Better Health for Afghan Mothers and Children

Using mobile phones to improve maternal, newborn and child health in Afghanistan

SERVICE DELIVERY

Implementation date: 2010 to 2012

World Vision and its partners designed a mobile health innovation and implemented a research study in Herat Province, Afghanistan, nested within the broader Better Health for Afghan Mothers and Children (BHAMC) project, which aimed to improve maternal, neonatal, and child survival. BHAMC reached 36,200 children under five years old and 45,250 women of reproductive age in 74 villages across four districts of Herat Province. An important component of the strategy was utilizing community health workers (CHWs) and community leaders to strengthen linkages of households and communities to health facilities and skilled providers; to improve health behavior; and to provide basic lifesaving care within the home and community using Home Based Life Saving Skills (HBLSS).

The pilot study focused on CHWs using the HBLSS modules on a mobile phone instead of standard paper materials to facilitate counseling and referrals as part of the comprehensive maternal and newborn care approach. The intervention was introduced into ten remote villages (five intervention villages and five comparison villages), in Karukh District. A total of 10 CHWs working in male-female teams to make home visits culturally acceptable (one pair per intervention village) received phones loaded with airtime and an application to facilitate counselling and referrals.

About Better Health for Afghan Mothers and Children

World Vision worked with the software consultancy firm Dimagi to adapt its software application CommCare™ and develop two counseling modules for CHWs based on HBLSS—one for antenatal care and one for postnatal care. The modules were created in Dari, the local language, in visual and audio formats. The project also set up a database at the BHAMC office and at World Vision headquarters to access the data in real time.

During home visits, CHWs used the application to facilitate discussions about maternal and newborn health issues. After consultations with the women, CHWs uploaded information about the pregnancy to the phones for recordkeeping, reporting and follow up. When a woman went into labor, the CHWs made a referral call to link the woman's family with a skilled provider in the nearest facility.

HEALTH-RELATED OUTCOMES AT ENDLINE, BY STUDY GROUP (%)

Outcome	Intervention (n=103)	Comparison (n=103)
Any ANC visit*	**73**	**53**
2 or more ANC visits	50	45
4 or more ANC visits	18	17
Received iron supplements	64	50
Developed a birth plan*	**76**	**63**
Saved money	50	44
Arranged transport	27	22
Coordinated with health facility*	**17**	**5**
Delivered in facility (assisted by doctor, nurse, or midwife)	58	47
Knows 2 or more pregnancy danger signs*	**71**	**58**
Knows 2 or more newborn danger signs	95	95
Had a postnatal visit	39	39
Initiated breastfeeding within 1 hour of birth	81	72
Any CHW visit	54	51
2 or more CHW visits	43	49

* Differences between intervention and comparison groups were statistically significant at $P < .05$.

Evaluation and Results

The study, cleared by Institutional Review Board, used a pretest/posttest design with baseline (2010) and endline (2012) household surveys, in the ten designated sites. All intervention and comparison areas were part of the comprehensive maternal and newborn care approach. Both surveys had a total sample size of 206 mothers of children aged 0 to 23 months (103 each from intervention and comparison sites). In addition, focus group discussions were conducted in February 2013 with seven CHWs and eight Shura (village health committee) members from the intervention area. Data were analyzed to observe changes that could be associated with using CommCare™ with HBLSS. Heightened security challenges resulted in study limitations including implementation delays, small sample sizes, and a limited follow-up period.

Key findings included the following:

- Using mobile phones with the HBLSS application by CHWs, improved women's health knowledge and use of health services.
- As a job aid, mobile technology spurred interest among women to learn from CHWs, facilitated counseling, and enhanced CHWs' credibility among clients
- As a communication tool, use of mobile phones helped coordinate referrals to health facilities and delivery of medical supplies.

After 20 months of implementation, more mothers in the intervention group developed a birth plan than mothers in the comparison group (76 percent vs. 63 percent); to have had at least one antenatal care (ANC) visit (73 percent vs. 53 percent); and to know at least two danger signs during pregnancy (71percent vs. 58 percent) (see table). In addition, more mothers in the intervention group had a CHW coordinate referral to a facility than mothers in the comparison group (17 percent vs. 5 percent). A larger proportion of mothers in the intervention group delivered in a facility than mothers in the comparison group (58 percent vs. 47 percent), but the sample size was too small to detect statistical significance.

Lessons Learned

- Expanding the project to a larger number of CHWs will require careful documentation of the design and process of training and supervision of CHWs, including costs
- Harmonizing CommCare™ data with the district-level health information system is another consideration for further expansion of the model
- Similar studies with larger sample sizes and that include cost analysis should be conducted to build more evidence on the value of using mobile technology in community health promotion strategies, especially in post-conflict settings
- CHWs in Afghanistan operate primarily in closely-knit pairs of one male and one female (typically a husband and wife pair, but also as a brother and sister, or man and aunt pair); men tend to be more literate and more experienced with cell phones, while women, typically not formally employed, have more time to devote to CHW tasks and provide the majority of pregnancy and newborn-related care

Conclusion

Using mobile health technology to enhance communication within a family-focused, maternal and newborn health care approach is a promising strategy for addressing geographical and cultural barriers that impede access to basic health care services in post-conflict settings. Findings from this pilot study demonstrate that equipping CHWs with a low-cost (two USD per month), locally customized mobile application for counseling and referrals is feasible, affordable and highly acceptable among rural Afghan women and that it improves their health knowledge and behavior.

Geographic Coverage: Herat Province, Afghanistan

Implementation Partners: World Vision, Inc.; Bhakthar Development Network; Afghanistan Ministry of Public Health

Funder: USAID

Contact Information:

World Vision | Dennis Cherian, Senior Director of Health (202.572.6380, dcherian@worldvision.org)

USAID | Meredith Crews, MPH, Child Survival and Health Grants Program (mcrews@usaid.gov)

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