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RESEARCH ARTICLE

USE OF MOBILE TECHNOLOGY FOR STRENGTHENING MONITORING OF PRIMARY HEALTH CARE SERVICES IN RAJASTHAN

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ABSTRACT

Use of ICT is changing the way health services are delivered. It also has tremendous role to play in strengthening management and monitoring of health services. Rajasthan is India's geographically largest state and the state lags the country on most of the socio-economic & health related indicators. One of the key challenge faced in terms of ensuring proper functioning of health facilities was lack of proper monitoring and supportive supervision mechanism. The monitoring visits by district officials were few and also there was lack of mechanism to follow-up on the gaps identified during the visit. Hence, to strengthen the monitoring of primary health care facilities, facilitate data driven decision making and ensure timely solution of gaps identified, a mobile application along with accompanied website was developed. The mobile application was used by around 3000 officials for monitoring of more than 15,000 primary health facilities in the State. In a year, more than 70,000 visits were undertaken using this application and it has facilitated systematic collection of the data & provided facility for addressing the gaps & monitoring the improvement. It was a cost effective & efficient way for strengthening primary health care services and highlights tremendous potential of mobile in strengthening management of health services.

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INTRODUCTION

The growing field of information and communication technology (ICT) is disrupting most of the existing model of delivering services and health is also not aloof of it. In a country like India, which is still struggling to provide quality health services to its people and public health system is facing several challenges including shortage of infrastructure and human resources, ICT can play role of force multiplier to improve the efficiency and effectiveness of health services (World Bank, 2012). There are several documented case studies depicting use of ICT for providing health services and strengthening management of health services including use of mobile for data collection & providing clinical management support in absence of qualified service providers and motivating people to adopt healthy life-styles (PWC, 2014). Some of the case studies have also documented the usefulness of mobile application in improving monitoring of health services (Free, Philips, *et al*., 2013). However, at times, questions were also raised on relevance of use of ICT in health sector specially in-terms of the cost of mobile based solutions and connectivity issues in rural areas (Simba, 2004)

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Use of mobile application for monitoring of health services in Rajasthan

Rajasthan is India's geographically largest state and accounts for the 5.67% of the total India's population (Census,2011). State lags the country on most of the socio-economic & health related indicators and difficult geographical terrain further compounds the development challenges. Providing health services and ensuring its effective monitoring was a major challenge. The monitoring visits by district officials were few and also there was lack of mechanism to follow-up on the gaps identified during the visit. Hence, to strengthen the monitoring of primary health care facilities, facilitate data driven decision making and ensure timely solution of gaps identified, a mobile application along with accompanied website was developed. The key steps involved in development &launch of mobile application were –

Key features of mobile application

The mobile application was developed for android platform and its key features were –

a.Scheduling of the field visits – The mobile application required all the district and block officials to plan the visits by last date of previous month. If visit was not planned by the

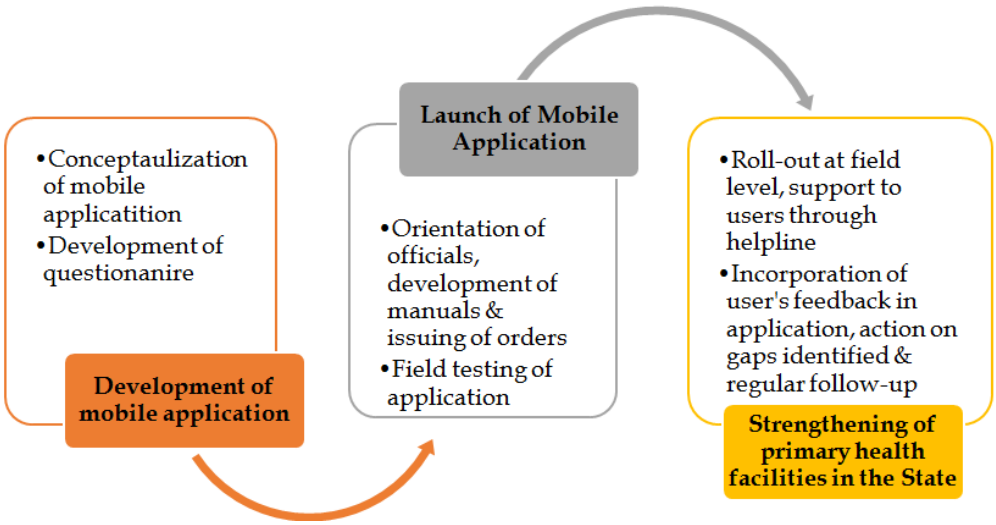

Figure 1. Steps in development and launch of mobile application

The complete flow chart of processes is given below -

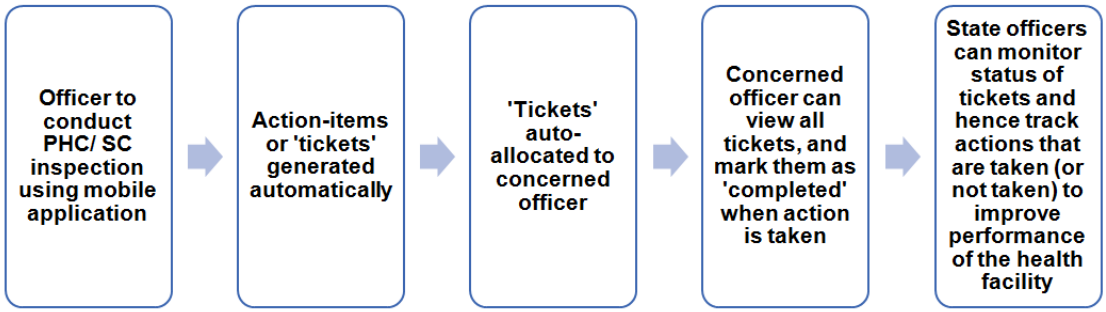

Figure 2. Process Flow Chart

given date then system automatically allot the facilities for visit. For each cadre of officials, the number of minimum facilities to be visited every month was fixed and visits need to be planned accordingly. Also, the facilities selected for visit by one official can't be selected for visit by another officials and same facility can't be visited by an official in two consecutive months. This helps in ensuring that all facilities in the block and district got visited. Besides that, if an official was not able to visit a facility on planned date due to any urgent work or issue, then he/she was allowed to visit the facility on another date in same month.

b.Filling information during field visits – The mobile application has a very simple interface and during the monitoring visit, the concerned officials were easily able torecord the data. Incase mobile network was not available then data was recorded in offline mode and submitted automatically once data connectivity was restored.

c.Geotagging and capturing pictures - The mobile application automatically recorded the geo-location of the user at the time of filling information. Besides that, users were allowed to take maximum 3 pictures of the facilities visited and taking pictures, was mandatory incase facility was closed. It helped in ensuing that user have visited the facility and helped in bringing attention to any urgent issue.

d.Real time availability of data – The data entered during the field visit by any officials was available real time on the accompanied website. Different users have given different rights and accordingly they can see the data & take action.

e.Generation of tickets and follow-up on gaps – For each gap identified during the monitoring visit, a ticket was generated and mail was also sent to concerned official. The ticket was only closed when gap was addressed and details of same was entered into the website.

RESULTS

The mobile application was used by around 3000 officials for monitoring of more than 15,000 primary health facilities in the State. In a year, more than 70,000 visits were undertaken using this application and it resulted in reduction of staff absenteeism from 36% to 8%. Number of health facilities opened at the time of visit improved from 91% to 96% and more than 300 officials were given notices for being absent or poor performance. 90% of the gaps identified in the areas of infrastructure, vacant positions and training gaps were addressed with-in 3 months.

Conclusion

Development and implementation of mobile application has helped in facilitating regular supportive supervision and monitoring visits to the health facilities in the state. It has facilitated systematic collection of the data & provided facility for addressing the gaps & monitoring the improvement. It was a cost effective and efficient way for strengthening primary health care services. Overall, the experience highlights

advantages of using IT and mobile application for strengthening availability and monitoring of health services.

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