

**Project Brief: Information and Communications Technology for MNCH
Implemented by VillageReach in Balaka, Malawi**

Concern Worldwide US received a five-year grant from the Bill and Melinda Gates Foundation to support the development and field testing of bold and inventive ways to overcome barriers to delivering proven maternal, newborn, and child health (MNCH) solutions.

While the Millennium Development Goals inspired progress in reducing maternal and infant mortality rates, still more than 360,000 women die every year from complications due to pregnancy and childbirth. Nearly 4 million newborn infants die each year before reaching one month of age, accounting for the majority of all under-five deaths. In Malawi, the maternal mortality ratio is 675 deaths per 100,000 live births while 31 children for every 1,000 born die in the first month of life. The knowledge, tools and treatments to address the major killers of mothers, newborns, and children under five do exist. However, there are intractable barriers that prevent those life-saving interventions from reaching the people who need them most.

The *Innovations for Maternal, Newborn and Child Health* initiative was built around the value of input from local communities in finding solutions to those barriers. Using varied approaches such as nationwide calls for ideas, workshops, individual consultations and other mechanisms, *Innovations* seeks out and develops innovation where it can be found. Ideas from unheard and unconventional voices often excluded from healthcare planning and decision making have played an important part in designing the *Innovations* projects.

In Malawi, *Innovations* ran a nationwide campaign (“Share an Idea, Save a Life”) in 2009, which generated over 6,000 ideas from Malawi’s general public about how they would like to improve quality of health services. Through a rigorous assessment and selection process, *Innovations* identified two winning ideas. Both ideas aim to establish direct and personalized channels of communication between the health system and its clients through the use of information and communication technology (ICT). One of the winning ideas, submitted by Soyapi Mumba, involves setting up a 24-hour toll-free hotline, which can be accessed by clients seeking health advice about their pregnancy or the care of young children. The second winning idea, submitted by Clement Mwazambumba, involves setting up a booking system for antenatal care (ANC) and postnatal care (PNC) using SMS technology.

Innovations saw tremendous synergy between the two innovative ideas and is testing them within the same pilot project. Over the next two years, *Innovations*, in collaboration with UNICEF, the Ministry of Health (MOH), and a range of implementing partners, will test the effectiveness of each winning idea in improving the quality and coverage of MNCH interventions in Balaka District.

VillageReach is the lead implementing agency on the project. They have partnered with Baobab Health Trust, PATH and MOTECH to support specific aspects of the technology. Invest in Knowledge Initiative (IKI) is providing research and evaluation support.

Objectives of the Two-year Pilot Project

- Improve the quality of MNCH case management;
- Improve maternal, newborn, and child health-seeking practices;
- Increase community confidence in the health system.

Key Components

The pilot project has four key components that are being developed and implemented in Balaka District.

1. **A toll-free case management hotline:** The hotline – known in the local language as *Chipatala cha pa foni* (Health center by phone) – is based at the Balaka District Hospital and provides health information and advice on maternal, neonatal, and child health issues to callers who may be out of reach of health surveillance assistants (HSAs) and health facilities. Hotline callers can also enroll in a mobile phone tips and reminders service and will be able to link into emergency transport options and receive protocol-based advice and health center referrals.

Key Features:

- The Hotline is staffed by operators trained to the level of HSAs, representing a current and sustainable MOH cadre.
 - Hotline staff are trained using MOH clinical-decision protocols to facilitate prompt care seeking from the appropriate level of provider (village clinic, health centre, hospital). They provide health information, advice, and referrals to the health system.
 - Additional support is provided through consultation and supervision by district hospital nurses with specialties in Safe Motherhood and Integrated Management of Childhood Illnesses.
 - A simple touch screen device, specially adapted to this project by the local Malawian eHealth organization Baobab Health, guides hotline staff through point-of-care protocols or algorithms and allows staff to record encounter data into a database for monitoring and planning purposes.
 - Community phones provided to carefully identified volunteers are used to supplement access to phone services. Volunteers also engage in community mobilization and sensitization activities to generate demand for the service.
2. **An automated and personalized tips and reminder service for pregnant women and caregivers of children under five.** Subscribers receive automated tips and reminders through either voice or SMS messages directly to their phones on a weekly basis. Community members without access to a private phone can work with the volunteer in their village to retrieve their weekly message through a toll-free phone call using a community phone maintained by the volunteer.

Key Features:

- Messages are personalized for registrants based on their week of pregnancy or the child's age and reinforce the government's minimum package of high-impact interventions to improve maternal and child survival.
 - Messages were developed in collaboration with district-level government health staff, with technical support from PATH and the Grameen Foundation, and were reviewed by central MOH staff for coordination with other national-level activities and policies.
 - Users can receive messages as texts or a recorded message in Chichewa or Yao, the two local languages.
3. **A health center booking system.** A booking system for ANC and PNC visits is being implemented in two of the four pilot sites. This system provides both a specific date for clients to return to the health center for these visits, as well as SMS reminders sent to the client's phone.

The booking service is intended to improve health center readiness by allowing health center staff to prepare for each day's patients, as well to plan for the upcoming week. The booking system is also the first link in a follow-up chain that identifies women who have missed routine appointments and can allow for the activation of community resources (HSAs, Community Volunteers) to address the issues first hand. For each health center, the system was developed in collaboration with district health staff to ensure its acceptability and viability for that environment and its resources. The booking system is being tested in half of the focus health centers to assess its feasibility and impact.

Key Features:

- Health Center staff determine the specific number of patients for routine visits each day so as not to overwhelm the health center.
- The actual booking (assigning a patient to a particular day for a particular service) is completed by an HSA who will then update appointments on a centralized calendar with a mobile device that allows him/her to see a list of patients scheduled for the day, as well as information about the purpose of the visit.
- SMS messages are sent to women who have access to a phone to remind them of their upcoming appointments.

4. **Community outreach, education, and mobilization on MNCH issues.** Community Volunteers (CVs) are crucial to enhancing community understanding and use of the project's services. With the help of the HSAs, over 350 volunteers were identified – at least one for each village in the four catchment areas being targeted – who are literate, involved in health promotion, and willing to volunteer time to assist in *Chipatala cha pa foni* outreach and tips and reminders registration.

Many women do not share their pregnancy status outside of the family early in the pregnancy, often waiting until they are “showing” to acknowledge the pregnancy in public. For this reason, village-level demand generation activities target all women of child-bearing age, but with the clear message that the hotline and tips is for pregnant women and caretakers of young children.

CVs have the following responsibilities:

- Educate traditional leaders and other community influencers about *Chipatala cha pa foni* to encourage use of the hotline and tips and reminders.
- Conduct community outreach events to draw the community together to talk about *Chipatala cha pa foni* and how it can be used to access information on pregnancy or care of children under 5.
- Visit households with women of child bearing age to talk with the women and their other influencers about *Chipatala cha pa foni* and to demonstrate how to access the hotline and to sign up for the tips and reminders service.
- Conduct follow-up visits with women who are registered for the tips and reminders service to ensure that they received the week's messages or help them call into the interactive voice response system to access them.
- Maintain a log of all outreach events, all home visits, all problems reported by the community, and all calls that are made to the hotline using the community phone.

- Attend regular meetings with VillageReach and the District Health Promotion Officer to discuss outreach efforts, community response to the services, and new strategies for demand generation.

Invest in Knowledge Initiative, a Malawi-based research organization, is providing research and evaluation support to enable Concern and the implementing partners to assess the effectiveness of the innovations in achieving the project's objectives. In the meantime, VillageReach and its partners have taken a number of steps to build local capacity for supporting the technology and the intervention after the conclusion of the pilot project in a number of ways:

- Develop the software in collaboration with a Malawian organization – Baobab Health – that is already committed to working in partnership with the MOH to design and implement health-specific software and hardware solutions across Malawi;
- Use open-source software in the project in order to allow for sharing of codes, limited operating costs, and easy transfer to other partners (which in turn will facilitate scale up);
- Involve district health authorities and health center staff in decisions about the set-up, design, and management of the program from the beginning;
- Use existing cadres of staff to manage the hotline and build the hotline so it can continue to be staffed and supported with local resources;
- Locate the hotline and hotline staff at the district hospital in order to build technology capacity, allow for oversight of the hotline by district health staff, and facilitate referrals between hotline staff and district hospital workers, when needed;
- Negotiate on behalf of the project with the telecommunications providers to ensure low-cost messaging and airtime for the booking system and the hotline;
- Where possible, use equipment that can be sourced by in-country partners so any future expansion of the pilot project can be easily managed by a variety of sources; and
- Create a transition plan with district health authorities outlining how the project ownership will be transferred to the district, and start transition six to nine months before the end of the pilot project.

Innovations with the implementing and research partners are working to ensure that the evidence generated by this pilot project will contribute to ongoing national dialogue on ways to save the lives of women and children in Malawi.

Concern Worldwide helps people living in extreme poverty achieve major improvements in their lives that last and spread without ongoing support from Concern. *Innovations* works with the Ministry of Health and the project's partners to share the lessons learned from the pilot and to transfer knowledge to other districts and partners who may wish to assist in any expansion plans developed by the Ministry of Health.