

Introduction of the Combined Prevention of Postpartum Hemorrhage and Newborn Infection in Madagascar:

The process, results and recommendations

Madagascar Community-Based Integrated Health Program (CBIHP), locally known as MAHEFA, was a five-year (2011-2016), USAID-funded community health program that took place across six remote regions in north and north-west Madagascar (Menabe, SAVA, DIANA, Sofia, Melaky, and Boeny). The program was implemented by JSI Research & Training Institute, Inc. (JSI), with sub-recipients Transaid and The Manoff Group, and was carried out in close collaboration with the Ministry of Public Health, the Ministry of Water, Sanitation and Hygiene, and the Ministry of Youth and Sport. Over the course of the program, a total of 6,052 community health volunteers (CHVs) were trained, equipped, and supervised to provide basic health services in the areas of maternal, newborn, and child health; family planning and reproductive health, including sexually transmitted infections; water, sanitation, and hygiene; nutrition; and malaria treatment and prevention at the community level. The CHVs were selected by their own communities, supervised by heads of basic health centers, and provided services based on their scope of work as outlined in the National Community Health Policy. Their work and the work of other community actors involved with the MAHEFA program was entirely on a voluntary basis.

This brief is included in a series of fifteen MAHEFA technical briefs that share and highlight selected strategic approaches, innovations, results, and lessons learned from the program. Technical brief topics include *Behavior Change Empowerment, Community Radio Listening Groups, Community Score Card Approach, Chlorhexidine 7.1%/Misoprostol, Champion Communes Approach, Community Health Volunteer Mobility, Emergency Transport Systems, Malaria, Community Health Volunteer Motivation, Family Planning & Youth, WASH, eBox, Community Health Financing Scheme, Information Systems for Community Health and NGO Capacity Building.*

Background

One in 52 women die from complications of pregnancy and childbirth in developing countries, in particular in sub-Saharan Africa. Most of these deaths are preventable. Newborn mortality makes up 45 percent of annual deaths among children under five years old. Those living in developing countries experience under five mortality at higher rates; 75 percent of these are among newborns at home and in the first week of life and 25 percent to 45 percent of these take place within the first 24 hours. Two-thirds of the main causes of neonatal deaths are preventable and 15 percent can be attributed to infection. The stump of a freshly cut umbilical cord is an entry point for approximately half of neonatal infections. Chlorhexidine digluconate, 7.1% w/w releasing chlorhexidine at a concentration of 4 percent (CHX) in the form of gel or liquid in single or multiple applications for the care of the umbilical cord at birth can reduce newborn mortality up to 38 percent, and serious infections up to 56 percent. In addition, nine out of 10 women die from complications of pregnancy and childbirth in developing countries, especially in sub-Saharan Africa; yet, most of those deaths are preventable.

Madagascar Context

After 15 years of decline, the level of neonatal mortality increased to 26 per thousand live births (NV) [95 percent CI: 23 - 29] in 2012/13 in Madagascar. The increase is attributed to changes in breastfeeding and vaccination practices for newborns and the socio-political crisis that decreased health service access. The main causes of newborn death are prematurity (35 percent), asphyxia (29 percent) and infections (17 percent), during the first two days of life, which are the most critical for their survival. Equally, maternal mortality is still among Madagascar's leading public health problems (maternal mortality rate is 478 per 100,000 live births (LB)). Maternal deaths are most often caused by ante or postpartum hemorrhages (20 percent), and complications due to abortion (16 percent). Half of women (51 percent) do not finish their WHO-recommended four antenatal consultations during pregnancy. They give birth at home (64 percent), especially in rural areas (67 percent) and three in five women (56 percent) have no skilled attendance at childbirth⁸. Madagascar has established a roadmap to accelerate progress to reduce maternal and neonatal mortality 2015-2019. The roadmap provides guidance to reduce maternal and neonatal mortality, respectively to 300 per 100,000 LB and 17 per 1,000 LB by the year 2019.

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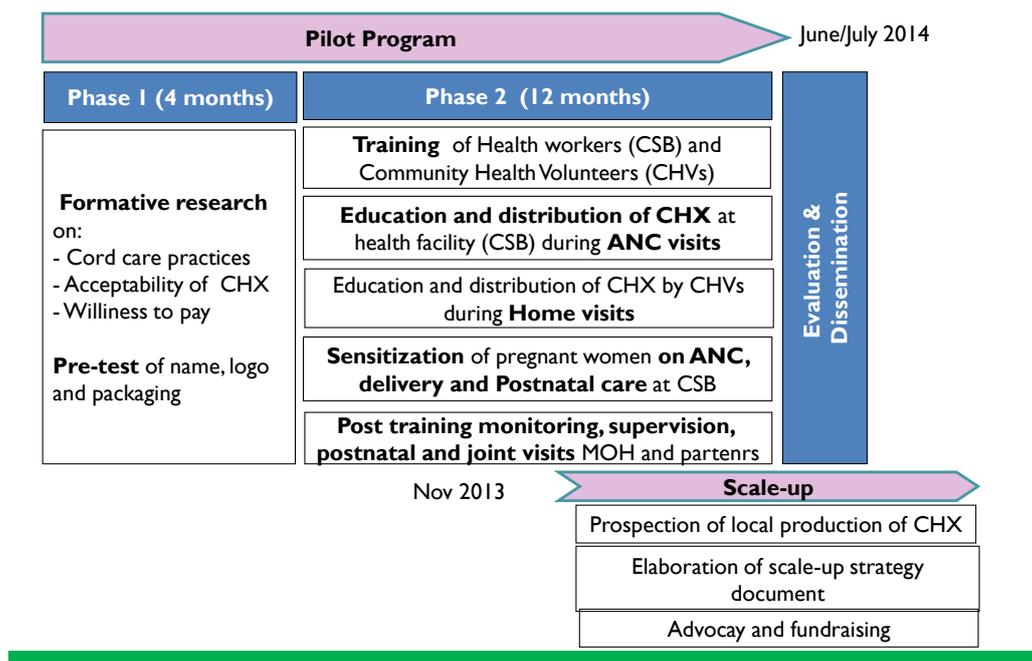




The MAHEFA Approach

The introduction of the CHX for the care of the newborn’s umbilical cord and misoprostol to prevent postpartum hemorrhage (PPH) was a MAHEFA innovation, combined and driven in two districts, Mahabo (2013), Menabe region (11 communes) and Vohémar (2014), SAVA region (19 communes)⁹. A feasibility and acceptability study on the CHX (phase 1 of the operational research) and exchange visits (Nepal 2012, Burkina Faso 2013, Mozambique 2014) were prerequisites for implementation¹⁰. The implementation of the introductory program took place in health facilities and at community level through CHV services that were provided in health huts and in households (phase two of the operational research). Following phase two, scale-up took place gradually.

Figure 1. Methodology



Key Activities

The model developed by the program was launched in two MAHEFA districts. Activities were carried out according to a pre-established research protocol of which guidelines included:

- 1. Advocacy at the local level:** To introduce the intervention, information sessions and advocacy took place with local authorities, community leaders and mothers on the prevention of newborn infection and use of CHX.
- 2. Develop, pilot, and validate training and Information, Education and Communication (IEC) and Behavior Change Empowerment (BCE) tools:** A training curriculum was developed, piloted and validated with the relevant authorities of the Ministry of Public Health. Once finalized, it was integrated into the National Maternal and Neonatal Health Module. The IEC/BCC materials and tools were adapted from the materials used in Nepal to introduce CHX.
- 3. Train CHVs on the package of messages and use of products:** Training and post-training follow-up were conducted in a cascade approach for health workers who then trained the community health volunteers (CHVs) for prevention of newborn infection services using CHX. In Vohémar, both products were immediately placed in the same training and services for CHVs.
- 4. Acquire and distribute products:** The misoprostol startup batch was imported by JHPIEGO/MCHIP in Vohémar district,

10. PSI, JHPIEGO/MCHIP. 2013. Investigating current practices and perceptions about the care of the umbilical cord and the acceptability of chlorhexidine 7% target in Antananarivo, Tsiranomandidy, Mahabo 8-9, 25. Madagascar
11. Hodgins S., Thapa K., and al. 2010. Chlorhexidine gel versus aqueous for preventive use on umbilical stump: a randomized non-inferiority trial. *Pediatric Infectious Disease Journal* 29(11):999-1003. doi: 10.1097/INF.0b013e3181e70c59



while JSI imported the CHX gel and misoclear, with special authorization from MOH. The distribution targeted about 9,600 pregnant women over 34 weeks pregnant (6,328 in Mahabo district), which is approximately 80 percent expected coverage of infants and women who deliver at home.

5. Supervise CHV activities: CHVs received skills check-ins and additional instructions from clinicians during attendance at monthly meetings at the *Centres de Santé de Base* (CSB). Box 1 summarizes CHV activities of CHVs after training. At the CSB, pregnant women received the same information and obtained CHX during their antenatal care visit.

6. Conduct post-natal visits to monitor usage: The CHVs made home visits in the first week following delivery and checked the immediate and single application of CHX gel on the stump of the umbilical cord as soon as it was cut¹¹, and women's uptake of misoprostol after childbirth. They also reinforced messages on exclusive breastfeeding, immunization, essential newborn care and danger signs, and recovered the used or intact misoprostol packaging and CHX tube.

7. Conduct reviews of progress (2014) and evaluation (2015) of the introductory program: A quantitative evaluation on effectiveness of distribution mechanisms and the impact of use of CHX and misoprostol for newborns and mothers. The information collected highlighted best practices, lessons learned, and the level of perceived skills of community providers and clinicians at the CSB. The review led to recommendations for scale-up.

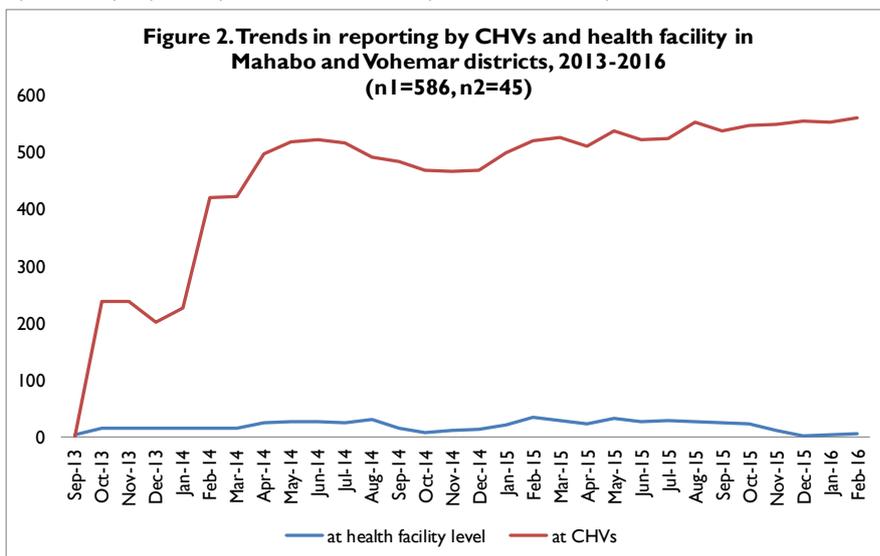
8. Planning for scale-up (2013): The Technical Working Group or TWG, with technical support from JHPIEGO/MCHIP and PATH, conducted an exploratory study on local production of CHX and established a scale-up plan of its use as a standard of care for the umbilical cord for Madagascar. In January 2016, the framework document of scaling prevention of postpartum hemorrhage was completed.

Results

All CHVs from Vohémar district (306 of 306 CHVs) and nearly all from Mahabo district (278 of 280 CHVs) have continued to provide CHX and misoprostol services through February 2016. Since its inception, 15,844 tubes of chlorhexidine gel 7.1% and 22,783 misoprostol doses¹² were distributed by CSBs (only CHX) and CHVs, namely 71.4 percent by the latter. Of the women surveyed, 69 percent received CHX tube (n1 = 840) and 63 percent of them misoprostol (n2 = 420) in their last pregnancy. Among them, 95 percent of newborns had CHX on the umbilical cord on the day of their birth, and of these 92 percent immediately after cutting of the umbilical cord. In addition, 95 percent of women who received misoprostol had taken it after childbirth.

Almost all of the pregnant women (95 percent) visited at home by CHVs were informed on the use of misoprostol in Vohémar district, 84 percent on the use of CHX, 44 percent on the promotion of antenatal care visits, 43 percent on the promotion of exclusive breastfeeding, and 26 percent on development of a birthing planning.

Ninety-three percent of women users are willing to recommend CHX and 96 percent misoprostol. In terms of source of CHX and misoprostol, 72 percent to 77 percent would receive their supply from a CHV, 39 percent from a health worker and 8 percent from a traditional birth attendant. In the CSBs, the distribution of chlorhexidine has helped to increase the WHO recommended four PNC visits (from 31 percent to 69 percent for Mahabo district and from 42 percent to 69 percent for Vohémar



¹² One dose of misoprostol = 3 pills of 200 micrograms and the CHVs are the only ones selling them



district) and skilled delivery rate (from 41 percent to 57 percent for Mahabo district and from 51 percent to 72 percent for Vohémar district) between 2012 and 2014 .

Challenges

CHVs could not systematically visit all women after childbirth, as the villages are scattered throughout the *fokontany* (collection of villages). This resulted in lower numbers of women who received post-natal education on exclusive breastfeeding and other important health messages.

The stock of CHX within the CSB was insufficient due to political restrictions. Not all babies who were born in health facilities were able to benefit from CHX if there was insufficient supply in that particular CSB.

CHVs had difficulties integrating the vertically managed CHX/misoprostol activities into their core package of services given competing demands on their volunteer positions. It is thought that the activities were considered an additional burden in some cases, leading to a drop in motivation and reporting rates for stock management and use of products within the community.

As new products in Madagascar, CHX and misoprostol were distributed via a parallel system to the national system of distribution. This side distribution of products created a disruption in availability, and the CSB and CHV often did not report stock outs.

Lessons Learned and Recommendations

Accelerating scale up is largely related to the effective functioning and the capacity for advocacy and mobilization of resources by the Technical Working Group (TWG).

Mothers readily accepted the use of CHX to replace alcohol and bandage, and misoprostol, with the intention of re-use for future pregnancies.

It was observed that application of CHX resulted in rapid drying and late falling of the stump (up to 12 days).

It is important to scale up the combined approach to be cost effective as the combined activity can reach more mother and baby pairs, especially in communities where home birth prevails.

Encourage collaboration between CHVs and the traditional births attendants for early active searching and identification of pregnant women to facilitate their monitoring and distribution of CHX and misoprostol to them.

Adopt 7.1% CHX as national standard for umbilical cord in essential newborn care and integrate the training module into the CHV curriculum on child or neonatal and maternal health.

FOR MORE INFORMATION, PLEASE CONTACT:

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