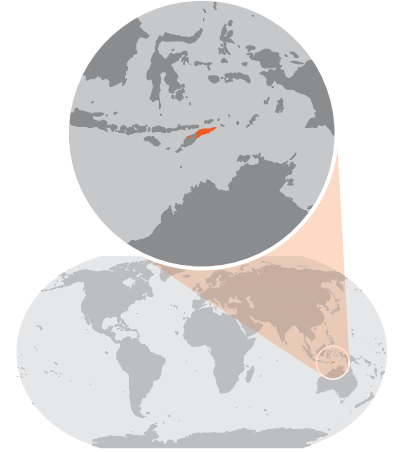


THE LIGA INAN PROJECT

TIMOR-LESTE



Putting health into the hands of mothers

The Liga Inan project, Timor-Leste's first mHealth project, is changing the way mothers and midwives stay in touch.

BACKGROUND

The Liga Inan ("Mobile Moms") Project is using mobile phones to connect expectant mothers with health care providers in Timor-Leste to improve the likelihood of a healthy pregnancy and birth. Funded by USAID's Child Survival and Health Grants Program, Liga Inan is implemented by Health Alliance International (HAI) with Catalpa International, in partnership with Timor-Leste's Ministry of Health (MOH). The goal of the Liga Inan project is to increase utilization of quality skilled care before, during and after delivery.

High maternal and newborn mortality rates continue to be a major problem in Timor-Leste, and community understanding of optimal health behaviors during pregnancy, such as nutritional advice, danger signs of pregnancy, and care-seeking behaviors, is limited. Contact with midwives is limited to a few antenatal care (ANC) visits, which do not allow for the repetition and reinforcement of health messages that are most likely to produce behavior change that would improve health outcomes. Although there has been progress in increasing the rates of skilled birth attendance since Timor-Leste became a new nation in 2002, the utilization of maternal health services remains low with the majority of women giving birth at home assisted by only a family member or friend.

Many women in Timor-Leste live in remote and rural areas which make it challenging for them to access health facilities and midwives. As a result, pregnant women often find it difficult to get good advice and support to improve their chances of having a safe pregnancy and healthy baby. Recognizing the limited possibilities for communication between midwives and pregnant women, HAI designed and developed the Liga Inan mobile phone



(photos by Catalpa)

project, with its technical partner Catalpa International, a mobile and software development company focused on technical solutions in low resource settings. The system sends maternal health-related text messages twice weekly to pregnant women who enroll in the project at the time of their first antenatal visit. The system also facilitates phone contact between pregnant or postpartum women and their midwives, including regular phone contact around the time of delivery.

USE OF MAMA MESSAGES

HAI began the process of developing the text messages with a review of the messages specific to the gestational stage of pregnancy that are available from the Mobile Alliance of Maternal Action (MAMA). Initially it was anticipated that Liga Inan would only send one text message per week to enrolled women, so a limited number of the 115 prenatal and 157 postpartum MAMA messages were selected. Initial messages were those that aligned best with existing messages of the Timor-Leste MOH, as well as those that seemed particularly relevant to the rural population where the project is being implemented. The original messages were then translated into Tetum, the local language, and edited to assure that they could be clearly presented within the maximum SMS (text message) length of 160 characters.

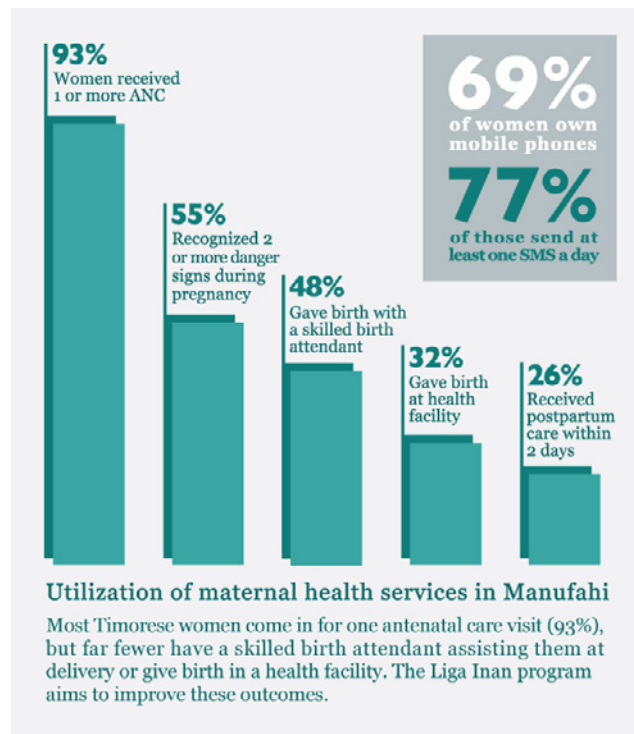
The messages were then reviewed in stakeholder meetings with the MOH at both the national and district levels, which provided an opportunity for feedback and policy alignment. Based on that feedback, on existing literature indicating that more frequent messages were more likely to be effective, and on HAI's receipt of a private supplement to the USAID grant, we decided to increase the messages to twice weekly. Further pretesting was done with pregnant women in the project area to determine the extent to which a sample of messages could be read, were understood, and were considered acceptable. Feedback from that process revealed that much of the content of the messages was new information for the pregnant women, further reinforcing the decision to double the number of messages to be sent.

Ultimately the emphasis of most of the messages consisted of cues to action: having four ANC visits, using a skilled birth attendant, nutrition messages, birth planning, and knowledge about danger signs of pregnancy, delivery and the newborn period. It was also decided to provide messages regarding traditional practices around birth that are prevalent in Timor-Leste and may have harmful consequences. For example, many women in Timor-Leste practice a postpartum tradition of *tuur ahi* (literally, "sitting fire") where the new mother and newborn are sequestered in the home for several weeks next to an open fire because the heat is believed to have beneficial healing effects. To address that common practice we included a message about the harm that can be caused to newborns from smoke from these open fires, with advice to keep mothers and newborns a distance from the smoke.

While most of the messages are tailored to a women's gestational stage based on her estimated due date, many subjects are repeated for emphasis and priority messages have been identified to assure that despite the gestational stage of a woman's enrollment, she won't miss important key information: women who enroll late in the pregnancy will receive these messages in addition to the set she is timed to receive.



Midwives role playing to practice how to enroll women in the Mobile Moms project. (photos by Catalpa)



PROGRAM SPECIFICS

At the start of the Liga Inan project HAI conducted a knowledge, practice and coverage household survey to collect data on utilization of health services and mobile phone ownership and usage in our implementation district. We found that household ownership of mobile phones was high; there was familiarity of text messaging among women who report access to cell phones and 73% of women reported being able to read the local Tetum language. This survey will be repeated two years after implementation.

Midwives use smart phones provided by the project to enroll women into the Liga Inan project during a first antenatal care (ANC) visit. With 93% of women in the implementation district accessing at least one ANC visit it serves as a very good portal to the project. However, while rates of first ANC are quite high, access to other health services and information drops off considerably.

TRAINING HEALTH STAFF

The Liga Inan project was designed to include active involvement of district and subdistrict midwives. It required a high level of early stakeholder engagement to assure strong MOH buy-in for an innovation that was new to the health sector in Timor-Leste. Midwives enroll pregnant women through a simple registration process using a smart phone, after which automated text messages are sent to enrollees twice weekly. Midwives receive reminders of women who are near their due date and are responsible for checking in through a phone call to check their health status, discuss birth planning or confirm whether the woman has delivered. Midwives are also responsible for answering questions from pregnant or postpartum women received through



Executive Director of Catalpa International demonstrates how to register women into the Liga Inan project to a district midwife (photo by Catalpa)



Socialization meetings were held in communities where the Liga Inan project is being implemented.

their mobile phone (a program feature offered through the Liga Inan service), which involves screening for complications during the pregnancy, delivery, postpartum and newborn periods. They also need to determine if an emergency situation exists for the pregnant/postpartum woman or her infant, and if one exists, make an appropriate response.

Training for midwives on key aspects of their role in the project was conducted by HAI and Catalpa staff. Catalpa staff facilitated sessions to help midwives become comfortable using new the smart phones, including how to use the phone to register patients and for other key functions of the mobile service. HAI staff trained midwives in better estimation of birth date, how to respond to questions over the phone, and general communication with pregnant women with the goal of helping them to strengthen communication and engagement with their patients and promote healthier mothers and babies.

COMMUNITY SOCIALIZATION AND PHASED ROLLOUT

The implementation district has four subdistricts that vary in size, population density and remoteness. In order to coordinate a thorough and effective community socialization plan to market Liga Inan while also closely monitoring the implementation process, HAI decided on a phased rollout starting in the largest and most densely populated subdistrict of Same. The phased rollout has allowed HAI and Catalpa to address implementation issues and make necessary adjustments in a timely fashion. Early challenges with enrollment, such as using a woman's full name when registering or not including enough digits in a woman's phone number, could be caught and corrected early. The later issue led Catalpa to change registration process to require corrections of the registration if the old 7-digit phone number was entered. Catalpa also was able to adapt the service to align with the free "call me" service provided by the local telecommunications provider, making this service entirely free for mothers wanting to call their midwives.

Socialization activities were carried out in communities throughout Same and included stakeholder meetings with broad community participation - village chiefs, health facility managers and other health staff, community health workers, teachers, community women with special effort extended for pregnant women to attend. HAI and MOH staff conducted a general health education session about maternal and newborn care, introduced the Liga Inan project and provided information on how women could enroll. The socialization efforts have been key in gaining widespread community support and participation in the Liga Inan project .

HAI worked with Catalpa International design staff to develop a project logo, so that the project could be easily identified through promotional materials. The logo and tag line "Your Health is in your hands" (already a recognizable phrase used by the MOH) was used for t-shirts, brochures, banner and posters that were widely distributed during the socialization campaign.

EARLY RESULTS

Enrollment of women into Liga Inan was launched the last week of February 2013 in the subdistrict of Same. Rollout to three other subdistricts is



T-shirts and caps with the Mobile Moms logo and tagline, "Your Health is in your hands" were distributed to project staff, health staff and community health workers to promote the Liga Inan project.

planned soon. There has been a very enthusiastic response to the project by both health staff and the communities they serve. After ten weeks, 278 women have enrolled in Liga Inan and 70 births have been recorded among enrollees. Although it is too early to look at project impact, early numbers are encouraging. In Same subdistrict, the average number of births attended by a skilled attendant per month in 2012 was 38, and the average number of births at a health facility was 27. In the first full month of Liga Inan implementation there were 56 births attended by skilled provider and 38 deliveries at the health facility. This is early in the project, however, and HAI staff will be working hard over the next year to assure data quality and effective monitoring of the project.

TELECOMMUNICATIONS PROVIDER ENGAGEMENT

Currently USAID pays for the cost of text messages sent to expectant and postpartum women. At the start of the project in October 2011, only one telecommunications company was operating in Timor-Leste; however this monopoly was broken in 2012 when two new mobile companies were granted licenses to operate. With new competition in the market it is expected that the cost of text messaging will decrease. In addition, following the launch of the Liga Inan project, executives from one telecommunications company requested a meeting with HAI and Catalpa staff to discuss possible support for the Liga Inan project.

MONITORING AND EVALUATION

HAI has in place an Operations Research (OR) plan to assess the impact of the Liga Inan project. Utilization data on key indicators, including skilled birth attendance and facility deliveries, will be assessed via a pre- and post-implementation survey in the implementation district and a neighboring district that will be used as a comparison where Liga Inan is not implemented. In addition, health information data collected routinely by the health system will be monitored in both districts. Phone surveys to assess enrollees' early experiences and an assessment looking at the impact on workload for midwives are also planned.

Catalpa International developed for HAI a public facing website for the Liga Inan project which can be accessed at www.ligainan.org. A password-protected private dashboard on the website collects real time project data, providing staff with an excellent tool to monitor progress. Some of the data monitored via the dashboard are the number of enrolled women, tracking of all messages delivered, number of deliveries, anticipated births in the coming week and the number of enrollees in each village in the subdistrict. The online monitoring system also allows the team to monitor the real-time interactions between midwives and women: text messages sent to enrollments women, the requests from women to please call them, and what type of messages midwives are sending to their cohort.

CHALLENGES

There will continue to be important lessons learned as Liga Inan is implemented over the next two years. HAI has benefitted from the wise counsel of our donor, USAID, and open and honest dialogue with other organizations



that have implemented similar mHealth projects. Donor flexibility to modify the original Liga Inan proposal has allowed us to make adjustments quickly as challenges arise. Rolling out in only one subdistrict has also facilitated focused trouble shooting before taking the system to a broader population.

One challenge that became apparent quickly is a shortage of fuel available to district health teams and poor maintenance of health vehicles for transporting laboring women to a health facility. Enrolled women and their families are taking advantage of the communication bridge provided by Liga Inan and contacting their midwife when labor begins. However, health staff are sometimes hampered in dispatching the ambulance due to lack of fuel. The Liga Inan project has helped to shine light on this problem in the implementation district; however, other districts are known to experience the same issue. Armed with data to identify this problem, HAI has been engaged in opening up dialogue with both the MOH and the donor community in Timor-Leste to engage in thinking through possible solutions to chronic fuel shortages that impair the referral and emergency response systems.



FUTURE PLANS

Liga Inan is in its very early days of implementation, but there is already interest within the MOH in scaling up. However, sound evaluations are critical before mHealth projects are to move from the pilot phase to scale up. While very early numbers are promising, they do not yet provide evidence of success. HAI feels strongly that a robust evaluation to assess impact is very important and have plans in place to carry out this evaluation. Our next steps are to carry out the planned rollout to the three remaining subdistricts in order to have complete coverage in our implementation district.



We will be tracking routinely collected health data at the subdistrict level to monitor short term progress toward goals. This data will be analyzed monthly and compared to pre-implementation data. In addition, following rollout in each subdistrict a phone survey of a random sample of enrollees will assess if messages are received and understood, and explore enrollee satisfaction with the project. In late 2013 HAI will assess the impact on the health system in terms of perceived changes in the workload of midwives following the introduction of the Liga Inan project. And finally, two years post-implementation (2015) HAI will conduct a household survey of key project indicators and compare with a baseline survey to measure impact. Further qualitative studies are also being considered.



HAI and Catalpa will continue to engage with the mHealth community to learn from the work of others and share lessons learned and results as they become available.



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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