

Encouraging health workers to use mHealth for delivering primary healthcare services: policy brief

Key Policy Considerations

Worldwide, there has been an increase in the use of mobile health devices by various categories of health workers. However, it is important to understand the barriers and enablers for successful implementation of mobile health (mHealth) to deliver primary health care services, particularly from health workers' perspectives. Key policy considerations are:

1. Health workers should be encouraged to use mobile devices to initiate remote consultation calls to their patients. To facilitate this, policies and protocols should be in place to explain what can and cannot be done in the remote consultations (i.e. determine what type of cases warrant face-to-face contact), and to clarify the liability issues of health workers using mobile devices/telemedicine systems. (high confidence in the evidence).
2. A standardised mHealth training package that covers the generic aspects of use of mobile devices and good data practices should be developed to appropriately train and mentor health workers on the correct use of mobile devices. The package should include the provision of learning and training content via mobile devices/mLearning to complement traditional methods of delivering continued health education and post-certification training.
3. Using mobile devices should lead to reduced travel time to remote/distant places and settings of health workers. Guidelines in collaboration with health workers should be developed to protect them from patients

What is a policy brief?

A policy brief provides a summary of global research on a particular topic **to inform decision-making contextualised to a particular setting**. This policy brief is based on evidence from high quality systematic reviews and a guideline.

Why was this policy brief developed?

The policy brief is part of the **Ensuring Health Systems Capacity for COVID-19 and Beyond: Evidence Series**

Suggested citation

Moola S, John O, Bhaumik S. Encouraging health workers to use mHealth for delivering primary healthcare services: policy brief. The George Institute for Global Health, India. June 2020.

- contacting them outside of normal working hours, such as in the context of emergencies or other considerations. (high confidence in the evidence)
4. Health workers need to be aware of the importance of confidentiality of patient information when using mobile devices. mHealth applications for use by health workers to incorporate privacy and confidentiality preserving technologies by design. (high confidence in the evidence).
 5. Health workers should use mobile devices to counsel and influence patients' health behaviours in a positive way through health promotion and educational messages. (moderate confidence in the evidence)
 6. Health workers need better integration of mHealth interventions with other existing electronic health information systems and to consolidate data dashboard between different vertical programmes. This will improve the usability of their mobile devices and replace the need for physical reporting tools to avoid duplication of data recording and reporting systems. (moderate confidence in the evidence)
 7. The use of mobile devices to record routine patient or surveillance data is helpful for decision making. Ensure mechanisms for documenting and tracing past exchanges and decisions made during consultations. Establish effective systems for monitoring which includes the establishment of standard operating procedures that describe protocols for ensuring patient consent, data protection and storage, and verifying provider licensing and credentials.

Background

The World Health Organization (WHO) recently published a guideline on digital interventions for health systems strengthening that recognises mHealth as a significant component in the delivery and support of healthcare policy, guideline and decision-making processes.¹ The Ministry of Health & Family Welfare (MoHFW), Government of India recently released a guidance note for addressing service delivery of non-COVID health conditions through the use of various telehealth platforms to maintain physical distancing.² Mobile Health (mHealth) was identified as one of the modes to minimise patient-provider contact.^{2,3}

mHealth refers to the use of mobile devices, such as mobile and smartphones, patient-monitoring devices, personal digital assistants, and tablets to support public healthcare practices.⁴ mHealth could be used during patient consultations to support decision-making; to organise and deliver health services; to promote health messages; and to improve communication between health workers, as well as between health workers and patients and decision makers.⁵

Methodology

The document provides a summary of evidence from two systematic reviews^{4,5} and the WHO guideline on digital health interventions¹. The qualitative systematic review by Odendaal et al⁴ forms the basis of this policy brief to help understand the barriers and enablers for successful implementation of mHealth technology from health workers' perspectives and encourage them to use mHealth for delivering primary health services. The findings from this review⁴ are complemented by a quantitative systematic review⁵ findings and the WHO guideline¹ to formulate and contextualise key policy considerations. A systematic review is a type of research which uses reproducible, systematic and robust methods to summarise evidence from multiple research studies to inform decision making. From the qualitative systematic review,⁴ relevant findings related to the phenomena of interest (health workers' views and experiences) were extracted using coded data. The aim was to synthesise the findings and categorise them into various themes that may allow for the generation of policy recommendations. We summarised the qualitative review findings and also reported on the confidence in the evidence using the GRADE-CERQual (Confidence in the Evidence from Reviews of Qualitative research criteria (Table 1 at the end of the report)).⁶ We briefly summarised the results

from the quantitative systematic review⁵ and the findings from the WHO guideline¹.

Results and Findings

The results and findings from the two systematic reviews^{4,5} are presented separately, in addition to a separate section with a brief summary of the WHO guideline¹. The systematic review by Odendaal et al³ explored the perceptions of various health workers when using mHealth technologies. Majority (n=39) of the 43 studies included the views of lay health workers and a range of professional health workers, such as nurses, paramedics, doctors, midwives, pharmacists, and laboratory staff. A few studies (n=4) included non-medical professional participants such as programme managers, administrators, decision makers, and social workers. Further, 74% (n=32) of the studies were conducted in low- and middle-income countries, mostly in Africa and some in India (n=4). Eleven other studies were conducted in high-income countries, mostly in USA. Smartphones or iPhones and personal digital assistants were most commonly used and described in the studies. Maternal, neonatal and child health, communicable and non-communicable diseases, cardiovascular diseases, and intimate partner violence were the most common healthcare issues addressed.

Overall, the qualitative review⁴ reported 42 findings, with a high confidence in 13 findings, moderate confidence in 18, low confidence in six, very low confidence in five. The review reported four overarching themes. Theme 1 relates to the change in working styles and relationships between health workers (for example connecting lower-level health workers with higher-level health workers) through mHealth use. Theme 2 deals with the changes in delivery of care through mHealth use, and includes health workers' views and experiences about issues, such as accessing information from the Internet, providing remote/distant care, and using treatment algorithms. Theme 3 describes the new forms of engagement and relationships with patients and communities through mHealth use, as it allows bi-directional communication between the health worker and the patient. Issues such as improved health worker status due to the use of modern technology and the need to protect patient information and privacy on their devices were also covered in this theme. Theme 4 relates to the health workers' use and views of mHealth that are influenced by factors such as costs, the health worker, the technology, the health system and society. Issues such as the impact of poor network access and poor access to electricity were also covered in this theme. Key findings from the systematic review are categorised under the four broad themes below:

- **Theme 1** - mHealth changed how health workers worked with each other



- Health workers appreciated the use of mobile devices in improving connectivity with other health workers and across various healthcare services, and for better coordination of care delivery.
- Lower-level health workers perceived that mHealth enabled them to be able to reach higher-level health workers for advice and support to improve care and patient satisfaction. However, lower-level health workers were reluctant to reach higher-level professionals or had negative perceptions of mHealth devices when higher-level health workers responded in anger or didn't respond at all.
- Some health workers felt that mobile devices improved their reporting to supervisors in terms of accuracy. Some supervisors reported that mobile devices allowed them to better identify staff who needed support.
- **Theme 2** - mHealth changed how health workers delivered care
- Health workers valued the enabling of task optimisation through mHealth interventions.
- Health workers felt that mHealth increased service efficiency only if it improved feedback, speed and workflow.
- The use of mobile devices was viewed as a good option to overcome some of the challenges related to rural and geographically challenging contexts, as it helped reduce their travel time, and provide quality care.
- Portability and work schedule flexibility of mobile devices were some of the important features appreciated by the health workers.
- The perceptions of using treatment and screening electronic algorithms on mobile devices varied widely, from finding it easy and useful, to being a threat to their clinical competency, and an information overload. Further, some health workers felt that errors in data entry may lead to wrong treatment guidance.
- Health workers and their managers perceived that the use of mobile devices to record routine patient or surveillance data was helpful for decision making. And in most cases, mobile health was perceived to be more advantageous than paper-based data collection.
- Some health workers felt that the use of mHealth would generate an extra workload for them (for example, reaching more patients needing care, or maintaining both a mobile health and paper system).
- **Theme 3** - mHealth led to new forms of engagement and relationships with patients and communities
- Health workers perceived that through mobile device, they could communicate directly with their patients that may improve care and their relationship with patients. In these cases, generally patients initiated the contact, and the health workers felt that patients took ownership of their health.



- The importance of protecting confidential patient information when using mobile devices was seen to be important by the health workers. Health workers shared patients' concerns around their personal information concerning stigmatised issues, such as HIV/AIDS and interpersonal violence. Health workers suggested building trust with patients prior to using the devices.
- There was a wide range of concerns from health workers around being contactable via mobile devices during and outside of working hours. To address this issue, some health workers suggested setting boundaries with their managers/supervisors.
- Some health workers perceived that the use of mobile devices improved their social status in the community they served. Health workers perceived that patients were more receptive when they were familiar with the devices used.
- There was a general view that health promotion and educational messaging directed at patients using mobile devices, positively influenced their health behaviours.
- **Theme 4** - Health workers' use and perceptions of mHealth could be influenced by factors tied to costs, the health worker, the technology, the health system and society, poor network access, and poor access to electricity
- Health workers felt that patients appreciated when health workers called them, as it saved them costs in terms of travel and consultations.
- Digitally literate health workers had positive experiences and perceptions, whereas health workers with low digital literacy had negative perceptions in terms of job security and being embarrassed when making mistakes in front of their patients.
- Health workers felt there was a need for training and familiarity with mobile devices to address their initial anxiety in using the devices. Peer training from technologically proficient colleagues was found to be valuable. Lower-level health workers' ability to learn how to use the mobile devices was impacted by not having mentors who used mobile devices.
- Health workers generally viewed mobile technology applications if they were user-friendly, easy to learn, and improved the quality of their care. However, they were reluctant to use mobile devices when the applications were not easy to use.
- Health workers perceived that there was a considerable influence of the health systems and social context when using mHealth. Some of the contextual and systems issues identified included difference in language use between patients and health workers, gender discrimination, discomfort with professional hierarchies, poverty, resource constraints, and staff attrition.

- Health workers felt the need for mobile health interventions to be integrated with other existing electronic health information systems and standard care practices.
- Poor network connectivity, access to electricity, and the costs to recharge devices were some of the main challenges experienced by the health workers in using mobile devices.

Bassi et al⁵ undertook a systematic review to describe the current scenario of mHealth in India and its potential role in health systems strengthening in India. Overall, the review included 318 articles, with the majority being opinion-based articles, and descriptive and analytical cross-sectional studies, with a very few experimental studies included. Overall, the results showed that the use of mHealth applications was mostly limited to a few states and union territories such as Tamil Nadu, Karnataka, Delhi and Maharashtra. Health care professionals included in the studies were mostly physicians, with very few studies including other health care workers such as community health workers. Some of the key findings are reported below:

- Service delivery strengthening was the primary objective of majority of the included studies. Key activities covered in this domain included patient consultations, remote diagnosis, patient education, and follow-up through videoconferencing. Mobile phones were mainly used for treatment adherence reminders (text and Interactive Voice Response), appointment reminders, and behavior change messaging. Technology-related perception of the end users, patient satisfaction, assessment of health care professional needs, and challenges related to health service delivery using IT were some of the issues that were explored in this domain.
- The most common health workforce strengthening activity included the establishment of a provider-to-provider communication through teleconsultations, remote trainings, and capacity building. A few studies reported on the development and utility of interventions for community health worker that facilitated task shifting for disease screening, referral, and health information dissemination.
- A few studies reported on the use of mHealth applications with a focus on medical products and technology and were mostly related to eye care (for example, use of remotely operated technological tools for disease diagnosis).
- Strengthening of the health information system, with focus on vital event tracking, disease surveillance, and case notification in rural areas was evaluated in a few studies.
- Due to constant new developments in mHealth applications, it becomes imperative that health workers become familiar with these applications and be supported with the technological know-how.

The WHO digital interventions guideline¹ highlight the role and value of digital health interventions (that are primarily available via mobile devices) in strengthening health systems and in closing health system gaps. Some of the key recommendations are:

- The WHO recommends the use of mobile devices for telemedicine, targeted patient-health worker communications, health worker decision support and digital tracking of health status and services.
- Telemedicine consultations between patient and health worker should be conducted in settings that ensure monitoring of patient safety, privacy, traceability, accountability and security.
- Digital targeted patient communication for behaviour change regarding sensitive content such as sexual, reproductive, maternal, newborn and child health, should ensure that patient confidentiality and data privacy are sufficiently addressed.
- Digital provision of training and educational content for health workers should be adopted and complement traditional methods of delivering continued health education and in-service training.

Table 1: Descriptions of level of confidence in a review finding in the CERQual approach

GRADE Level	CERQual	What It Means
High confidence		It is highly likely that the review finding is a reasonable representation of the phenomenon of interest*
Moderate confidence		It is likely that the review finding is a reasonable representation of the phenomenon of interest*
Low confidence		It is possible that the review finding is a reasonable representation of the phenomenon of interest*
Very low confidence		It is not clear whether the review finding is a reasonable representation of the phenomenon of interest*

*Phenomenon of interest refers to the experience, activity or process occurring

References

1. WHO guideline Recommendations on Digital Interventions for Health System Strengthening. Geneva: World Health Organization; 2019. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK541902/>.
2. Enabling Delivery of Essential Health Services during the COVID 19 Outbreak: Guidance note. Ministry of Health & Family Welfare Government of India. 14th April 2020. Available online at:

<https://cdn.georgeinstitute.org/sites/default/files/essential-services-during-covid19.pdf>

3. Telemedicine Practice Guidelines. Enabling Registered Medical Practitioners to Provide Healthcare Using Telemedicine. Ministry of Health & Family Welfare Government of India. 25th March 2020. Available online at: <https://www.mohfw.gov.in/pdf/Telemedicine.pdf>
4. Odendaal WA, Anstey Watkins J, Leon N, et al. Health workers' perceptions and experiences of using mHealth technologies to deliver primary healthcare services: a qualitative evidence synthesis. *Cochrane Database Syst Rev.* 2020;3(3):CD011942.
5. Bassi A, John O, Praveen D, Maulik PK, Panda R, Jha V. Current Status and Future Directions of mHealth Interventions for Health System Strengthening in India: Systematic Review. *JMIR Mhealth Uhealth.* 2018 Oct 26;6(10):e11440.
6. Lewin S, Booth A, Glenton C, Munthe-Kaas H, Rashidian A, Wainwright M, et al. Applying GRADE-CERQual to qualitative evidence synthesis findings: introduction to the series. *Implement Sci.* 2018;13(Suppl 1):1-13.

Published Notes

Title: Encouraging health workers to use mHealth for delivering primary healthcare services: policy brief.

Authors: Sandeep Moola,¹ Oommen John,¹ Soumyadeep Bhaumik¹

¹ The George Institute for Global Health, India res@georgeinstitute.org.in

Competing interests: OJ is Secretary of the Asia Pacific Association for Medical Informatics and a member of the WHO Digital Health Guidelines development group. Other authors declare no competing interests.

Acknowledgements

This gratis policy brief was made possible due to the support from World Health Organisation, Alliance for Health Policy and Systems Research. The contents of the policy brief do not reflect the opinion/position of the WHO or the requester.

Suggested citation: Moola S, John O, Bhaumik S. Encouraging health workers to use mHealth for delivering primary healthcare services: policy brief. The George Institute for Global Health, India. June 2020.