

mSAKHI

An interactive mobile phone-based job aid for accredited social health activists (ASHAs)



With 56,000¹ maternal and 876,000² newborn deaths each year, India accounts for 19% of all maternal and 29% of newborn deaths globally. Accredited social health activists (ASHAs), instituted as part of India's National Rural Health Mission (NRHM)³, can prevent many of these deaths by helping women and their families recognize maternal and neonatal danger signs and promptly seek care. However, a majority of these community health workers (CHWs) are low-literate village women and face significant operational challenges in conducting routine maternal, newborn, and child health (MNCH) activities and in keeping their skills updated. In particular, ASHAs' lack of access to healthcare information, refresher training, supportive supervision and user-friendly job aids compromise their ability to contribute to improve maternal and newborn health outcomes^{4,5}.

The near ubiquity of mobile phones throughout the developing world, including India, has led to the emergence of mHealth applications that are potentially effective tools for supporting CHWs across a range of activities. The Manthan Project, funded by the Bill & Melinda Gates Foundation and led by IntraHealth International, developed and tested mSakhi, a mobile phone-based multimedia job aid for ASHAs. Two

operations research (OR) studies were carried out between April 2012 and June 2013 in Uttar Pradesh.

Implementation date: April 2012 to June 2013

About mSakhi

mSakhi, ('a friend' in Hindi) is an interactive audio/video-guided application that provides support to ASHAs in conducting routine activities across the continuum of MNCH care. It combines the functions of existing paper-based tools, thereby eliminating the need for difficult-to-use-and-carry flipbooks, manuals, registers, and other job aids. mSakhi content is based on the NRHM ASHA manuals and home-based newborn care (HBNC) guidelines and formats.

The Manthan Project initially developed mSakhi on the open-source CommCare platform using Java-enabled, keypad-based mobile phones. Based on ASHA and beneficiary feedback for more intuitive and multimedia-enabled applications, the Project modified mSakhi for touch phones using an open-source Android platform available on Google Play.

ASHAs register pregnant women and/or newborns into mSakhi during home visits. Upon registration, mSakhi generates a home visit schedule for each beneficiary and provides a set of audio-video guided instructions for counseling, assessment and referral specific to each visit. Auxiliary nurse midwife (ANM) supervisors receive the data, which is stored in the mSakhi central database, allowing for real-time tracking of both ASHAs and beneficiaries. The database is designed for seamless integration with existing government information and communication technology (ICT) systems such as the Mother-Child Tracking System (MCTS) and the Health Management Information System (HMIS), saving time and reducing delays.

Evaluation and Results

The Manthan Project conducted two OR studies, in collaboration with the Government of Uttar Pradesh (GOUP), to compare the feasibility and effectiveness of mSakhi against existing paper-based tools. The pre-test/

post-test quasi-experimental design involved a total of 143 ASHAs. The first study was conducted from April to December 2012 in Bahraich District. The feasibility and effectiveness of mSakhi was tested as a self-learning and counseling tool. A total of 86 ASHAs (46 experimental, 40 comparison) participated, covering a population of 46,000. The second study was conducted from November 2012 to June 2013 in Jhansi District. IntraHealth evaluated the effectiveness of mSakhi as an integrated tool (self-learning, beneficiary registration, counseling, decision-support and real-time monitoring) for the postnatal period. Fifty-seven ASHAs (29 experimental, 28 comparison) participated, covering a population of 39,000.

ASHAs reported that mSakhi enabled them to articulate correct and complete counseling messages due to the voice-enabled and video-supported guided instructions, without having to carry manuals and flipbooks during home visits. Beneficiaries found mSakhi to be engaging and also reported other family members' interest in the counseling messages because of the multimedia mobile content.

mSakhi users also demonstrated greater recall of at least six critical newborn conditions warranting referral compared to paper-based ASHAs. mSakhi users in the first study delivered complete messages for several MNCH topics significantly better than those not using the application. Lastly, observations of ASHAs using mSakhi showed them to have significantly better newborn assessment skills while also being able to register more births and identify more sick newborns needing referral for both immediate and home-based treatment.

Lessons Learned

- mSakhi can help ASHAs identify and make correct referrals of sick newborns.
- mHealth applications can improve CHW knowledge and skills, but require periodic refresher training and supervision to support acquisition and retention.
- A simple, intuitive and voice navigated user interface is important for uptake of mHealth applications.
- ICT support is critical for sustained support on mobile maintenance and application updates to CHWs. ASHAs also need regular supervisory feedback to ensure high and effective use of the application.
- mHealth interventions require initial and recurring costs, with the mSakhi program costing INR 10,280 and INR 4,680 per ASHA, respectively. This outlay needs to be compared with the benefit of potentially improved newborn health outcomes.

Conclusion

The two operational research studies demonstrated that, compared with existing paper-based job aids, mSakhi is a more user-friendly and effective ASHA tool for a range of activities, including self-learning, counseling, and newborn assessment. Although the two studies' limited sample size and short duration do not permit measurement of mSakhi's effect on community-level health outcomes, these promising data suggest that mobile applications may be an important tool to support ASHAs in improving MNCH outcomes and for implementing and evaluating mSakhi at scale.

Geographic Coverage: Bahraich and Jhansi districts in Uttar Pradesh, India

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