Improving healthcare through ICT for India's rural women: e-ASHA in Rajasthan

Despite the efforts of the Indian government, the majority of the most marginalised people residing in rural areas are still unable to access health services. A new ICT tool was tested with a target group of 40,000 individuals last year. The results are encouraging.

In India, the Accredited Social Health Activists (ASHAs) have long played an indispensable role in healthcare for the rural poor, above all in mother-child healthcare. They act as the first link between the health system and the rural community. ASHAs are local women who have been identified, selected and trained to act as health promoters in their communities. They generate health awareness and mobilise communities to engage in local health planning and greater use of healthcare delivery systems. Their practical tasks include encouraging women to give birth in hospitals, bring their children to immunisation clinics and embrace family planning. They administer first aid to treat basic illnesses and injuries and help improve hygiene and village sanitation. The ASHAs also assist with out-patient treatment or admissions by escorting pregnant women and children to the nearest assigned health facility. This would be a primary health centre (PHC) for communities numbering 20,000 to 30,000 or a community health centre (CHC) for populations of 80,000 to 120,000 (covering 4 PHCs) with 30-bed provision.

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However, their work is complicated by a wide range of obstacles. Each ASHA has to cover a target population of 1,000 on the plains and 500 in desert, hilly or tribal areas. Only one Auxiliary Nurse Midwife (ANM) is provided for a population of 5,000, which means one ANM usually supervises five ASHAs. She holds a weekly or fortnightly meeting with the ASHAs and gives them on-the-job training. ASHAs can also draw on the support of a village-based Aangan Wari Worker (AWW) under the Integrated Child Development Scheme (ICDS) run by the Ministry of Women and Child Development. Moreover, an ASHA has the daily problem of covering a great deal of difficult terrain, mostly on foot and often loaded down with registers, weighing scale and information, education and communication (IEC) materials needed for interpersonal communication with beneficiaries. No wonder that some ASHAs become less fastidious and the delivery of services suffers, especially the counselling of eligible couples.

With the aid of IEC, ASHAs are required to find out whether a woman is underweight, anaemic or in any way physically unfit and establish who requires medical attention. But due to the practical difficulties they face, they are often unable to communicate effectively. In some cases, too much time passes between identifying an alarming symptom and initiating a medical response. Besides, there are several bottlenecks in the health monitoring system, including:

- **Multilevel entry by different people:** ASHA's are themselves a primary source of health data. Information is passed on to the Auxiliary Nurse Midwife, who in turn sends it to the Primary Health Centre (PHC) where it is filed by a data entry operator. This multi-level handling of information sometimes leads to errors and delays in data reporting.

Tablets PCs help health workers to input, manage and transfer the data.

Photos: A. Mathur

- **Health Supervisors turned data entry operators:** Some of the data entry operators in the PHCs were actually appointed as Health Supervisors, who are supposed to solve the queries and provide supportive supervision to ASHAs. However, with time spent on performing data entry work at the PHCs, the supervision part of their work has increasingly taken a back seat.
- **Making action plans:** ASHAs need to refer to the records regularly in order to fix next day's visits with the beneficiaries. This is a cumbersome task that prevents many visits from occurring at the scheduled time.
- **Timely incentives to ASHAs:** Some ASHAs do not receive their monthly payments on time, leading to a lack of motivation and less interest in working more efficiently.
- **Tracing and tracking the data entry point:** As yet there has been no tracking and monitoring system capable of finding out whether the data given by the front-line workers is authentic or where it was recorded.

In order to provide the rural front-line workers with a technology to make their communication with village beneficiaries more effective, the United Nations Children's Fund (UNICEF) field office for Rajasthan, with the assistance of the Indian Institute of Technology (IIT), Jodhpur, designed an innovative approach called e-ASHA. It consists of tailor-made application software that offers a more efficient way of identifying, tracking and monitoring mother and child health. It was decided to field test the concept and approach in a difficult-to-reach cluster of remote villages with fewer facilities, and with the set of those ASHAs who were comparatively less literate and more deprived of exposure to the outside world. Jasol Village was identified for this purpose. It is located in Balotra Block of Barmer, one of the difficult-to-access desert districts in Rajasthan. Given its tough terrain and hard location, Jasol Village was likely to have a low success rate for any innovation trial. It was believed that if the innovation was found to be successful in such an area, then it could be easily replicated in other less difficult parts of Rajasthan. The test started initially with 25 ASHAs, covering a population of 40,000 individuals in 2013.

Salient features of e-ASHA

The tool was designed to reduce the burden of the rural front-line workers, while also advancing their planning and communication skills. This would eventually improve the quality of counselling and institutional deliveries and ensure regular ante-natal check-ups, timely vaccinations and post-natal care. The salient features of this innovation are as follows:

- **Digital entries:** All the information that the ASHAs were required to record in their bulky registers can now be entered in a tablet PC that weighs much less and is easy to operate.
- **Pre-loaded tool:** The application software has a pre-installed questionnaire which helps the ASHAs to recall the issues that were discussed with beneficiaries. The responses can be entered, and the application software generates pop-up messages that give an alert if a pregnant women has any kind of anomaly in their present health condition.
- **Questions linked with audio-visuals:** The audio-visuals are linked to certain questions that assist the ASHAs to conduct efficient interpersonal communication sessions and create better health awareness among beneficiaries. They deal, for instance, with ante-natal care, appropriate haemoglobin or timely vaccinations of pregnant woman.
- **Offline and online data entry facility:** The data can be entered both online and offline by ASHAs, which helps resolve the issue of net connectivity. The system also avoids the errors entailed in multi-level handling of information.
- **Health Supervisors free for supportive supervision:** Most of the Health Supervisors, who have had to perform additional data entry tasks, will be free to resume supportive supervision and facilitate ASHAs in their job.
- **Automatic generation of action plan:** Automatic generation of the next day's schedule of visits helps ASHAs communicate better with a beneficiary. They now know beforehand whether they will be counselling for ante-natal care (ANC) or post-natal care (PNC) or performing what is called Integrated Management of Neo-Natal and Child Illness (IMNCI).
- **Reminder service:** The SMS reminder service alerts both the ASHA and the beneficiary. It tells them that a ANC/PNC or IMNCI appointment is due. This is auto-generated through the server.
- **Alert signs:** Repeated pop-up messages give alerts while data is entered on pregnant women, thus improving the capacity of ASHAs by telling them whether the respondent has a nutritional deficiency or is suffering from a medical condition.
- **Authentic data generation and transmission:** Regular software updates help in gathering accurate information from respondents. Since the information is entered where the beneficiary lives, the data can be generated and transmitted in good time.

The ICT tool ensures that no child or mother goes untracked.

The Indian Institute of Health Management Research (IIHMR) was involved in capacity building among the front-line health workers. During summer training courses, IIHMR interns at UNICEF worked assiduously with ASHAs in the villages for a month and taught them how to use the technology effectively. They gave both on-job and classroom training to ASHAs and

worked upon improving staff communication skills and proficiency with the tablets. ASHAs who were only functionally literate have now become very adept at working with the tablets.

The role of the Government of Rajasthan has been very encouraging here. During the trial the government officials concerned were always kept in loop through formal and informal discussions. From time to time they were updated on the progress being made in the project. The government officials supported the idea and its implementation. At the end of the test phase, the Accredited Social Health Activists were invited to demonstrate their acquired skills and capabilities at the Institute of Technology in Jodhpur to high-ranking politicians, including the President of India, ShriPranab Mukherjee. The policy makers were very impressed with the outcome. The ASHAs showed improvement in their confidence level with effective interpersonal communication, easy and assured data entry skills and the ability to automatically generate reminders to facilitate an action plan. The ICT tool ensures that no child or mother goes untracked, makes register entries much easier and allows ASHAs to carry less weight.

Overcoming hurdles

Of course, in spite of the positive examples, some problems were revealed in the course of implementation:

■ **Scepticism:** At the beginning, there was a mood of disbelief concerning the value of this innovation. People were of the opinion that ASHAs who were not literate enough to maintain their records would not be able to use ultra-modern tablets. But the vision of the initiators is much broader. They work on the premise that "technology is not literacy-bound", arguing that if a young child with little literacy can use the latest technology, why shouldn't ASHAs?

■ **Technology fear:** Generally speaking, people are scared of using new technology and gadgets. In this trial with tablet computers, some people took the view that an ASHA would mishandle the equipment. They were also worried about who would bear the costs if anything went wrong. It is a risk that was willingly accepted by the initiators, who maintained that, with a relatively small number of devices, no major, let alone unbearable, loss would ever be incurred.

■ **Availability of electricity:** Electricity is required for charging the tablets. In Rajasthan, 99 per cent of villages and 44 per cent of households are electrified. However, this does not actually mean there are 24-hour electricity supplies the whole year round. ASHAs with access to a power supply can charge the tablet at home, but electricity will remain a problem. Solar chargers could be an option.

■ **Repair of the tablets:** Service and repair of electronic equipment is an issue that needs addressing in a culture that encourages a use-and-throw-away attitude. The possibility of training entrepreneurs to service and repair the tablets could be explored. Another option would be for Bharat Sanchar Nigam Limited (BSNL), a state-owned telecommunication company, to replace the tablets at a minimum charge and recuperate the remaining cost from its corporate social responsibility funds.

As a result of the presentation at the Institute of Technology in Jodhpur, the politicians concluded that the Government of Rajasthan should adopt this innovation and initiate a phased roll-out in other rural areas. Whether this actually happens will depend on the policies to be adopted by the newly elected state government.

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