthropists, investors, and thought leaders from across sectors. The Forum will support fundraising and outreach efforts to encourage investments in Zero Mothers Die.

Website: http://www.partnerships.org | Contact email: dossal@partnerships.org

TECHNICAL PARTNERS[17]

UNAIDS

Representatives:
- Catherine Bilger, Senior Advisor for the Global Plan
- Girmay Haile, Country Coordinator, UNAIDS Ghana

Roles & Responsibilities:

To facilitate partnerships with and ensure strong representation by key local and national stakeholders, including the Ministry of Health and its National AIDS Control Program, Ghana AIDS

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[17] The success of the project will depend on the support of:
- → National governments, ministries of health, technology, telecommunications, administrative and legal support;
- → Local partners in the areas of implementation: local healthcare units, local administrative and public health authorities, NGOs, Millennia2015 communities, women's associations;
- → Additional partners from the private sector: telecom providers, technology companies;
- → International foundations, universities and academies;
- → Global networks and communities of practice.

Commission, PEPFAR (USAID or CDC or both), GTZ, and other UN agencies (UNFPA, UNICEF, and WHO). UNAIDS will also provide health expertise specific to HIV, including content for PMTCT messages and training, as well as project support via Country Office or Regional Support Team.

Website: www.unaids.org | Contact email: BilgerC@unaids.org

AIRTEL

Representatives:
- Beverlyne Mudeshi, CSR Manager, Airtel Africa
- Tina Muparadzi, HR Director, Airtel Ghana
- Maame Dufie Cudjoe, Head of CSR, Airtel Ghana
- Donald Gwira, Head of Corporate Communications, Airtel Ghana
- Francis Amediku, Strategic Projects Director, Airtel Ghana

Proposed Roles & Responsibilities:

To provide contributions of core competencies to operationalize Components 1 and 3 in Ghana, which include the allocation of 675,000 free airtime minutes and 250,000 SMS messages, to particularly operationalize the MumHealth mobile messaging service, and provide overall technical expertise for the project. Airtel's corporate communications team will further support the advocacy and communications around Zero Mothers Die within Ghana. If deemed suitable, additional role would be to develop mobile money maternal health micro-savings solution to operationalize Component 5.

Website: http://www.africa.airtel.com | Contact email: Tina.Muparadzi@africa.airtel.com

ZMQ Software Systems

Representatives:
- Hilmi Quraishi, Co-Founder and Director of Social Initiatives
- Subhi Quraishi, Co-Founder and CEO

Roles and Responsibilities:

To provide content, applications and mobile design expertise for the mobile messaging service and community health worker training components of Zero Mothers Die. Existing ZMQ solutions, such as the MIRA Channel or Women Mobile Lifeline Channel, Mobile Prenatal and Postnatal Care solutions, and others, will be adapted for the Zero Mothers Die countries of implementation to bring the award-winning solutions of ZMQ to African MNCH contexts.

Contact Person for the Project:

Jeannine Lemaire, Global Program Manager for Zero Mothers Die Project & Consortium (Jeannine.Lemaire@zeromothersdie.org)

APPENDIX

Reference initiatives in the region:

- **Zero Mothers Die of HIV (derived version to address HIV)**
- **Pesinet** – lessons learned on equipping health workers with mobile phones.
- **UniversalDoctor Project (UniversalWomen)** – to tackle language barriers.
- **Mobile Alliance for Maternal Action (MAMA)** Adaptable Messages Library – MAMA has developed a free and extensive adaptable mobile messages library for programs that are using mobile phones to inform and empower new and expectant mothers. These health messages and reminders are comprehensive, stage based and available for use in SMS and audio (IVR) programs. They can be adapted to different languages and to address specific needs. MAMA South Africa, through the support of BabyCenter LLC, also developed specific messaging component around PMTCT.
- **Wazazi Nipendeni** – a 'healthy pregnancy' media campaign by the mHealth Tanzania Public-Private Partnership, which includes a mobile component delivering maternal health messaging to expectant and new mothers, depending on the topics chosen by the user. Wazazi Nipendeni's main technology partner is Text to Change and the mobile component of the campaign uses the Text to Change platform.
- **Text to Change** – an mHealth organization that has implemented 70+ successful interactive mobile messaging programs in 17 countries. TTC has developed a flexible and easily scalable mobile messaging platform to send out and receive text messages, voice and data.
- **MOTECH** – The Mobile Midwife and Nurses Application of MOTECH used by the Grameen Foundation in Ghana. The first component, Mobile Midwife, enables women and their families to receive voice and text messages that provide time-specific information about their pregnancy, while the second component helps CHWs to record and track the care delivered to women and newborns in the area.
- **The Jokko Initiative** – This community empowerment initiative was launched in 2009 and implemented in partnership by Tostan, a West African NGO, and UNICEF. Phase one of the initiative covered teaching the basics and practical uses of standard mobile phones through Tostan's programs in 800 communities in 8 African countries, particularly targeting women, girls and youth.
- **eRanger Motor Cycle Ambulance** – This efficient and inexpensive emergency transport method is used by major UN agencies and national governments in over 20 countries in Sub-Saharan Africa. Could potentially be integrated into this proposal.
- **WAHA Motorcycle Ambulances**
- **Campaign on Accelerated Reduction of Maternal, Newborn and Child Mortality in Africa (CARMMA)** – CARMMA is an African Union campaign initiated in 2009 officially in 37 African countries. Activities of the campaign include mobilizing political will and coordinating interventions around country-led plans/roadmaps and initiatives to improve maternal, newborn and child health.
- **Mobile Data Toolkit (http://mobile.ictdev.org) –** a database of services and software useful for international development and social change work in gathering data and engaging with constituents using mobile devices. Developed by Jon Camfield.