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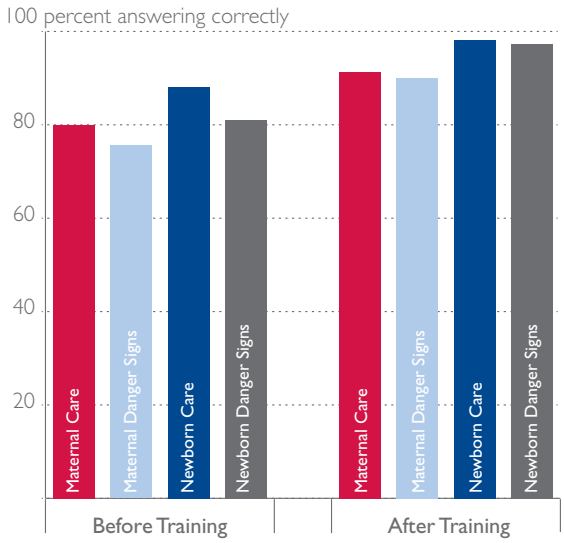

Figure 1. Intervention Group Pre- and Post-Training Assessment Correct Responses

ASHA-LINKS

IMPLEMENTATION DATE: May 2014 to September 2014

Using mobile phones to address postpartum needs of mothers and newborns

The health and development indicators of mothers and children in Uttar Pradesh, India, continue to be among the worst in the world with significantly higher rates among rural populations. The women in the rural Moradabad District face overwhelming barriers to essential maternal and newborn health care, including limited mobility due to social restrictions, limited availability of trained health providers in primary health centers (PHCs), poorly equipped and supplied PHCs, and lack of timely referral and skilled care at the community level. Because approximately 45 percent of postpartum maternal deaths and 25 to 45 percent of newborn deaths occur within 24 hours of birth, the World Health Organization recommends that all mothers and newborns receive a postpartum visit within this critical time frame.

Initiated in 2011 as part of a broader government-run health scheme targeting rural populations throughout India, accredited social health activists are being training home-based newborn care (HBNC) with the expectation that they will conduct six postpartum home visits but not within the first 24 hours for facility-based deliveries. Most ASHAs in Moradabad have yet to receive this training, and ASHA performance is compromised by lack of skills and motivation, minimal incentives, and few opportunities for career progression. ASHA-LINKS to Postpartum Maternal and Newborn Health was designed by Project Concern International (PCI) in response to the critical need to address maternal and newborn morbidity and mortality in the rural areas of Moradabad in northern India, and because well-trained ASHAs play an invaluable role in assuring that rural mothers and their families are educated on healthy postpartum practices and supported through the identification of danger signs and the swift referral of life-threatening complications.

About ASHA-LINKS

The objective of the ASHA pilot study was to develop and potentially scale up a project utilizing mobile technology as a means to improve maternal and newborn postpartum outcomes. PCI aimed to test the hypothesis that

the introduction of the mobile postpartum health assessment increased the frequency, timeliness, and quality of 24-hour postpartum assessments; the capacity of ASHAs to provide 24-hour postpartum assessments; and the ability to make referrals of serious complications to appropriate health facilities. The mobile application included a decision tree to guide ASHAs through assessments and a combination of text prompts, audio recordings, and images to assist in identifying, managing, and referring complications. PCI also tested the uptake of an improved referral network to link ASHAs with auxiliary nurse midwives and health facilities to improve the continuum of care that mothers or newborns with complications receive. Ten intervention and 10 control group ASHAs underwent a two-day training on home-based life-saving skills for mothers and newborns; the intervention group received additional training on use of the mobile application.

Evaluation and Results

ASHA knowledge, skills-based capacity, and overall performance were evaluated both qualitatively and quantitatively during pre- and post-training assessments, from data retrieved from the mobile phones during postpartum assessments, during home visit observations using a checklist, and through feedback from both ASHAs and the new mothers they visited. Researchers determined enablers and barriers for ASHAs in using the mHealth application to determine the potential for scale-up. The assessments found the following:

- Families were more receptive to ASHAs using the mHealth application, and ASHAs felt more respected by families and other health workers, likely because mobile phones carry symbolic authority. Quality of visits improved.
- The intervention group had more structured and complete assessments but the application had little impact on timeliness of assessments within and between the two groups. This finding is likely the result of deeply ingrained structural and behavioral challenges within the health care system.
- The intervention group covered twice as much information during visits than the control group, but ASHAs tended to rely on the phone at the expense of interpersonal communication.
- Phone data entry was more reliable than paper recording, but troubleshooting caused some delays in data analysis. This miscommunication became a barrier to case follow-up.
- The referral network from ASHA to facility within both groups was a challenge due to poor communication, lack of authority, absence of a formal referral system, and mistrust in public health care facilities. The intervention group recorded more referrals, but the accuracy of both groups' referrals could not be verified due to lack of records.

Table 1. Percentage of ASHAs answering questions correctly pre- and post-training for intervention and control groups

Assessment Questions	Intervention		Control	
	Pre-	Post-	Pre-	Post-
Newborn Care				
Assessing breathing problems	80.0%	100%	66.7%	88.9%
Proper cleaning of cord	100%	100%	55.6%	100%
Head positioning during KMC	90.0%	100%	55.6%	100%
Breastfeeding positioning	90.0%	100%	66.7%	77.8%
Newborn Danger Signs				
Fever	80.0%	100%	33.3%	77.8%
Chills	70.0%	80.0%	33.3%	55.6%
Eye infection	30.0%	80.0%	11.1%	44.5%
Jaundice	70.0%	100%	11.1%	66.7%

Lessons Learned

- Continuous, on-the-ground technical support should be provided to ASHAs in case the mHealth app encounters technical errors. This will ensure the data are forwarded to the server correctly.
- Some images used to help ASHAs recognize danger signs needed clarification as ASHAs had trouble understanding them.
- ASHAs felt that they should receive additional compensation from the government for the increased workload accrued through performing postpartum assessments.
- ASHAs lack training in record-keeping and counseling, limiting the reliability of data, expecially in the control group.

Conclusion

A decision-support phone application can be an effective job aid if training is adequate. It does not take the place of the ASHA's assessment and decision-making capabilities but rather contributes to assessment completeness and quality. Well-functioning referral and health care systems need to be in place to support the ASHAs and to provide proper assessment, referrals, and responsive treatment. Scale-up would require extended training for the ASHAs on home-based life-saving skills and mHealth technical skills, on-the-ground technical assistance for mHealth app troubleshooting, clearly defined and monitored government standards for ASHAs, and continuous supervision and support. ■

Geographic Coverage: Moradabad District, Uttar Pradesh, India

Implementation Partners: Project Concern International (PCI), Dimagi, Inc.

Donor: Dimagi, Inc., through CORE Group

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