

Mobile Enabled Chartbook

Mobile Enabled Interactive Assessment and Identification of Treatment using Chartbook for Health Workers

Background

One of the integral components in India to meet the Millennium Development Goals (MDG) through IMNCI strategy is the training of front-line functionaries (health workers) including ANM's and Anganwadi Workers (AWW's). This training facilitates the health workers to take care for newborns and their mothers; infant and young child feeding; vaccines; prevention and case management of pneumonia, diarrhea, malaria control in the community settings. The recent developments of mobile technologies and the wide access of mobile devices at the grassroots levels have generated a wide range of opportunities to support the usage of mobile application for teaching, training, and to accomplish day-to-day work at hand. Many health workers at the grassroots levels have mobile phones, and some even have low cost tablets and smart phones. In general, most of the health workers specifically in India have basic multimedia enabled mobile phone. India has the world's second-largest mobile phone user base with over 929.37 million users as of May 2012. NCIDE-SOHS, IGNOU under the UNICEF funded project "Development of a Bilingual IDVD enabled and Mobile Supported IMNCI Training package for Health Workers" developed mobile enabled chartbooks for health workers both in English and Hindi which can be used by them during the training as well as in the field where they provide health care services to the community.

Need of the Innovation

For many villages where hospitals are not accessible easily, 860,000 ASHAs across the country are the only ray of hope in providing medical assistance. Instrumental in bringing down the infant mortality rate from over 50 deaths per 1,000 live births in 2005 (when ASHA was launched) to 34 deaths in 2016, these women provide information to people in rural areas about health, sanitation and nutrition; conduct ante-natal and post-natal checkups; assist women during their deliveries, deliver polio vaccines and conduct health surveys. The IMNCI chartbook is used by health workers to access, classify and treat or refer young infants and children less than five years old through a case management process. Each health worker accomplishing this task has to carry the chartbook with them which facilitates them in accessing and classifying the young infant or child less than five years of age. To lessen their load and to facilitate them in taking correct decisions by using the chartbook, a need was felt to develop a mobile app for the same.

Description of the Innovation

The mobile enabled chartbook application enables the health workers to assess, classify, identify treatment, treat the young infant or child, counsel the mother and refer growth charts on their mobile devices through a simple and algorithm based scheme. Mobile component of the IMNCI Package for health workers which include interactive chartbook for handheld basic multimedia, JAVA enabled mobile handsets. The software on the basic multimedia phone is designed primarily to support the listening to audio, capturing and viewing images, video and playing java or flash enabled games. While these are of some use to the health workers, they are to be customized to meet their training and day-to-day activities at work. The mobile enabled chartbook for health workers both in English and

Hindi is developed in such a way that it can be used by the health workers during the training as well as in the field where they provide health care services to the community. The mobile enabled chartbook application enable the health workers to assess, classify, identify treatment, treat the young infant or child, counsel the mother and refer growth charts on their mobile devices through a simple and algorithm based scheme. The choice of software tools was pragmatic. Though we had a lot of options and high-end tools like flashlite to develop the chatbook for mobile phone, but keeping in view the group of health workers who hailed from rural, tribal and urban areas, the chartbook was developed on the J2ME platform, which had the capability of running on basic multimedia mobile phones. Initially, the chartbook was interactive as it opened the relevant section on the basis of the menu based input given by the end user and later we developed an automated responsive chartbook. In order to ensure that, the mobile enabled chartbook application for basic multimedia mobile phone is user friendly, compatible, and effective for health workers in the field as well as during the training a pre-test and pilot test were conducted. A group of 63 health workers from the state of Rajasthan and Haryana were identified for the experiment. Most of the health workers had basic multimedia mobile phones.

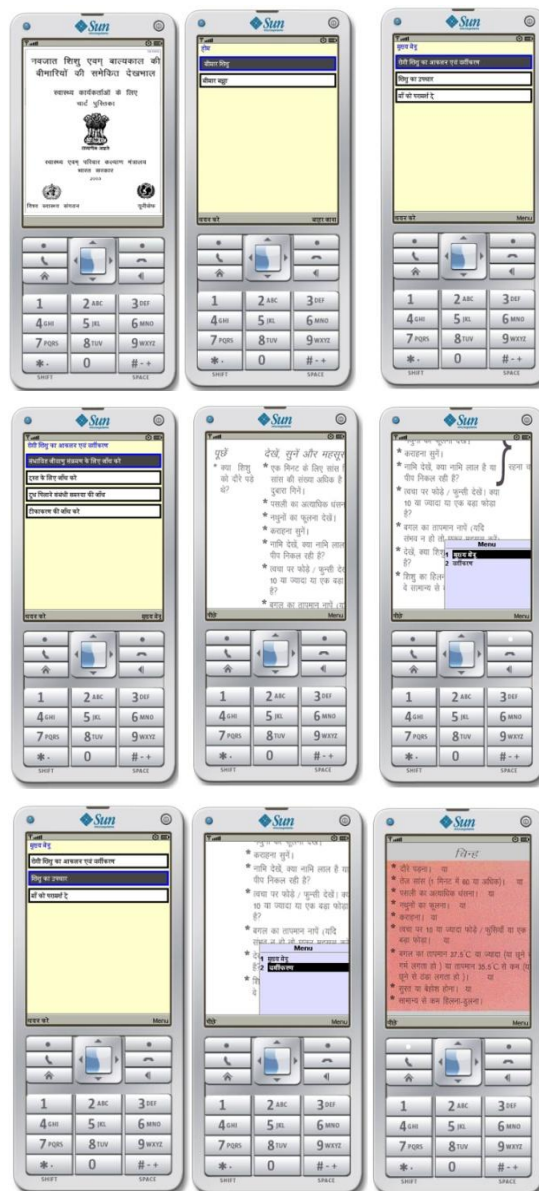


Figure 1 : Screenshots of Interactive Chartbook

Innovative Features

The time when the interactive mobile enabled chartbook was developed, experimentation of using mobile as an educational and training tool were being carried at the other parts of the globe. However, this was a unique intervention in training of health workers where it is not only a part of their training process, but they can use the interactive chartbook app on their mobile phone for day to day use. Some of the features of the interactive chartbook are given below :

- Mobile enabled interactive chartbook is a light weighted portable application.
- The mobile enabled chartbook is very useful to the health workers while accessing the IMNCI charts during home-visits.
- The process of identifying treatment is automated and hence leads to correct classification and identification of the treatment for sick young infant and sick children on the basis of the signs ticked by the health workers.
- The interactive chartbook is available in both English and Hindi languages.
- Navigation of the mobile enabled chartbook is simple.

Achievements

The product was developed keeping in view the basic multimedia mobile sets. This enabled the application accessible to a large group of health workers. The application was used by health workers of Haryana and Rajasthan.

Applications and Uses of the Innovation

In the beginning a testing of the mobile enabled chartbook for health workers was conducted to get the comments, observations of the health workers regarding the concept of using mobile enabled chartbook for training and in field, to identify problems faced by the health workers while going through the chartbook on mobile and to test the usability of mobile enabled chartbook for health workers in field.



Feasibility of the mobile support program was tested, it was found effective, operable and useable by the grassroots health workers. Changes were also made accordingly for the mobile enabled chartbook to be more effective in the field.

Way Forward

The interactive chartbook component could be further developed to provide the health workers an interface through which they can also process the referral cases where the concerned district hospital can get a call or message even before the referred young infant or child reaches the hospital.

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Funding Agency : [UNICEF](http://www.unicef.org)

Period : 2011-2012