

Using mobile phones to keep track of medicines and other supplies and notify when more are needed. **What is the effect? And what are the implementation considerations?**

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Healthcare workers need medicines and other supplies to do their jobs properly. Many healthcare settings often lack supplies because governments cannot afford to buy them or because they do not have good systems for distributing them to the right places at the right time. During pandemics, a lack of supplies may also be common. To address some of these problems, managers and health workers are starting to use mobile phones and other mobile devices to keep track of supplies, decide how much more to order and when, and let people at higher levels of the system know when supplies are running low. But how well do these digital systems work?

Main results of the review

The review found one study from Malawi that measured **the effect** of mobile phone systems on access to medicines and supplies in health facilities. However, we don't know whether these systems improve access or not because the certainty of this evidence was very low.

The review found 16 studies from African and Asian countries that described **factors that could influence the implementation** of these systems. These factors include the sharing of data across all levels of the health system; reliable access to electricity and the internet; easy-to-use and functional phones and systems; good technical support; and sufficient training and supervision. Study authors underlined that well-functioning digital systems will only succeed if medical supplies are actually available.

Who is this summary for?

Implementation agencies, ministries of health, programme managers, healthcare facility staff, and any other stakeholders who are considering the use of mobile phones and other mobile devices to keep track of medical supplies.

What did the review look for?

A recent Cochrane Review of mixed methods (Agarwal 2020) searched for studies that assessed whether health workers that use mobile phone systems to keep track of medical supplies had better access to supplies than health workers using other systems or no systems at all. The review also searched for studies that described how these mobile systems are being used in primary health care settings and factors that influence their use.

How up-to-date was this review?

The review authors searched for studies that had been published up to August 2019.

Questions for planners and implementers

Below are a set of questions that may help health system or programme managers when planning or implementing mobile-phone based systems to track medical supplies. These questions build on the findings of this review.

Have you considered the availability of necessary infrastructure?

- Do health workers have reliable access to electricity and internet connectivity?
- Where network access is a challenge, are there systems in place so that staff can work off-line until connectivity is restored?
- Have you considered whether health workers might prefer to use basic or simple mobile phones or their own personal phones, rather than smart phones, for instance because their own phones might be cheaper and easier to use?
- Do you have reliable access to the medical supplies that local health facilities need? Are systems in place for regular procurement of supplies at the national and sub-national level so that supplies can be made available when requested through digital notification systems?

Have you taken the needs and view of users into account when developing, planning and implementation the use of mobile devices for stock notification and tracking?

- Have you considered the type and format of data and information that should be presented on a dashboard?
- Will you involve users in an iterative design process, with the system evolving as the needs of users and the health system become clear?
- Have you selected technology that is appropriate for your setting's data network coverage, data needs, and local capacity for maintenance?
- Have you put in place mechanisms to select software that aligns with program needs for specific functions such as capturing images, mapping geographical locations, and two-way communication?

Have you considered how to work with key partners and how to share data?

- Have you considered partnering with local authorities to facilitate effective implementation? This may include partnerships with the government, local telecommunication companies, technical systems providers or non-governmental organisations (NGOs)?
- Have you ensured that data is available at all levels of the health system? Would developing digital dashboards help in making data available to managers at district, regional and national levels? If developing dashboards is not feasible, is it possible to develop a paper-based system for sharing stock availability reports with district and national levels?

Is there a plan for addressing training and support needs?

- Have you ensured that health facility staff have adequate training in the use of the digital system and, where necessary, in the use of any equipment such as smart phones?
- Do health facility staff have sufficient mobile phone credit to support timely reporting of stock data and adoption of the system?
- Do you have the technical programming expertise that is needed to develop, install and maintain the system on an ongoing basis?
- Have you ensured that health facility staff have access to supportive supervision and responsive management structures?

These questions are based on studies from a range of different settings. This means that the importance of these questions may be different in your setting.

The questions presented in this summary are from a Cochrane Review. **This summary does NOT include recommendations.** The review authors have searched for, assessed and summarised relevant studies using a systematic and predefined approach.

The review authors systematically assessed the level of confidence or certainty in each review finding, using [GRADE](#) to assess findings from the studies of effectiveness and [GRADE-CERQual](#) to assess findings from the qualitative and descriptive studies. They then used the review findings to develop a set of questions for implementers.

Reference

The information for this summary is based on the following Cochrane Review:

Agarwal S, Glenton C, Henschke N, Tamrat T, Bergman H, Fønhus MS, Mehl GL, Lewin S. Tracking health commodity inventory and notifying stock levels via mobile devices: a mixed methods systematic review. *Cochrane Database of Systematic Reviews* 2020, Issue 10. Art. No.: CD012907. DOI: 10.1002/14651858.CD012907.pub2. <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD012907.pub2/full>

The implementation considerations described here also align with similar implications for practice identified in a linked Cochrane review: Odendaal WA, Anstey Watkins J, Leon N, Goudge J, Griffiths F, Tomlinson M, Daniels K. Health workers' perceptions and experiences of using mHealth technologies to deliver primary healthcare services: a qualitative evidence synthesis. *Cochrane Database of Systematic Reviews* 2020, Issue 3. Art. No.: CD011942. DOI: 10.1002/14651858.CD011942.pub2.

These reviews are among a series of systematic reviews informing the WHO guidelines on digital interventions for health system strengthening (<https://bit.ly/2U7BXT6>)

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