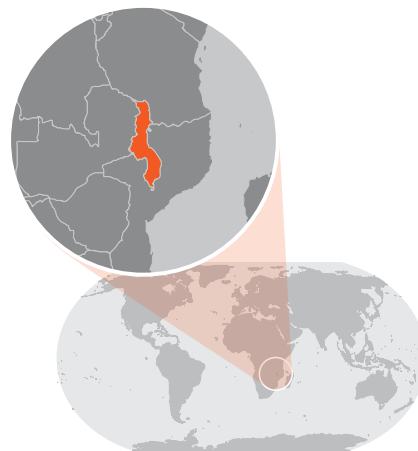


CHIPATALA CHA PA FONI MALAWI



BACKGROUND: REPRODUCTIVE, MATERNAL, NEWBORN AND CHILD HEALTH IN MALAWI

Maternal, newborn, and child mortality rates in Malawi are among the highest in the world. The maternal mortality ratio is 675 maternal deaths per 100,000 live births and the under-five mortality rate is 112 deaths per 1,000 births.¹ Underlying causes of poor health for women and children include limited availability of timely and reliable health information for decision-making and poor access to and use of health facilities.

Chipatala Cha Pa Foni: Improving Access to Reproductive, Maternal and Newborn Health Information and Services in Malawi

Pregnant women and mothers may delay seeking care or taking appropriate preventative or curative action;² may not be able to access appropriate health services;³ or they may access health facilities unnecessarily thereby increasing the load on the already overburdened health system. Knowing where to go for care and when are integral to maximizing health care access and utilization and reducing maternal and child mortality.

Chipatala Cha Pa Foni (CCPF), which in English means Health Center by Phone, aims to increase knowledge and improve health seeking behavior among pregnant women, guardians of young children and women of child-bearing age.

THE INTERVENTION: CHIPATALA CHA PA FONI

Chipatala Cha Pa Foni (CCPF) is a hotline and voice/text based tips and reminders service providing women and guardians of young children in rural and underserved areas with access to information, medical advice and referrals on

1. National Statistical Office, Malawi (2011). Malawi Demographic & Health Survey, 2010. Available at: <http://www.measuredhs.com/publications/publication-FR247-DHS-Final-Reports.cfm>

2. Thorsen, V., Sundby, J. & Malata, A. (2012). Piecing together the maternal death puzzle through narratives: The three delays model revisited. PLoS ONE 7(12), e52090. doi:10.1371/journal.pone.0052090.

3. Ibid.



reproductive, maternal, newborn, and child health (RMNCH) issues. The two complementary services extend health center reach by providing community members with regular access to accurate health information.

THE HOTLINE

CCPF's toll-free hotline provides clients with information and advice on issues across the RMNCH continuum of care, and refers callers displaying "danger signs" for further care at a village clinic, health center, or district hospital. Hotline workers are trained in maternal, newborn, and child health using modules from the Ministry of Health's (MOH) Health Surveillance Assistants (HSAs) curriculum. A simple touch-screen device guides hotline workers through point-of-care protocols and records data electronically for monitoring and evaluation purposes. Nurse consultants provide supervision and quality assurance oversight to the hotline workers.

TIPS AND REMINDERS

CCPF's tips and reminders service provides personalized messages on RMNCH topics, with an option for those who sign up to receive the message as an SMS or a voice message. The service targets women of childbearing age, pregnant women, and guardians of children less than one year of age in rural or underserved areas. Messages are personalized for clients based on their week of pregnancy or the child's age.

Clients who choose to subscribe to the service have access to these messages on a weekly basis. The tips and reminders service accommodates individuals who have varying degrees of access to mobile phones. A client can access tips and reminders on his or her personal mobile phone, on a friend or family member's personal mobile phone, or on a voice mailbox accessed by calling a toll-free number from any mobile phone.

DEMAND GENERATION:

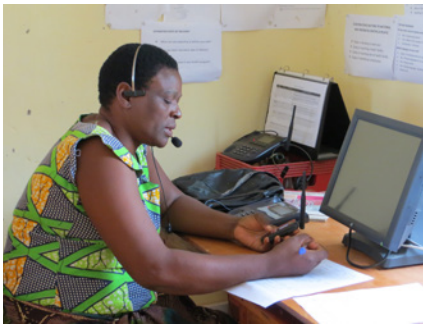
Community outreach and demand generation are critical to ensure service uptake. Community volunteers in each village promote the service and explain and demonstrate its use. In certain areas, volunteers provide access to the service by maintaining a phone for community use.

PROGRAM DESIGN & IMPLEMENTATION

VillageReach developed and implemented CCPF as a mobile health project of Concern Worldwide's *Innovations for Maternal, Newborn, and Child Health (Innovations)* initiative. *Innovations* is a global initiative led by Concern Worldwide US 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.

VillageReach piloted CCPF in Balaka District, Malawi with services starting in July 2011. The pilot period concluded in May 2013, and VillageReach is expanding CCPF's geographic reach with the support of Concern Worldwide Malawi and an Innovation Working Group Scale-Up award from the mHealth Alliance.

2. <http://globalhealthmedia.org/page/2/>



CONTENT DEVELOPMENT: CCPF HOTLINE

VillageReach worked with the Malawi MOH to develop instructional materials and content for the hotline service. Child health content was based on MOH protocols for integrated management of childhood illnesses (IMCI). Maternal health protocols were based on MOH's Maternal and Newborn Health Community Case Management training. We also asked District Health Staff to brainstorm questions they thought a community member might ask when calling the hotline.

In the beginning of the project, we created in-depth manuals covering a wide range of potential RMNCH topics. A few months into implementation we observed hotline workers were not using the manuals during their calls. To make the information in the manuals more user-friendly, we reduced the 25-page booklets into short, visual job-aides designed for hotline workers to easily refer to during their calls.

CONTENT DEVELOPMENT: CCPF TIPS AND REMINDERS

VillageReach used the same messaging provided by the Mobile Alliance for Maternal Action as a key reference when developing content for the CCPF tips and reminders service. We worked with district and central level MOH staff to adapt the content and ensure it was appropriate for rural Malawi. We consulted experts in Safe Motherhood, Immunization, IMCI, Prevention of Mother to Child Transmission of HIV, Traditional Birth Practices, Family Planning, and Kangaroo Mother Care, and partnered with the USAID Infant and Young Child Nutrition (IYCN) project in Malawi to bring in appropriate nutrition content.

Messages were developed in English and then translated into the two common local languages in Balaka: Chichewa and Chiyao. Messages were written in narrative form first, and then turned into shorter SMS messages and recorded as electronic voice files.

The final content was reviewed by a group of women from Balaka who were experienced working on MNCH issues at the community level. These women ensured that all local myths and traditions around pregnancy were adequately represented and addressed in the CCPF messages. Final messaging was submitted to and approved by district-level staff.

Tips and reminders content was reviewed periodically throughout implementation and updates were made to include additional content. For example, the launch of pneumococcal vaccine in Malawi led to the incorporation of new messaging developed in collaboration with MOH Expanded Program on Immunization staff.

PARTNERSHIPS

In addition to the Innovations team, VillageReach implemented the CCPF pilot in partnership with stakeholders from public, private, and non-governmental sectors.



MINISTRY OF HEALTH

Buy-in and participation from the MOH at idea generation and implementation planning stages was critical to developing, implementing and transitioning the pilot from demonstration project to scale-up. From the beginning, the implementation team developed relationships with national level MOH through Technical Working Groups and district-level MOH through the District Health Officer (DHO) and the District Health Management Team (DHMT), a committee representing district hospital heads of department.

There are two key ways that the district supports CCPF:

LEVERAGING HOSPITAL RESOURCES: The District Hospital provides space to operate the CCPF hotline. The hospital location adds to the service's credibility through association with the hospital, as community members see the hotline and tips and reminders as being an extension of the district hospital.

SHARING KNOWLEDGE AND EXPERTISE: District activities are conducted by coordinators who are regular district staff with additional duties to oversee activities, initiatives and programs across the district on specific topics. Coordinators in charge of MNCH activities review new hotline and tips and reminders content, participate in community outreach, and provide supervision and oversight to hotline staff. This ensures that content for hotline worker training and the tips and reminders service are consistent with district priorities and with national programming in relevant areas.

BAOBAB HEALTH TRUST

We partnered with a local organization, Baobab Health, on the design of the hotline software and hardware procurement and adaptation. Because Balaka is a rural area with limited technology infrastructure, Baobab Health designed the touch-screen devices to work in a low-resource environment. The devices were also designed to communicate with an electronic medical records (EMR) patient registration system that Baobab Health is developing for the MOH. This helped prevent the duplication of medical records or patient registration through the hotline.

VillageReach also received technical assistance and support from the Grameen Foundation's Mobile Technology for Community Health (MoTeCH) program in Ghana, which had implemented a similar program in Ghana a year prior to the *Innovations* pilot test in Malawi. The MoTECH team shared information on technical design, technology set-up, and content creation.

CHALLENGES

Because the concept of a hotline and tips and reminders service was very new to the community in Malawi, the implementation team had to address various challenges with the design, set up and implementation of the service. Some of these challenges were associated with the technology, but many were related to implementation issues.



TECHNICAL CAPACITY

When VillageReach started developing CCPF, we looked for existing technology solutions that could be adapted to meet our requirements. Unfortunately, a compatible platform was not available within our implementation timeframe. Our technology team met extensively with Grameen Foundation's MoTeCH, who had developed a similar application, to learn from their experience and replicate certain aspects of their application but at the time we could not find a platform that we could reuse instead of developing new functionality. Since our original technology design process early 2011, several new technologies have been developed to support mHealth applications, and we recommend that organizations entering this field look for existing solutions before building any new technologies.

BUILDING RELATIONSHIPS WITH MOBILE NETWORK OPERATORS

The technical components of CCPF require close collaboration with telecom providers. Although two major Mobile Network Operators offer services in Malawi (Airtel and Malawi-based TNM), negotiation was time consuming and complicated. VillageReach piloted CCPF with only one provider, Airtel. In many countries, aggregator services will act as a middleman, negotiating with multiple telecom companies so that services are available to customers of all mobile providers. Unfortunately, aggregator services are very limited in Malawi and proved cost-prohibitive for this project.

ADAPTING TO CLIENT NEEDS

Within the first six months of the CCPF pilot, the average age of pregnancy subscribers was 26 years old and the estimated month of pregnancy at the time of subscribing was between 5 and 5 ½ months. These numbers indicated two challenges: it was unlikely that our "average user" was in their first pregnancy, since first pregnancy in rural Malawi often happens before the age of 20; and we were not reaching women early in their pregnancy, and therefore not influencing early initiation of antenatal care (ANC), one of our key indicators. We recognized the need to adapt the service to address these challenges.

In order to encourage women to access information on ANC and healthy pregnancies earlier, the team developed new women of child-bearing age (WCBA) messages. Women could sign up for these messages to engage with CCPF before pregnancy or between pregnancies. The messages include information on family planning, birth spacing, early pregnancy symptoms and healthy eating for women of reproductive age. The hotline workers were also trained in family planning, and the WCBA services were officially launched through community events in September 2012.

ADAPTING TO THE CULTURAL CONTEXT

We found that emphasis on the concept of an estimated due date (EDD) created fear among some members of the community. It is unusual for women to reveal or talk about their due date, yet the EDD was necessary to register the women for the tips and reminders service to ensure that the messages were personalized based on the women's pregnancy status. Prior to project launch, specific EDDs were not commonly discussed in the healthcare setting, and one common misconception women expressed was that the



hotline was satanic because hotline workers could predict women's due dates. Our community outreach efforts had to address the concept of EDD and how it is calculated to help address this community perception.

MEETING CLIENT DEMAND

At the beginning of project implementation, we observed high rates of unanswered calls. To determine the cause of the problem, VillageReach staff compared incoming calls to the call system with activity in the hotline room. By monitoring the two processes in real time we learned that the hotline was understaffed at key times, but also that hotline workers were turning off phones which was causing some missed calls. Peak call times were identified and staffing plans were revised to meet client demand and reduce the rate of unanswered calls. VillageReach also hired a nurse supervisor, which greatly improved hotline worker responsiveness. Appropriate changes decreased the proportion of unanswered calls from about 30% to less than 10%.

QUALITY ASSURANCE

Each week three to five calls answered by each hotline worker are selected at random for review by the nurse supervisor and nurse consultants. Currently, project staff download the selected recordings and distribute the files to the nurse consultants for review. The process is time consuming and has a substantial human resources component. VillageReach is working to revise this process to maintain quality as we scale to additional districts.

DEMAND GENERATION

VillageReach has used several strategies to reach clients and build demand for CCPF's hotline and tips and reminders services. We trained Community Volunteers (CVs) to explain and demonstrate the service through one on one meetings and at mobilization events. Volunteers also maintained a community phone to provide access to the service. This strategy was successful throughout the first year of CCPF's implementation, however new registrations dropped over time. Some CVs became less motivated to be involved over time as the initial excitement of the project wore off, and the mobile phones we distributed began to break. We also heard some reports of volunteers overstepping their role by acting as gatekeepers to the service, instead of communicating to clients that CCPF could be accessed from any Airtel phone. VillageReach is testing additional demand generation strategies, such as registration at health centers, engagement of traditional leaders, and word-of-mouth marketing.

MONITORING AND EVALUATION

To understand what works and what could be improved, rigorous monitoring and evaluation are critical components of CCPF. Electronic data on process indicators is generated monthly and feedback from users is collected quarterly. Data is used for quality assurance as well as program evaluation and to guide design changes.

HOTLINE RECORDINGS

All calls into the CCPF hotline are recorded for quality assurance. A sample of recordings is reviewed every week by trained nurse supervisors. At bi-weekly meetings, the nurses discuss their reviews and provide feedback to hotline workers on their performance.

PROCESS INDICATORS

VillageReach automatically collects data from all of the software and technology used to administer CCPF, including the touchscreen devices used in the hotline room, the interactive voice response (IVR) technology that triages and handles phone calls, and the software used to deliver tips and reminders messages. For the hotline, this data includes the time the call started and ended, demographic information about the caller, topics and symptoms discussed, and the final outcome of the call. The IVR also saves the originating phone number and the clients' actions (connect to hotline or retrieve messages). We also collect information on the delivery status of tips and reminders messages.

COMMUNITY VOLUNTEER LOGS.

Community Volunteers record the number and type (message retrieval or hotline) of calls made from the community phone, the number of facilitated registrations, the number of people reached in one-on-one and small group interactions, and the number of community events attended where they discussed CCPF. We use this data to track demand generation activities for CCPF but the quality of data is very variable – some volunteers don't complete logs at all and some don't complete them accurately.

USER FOLLOW UP.

We follow up with a small number of registered clients, selected through convenience sampling, on a quarterly basis to assess the client experience with the service. Surveys have generally sought to evaluate client satisfaction and identify recommendations for improvements. Questions varied by quarter and were informed by observations from monitoring call and usage data. In the beginning, questions asked were about satisfaction with the service, frequency of use, new information learned, resulting behavior changes and suggestions for improvements. Later surveys focused on understanding why users do or do not continue to use CCPF services over time and whether or not clients act on information provided by CCPF.

OUTCOME EVALUATION.

An independent evaluation using mixed methods was conducted by Invest in Knowledge Initiative (IKI). The cross-sectional population-based survey covered about 2840 women and 3620 children at baseline, and 3850 women and 3310 children at endline. Qualitative data was also collected from users, non-users, health center staff, district officials, and implementing partners.

Preliminary data from the outcome evaluation indicate that use of CCPF increased home-based and facility-based practices among women, including use of a bed net during pregnancy, attending the recommended four ANC

appointments, starting ANC during first trimester, giving birth in a facility, and receiving a post-natal checkup within 2 days of birth. Home-based practices for children, including exclusive breastfeeding until six months of age, use of bed nets, and use of oral rehydration salts to treat diarrhea also increased. Those that used the service expressed satisfaction with CCPF and found their interactions with the hotline workers to be positive, which many users contrasted with the sometimes negative interactions they had with busy and overburdened health center staff. The full pilot evaluation report will be available in November 2013.

SCALE-UP & NEXT STEPS

The CCPF pilot allowed Concern, VillageReach and other partners to test the concepts and develop the system used in the project, including testing multiple versions of the hotline protocol and software. The monitoring and evaluation process coupled with rigorous final evaluation research generated data on the outcomes and process aspects of the project. This body of knowledge, expertise, experience and demonstrated impact made it possible for other organizations to take up the lessons of the CCPF and expand and adapt it to help support the health needs of more women and children in other districts.

Moving forward, VillageReach is studying several strategies to expand CCPF and develop a sustainable business plan, with a long-term goal of offering the service nationwide. In 2012, VillageReach received a catalytic grant from the WHO's Innovation Working Group and the mHealth Alliance, providing financial and technical assistance to move the project beyond its pilot phase and support scale-up efforts. The award has enabled us to work with three additional partners, **Concern Worldwide Malawi**, **Save the Children**, and a local Traditional Leader who is part of the **President's Office Safe Motherhood Initiative** to scale-up CCPF services in additional districts. VillageReach established partnership agreements with each entity to support certain resources associated with conducting community outreach and running the hotline and tips and reminders services. The scale-up in each district is structured differently depending on the partner and resources available.

In Nkhosokota, VillageReach is continuing its relationship with Concern Worldwide Malawi as technical advisor for the expansion of CCPF services into this new district. Concern Worldwide Malawi has incorporated CCPF into a broader project including family planning services and youth organizing, demonstrating the adaptability of the CCPF model and how it can be an element of a larger approach to strengthening health systems and overcoming barriers to access. Concern Worldwide Malawi is managing community outreach and demand generation in Nkhosokota, while VillageReach continues to operate the hotline and tips & reminders service.

In Mulanje District, Save the Children is handling all aspects of outreach and demand generation, with support from VillageReach in the form of promotional materials, training, and advice on best practices and lessons learned. A Traditional Leader, Chief Kwataine Masina, is leading the scale-up in Ntcheu District, building upon his existing network to inform local families about the service. Additional hotline workers have been employed to cope with extra calls to the Balaka call center from the new districts.



Mobile Alliance for Maternal Action

The MAMA Community Spotlight series shines a light on some of the great work being done by organizations using MAMA's adaptable mobile messages. Each month we feature a new organization that has downloaded our messages and is using mobile technology to improve maternal, newborn and child health.

Inspired by these innovative programs? Download the MAMA messages for yourself by visiting www.mobilemamaalliance.org and completing our short questionnaire.

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