

This brief presents strategies on digital health as developed by the World Bank and WHO. While Health Information Systems have been around for decades in some high-income regions, the advent of Artificial Intelligence (AI) and mobile devices have been extremely disruptive technologies in the digital health space. These technologies are used for myriad tasks, at all levels of the health-care system, and the reviewed documents touch on how they can be implemented in a manner that results in a higher standard of care for patients, rather than complications. These documents highlight the significant challenges that need to be addressed, particularly in the context of sexual and reproductive health and rights (SRHR) and low- and middle-income country (LMIC) settings, where bias in data can adversely impact the performance and effectiveness of digital health systems. However, if implemented appropriately, digital health applications have the potential to reshape the interconnectedness and capabilities of health care systems globally.

RECOMMENDATIONS ON DIGITAL INTERVENTIONS FOR HEALTH SYSTEM STRENGTHENING¹

The rapid expansion of mobile phone use in LMICs, along with digital literacy improvements, have allowed for the application of mobile health (mHealth) services, which refers to the practice of medicine and public health supported by mobile devices. This document focuses primarily on mHealth interventions to ensure broad relevancy across various contexts and provide a structured evidence base to maximize the return on investment.

Recommendations include digital interventions in various domains, including birth and death notifications, stock and commodity notifications, patient-to-provider and provider-to-provider telemedicine, patient status tracking, targeted patient communication, and decision/educational support for providers.

The document stresses the importance of aligning digital health strategies with local health priorities, existing digital infrastructure, and digital health readiness. Implementers need to work with local stakeholders to understand what technologies they

want to work with and where they can best lead to efficiency and health gains.

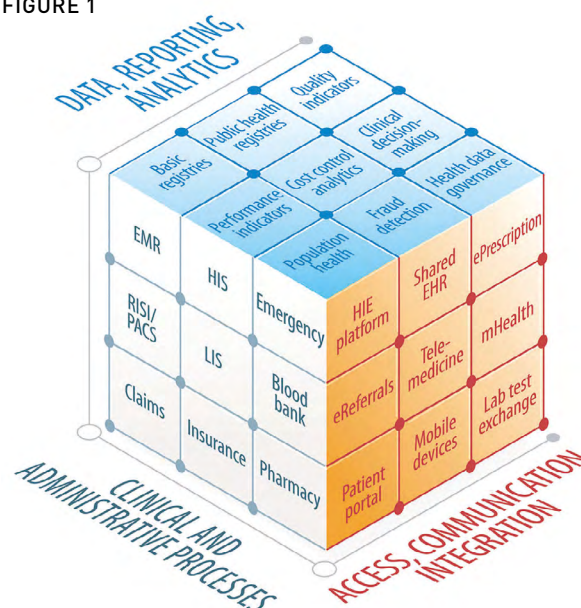
Global Facts²

- Digital health challenges persist in LMICs with lack of resources, low digital literacy, and high annual maintenance costs.
- In the past 10 years, over \$4 billion has been invested into digital health by the World Bank. The majority has been spent on health information systems, but in future should aim to foster digital health ecosystems.
- More research and clinical trials on digital health in LMIC settings is required, as 75% of studies have been conducted in high income countries.
- It is important to consider the role of the private sector in digital health, as their role is both essential and complex.

DIGITAL-IN-HEALTH – UNLOCKING THE VALUE FOR EVERYONE³

The Digital-in-Health approach developed by the World Bank suggests that digital technology should be fully integrated within the continuum of care, rather than merely being a side feature of health systems. In this vision, digital health becomes indistinguishable from

FIGURE 1



¹ [The World Health Organization \(2019\). Recommendations on Digital Interventions for Health System Strengthening.](#)

² [The World Bank \(2023\). Digital-in-Health: Unlocking Value for Everyone.](#)

³ [The World Bank \(2023\). Digital-in-Health: Unlocking Value for Everyone.](#)

general health care as it improves capacities and interconnectedness between all levels of care. Three areas that health system delivery can be improved by digital technology and data are illustrated in Figure 1.

The document is action oriented and emphasizes the importance of public-private partnerships in this arena, while providing five strategic pillars and ten recommendations. These are designed to aid governments and stakeholders in digital health developments that ensure equitable outcomes and fiscal sustainability. LMICs are at an important point now where their health system development can incorporate digital health features early, but a measured approach is required to realize the full benefits. However, it is important to consider the digital maturity context for each country where implementation is planned.

THE ROLE OF ARTIFICIAL INTELLIGENCE IN SEXUAL AND REPRODUCTIVE HEALTH AND RIGHTS⁴

AI has the potential to improve access to SRHR services, however it does raise concerns over safety, effectiveness and equity. This document describes how AI can be applied to health information delivery, education, screening, diagnosis, treatment planning, personal health monitoring, and health system management. Some key use cases for SRHR are uses in medical imaging screening, the optimization anti-retroviral treatments and IVF therapies.

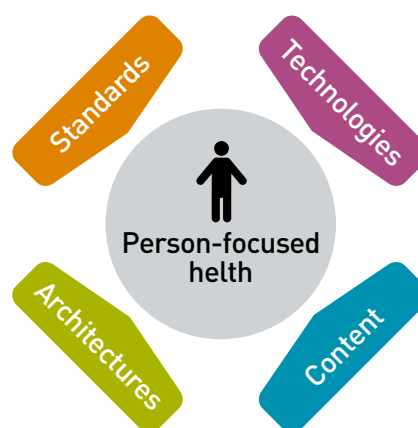
The implementation of artificial intelligence (AI) systems raises significant ethical and legal concerns that demand careful consideration. The protection of patient data and the prevention of discrimination due to misinformation and bias in the data used to train the AI model needs to be given special attention.

To combat these challenges within SRHR and AI, the WHO recommends revisiting data protection regulations, ensuring that inclusivity in data sets, and establishing collaborative mechanisms to fight misinformation.

A REMEDY FOR GLOBAL DIGITAL HEALTH TRANSFORMATION⁵

The digital health landscape is traditionally project centric, leading to fragmented data and a lack of interoperability across different systems and technologies. This leads to significant wasted resources and developmental inertia in digital health progress. To remedy these challenges, a 'full-STAC'⁶ approach with an open nature has been suggested to reorient digital health towards patient outcomes, especially in resource constrained settings. In this context, "open" refers to the idea that digital health tools and resources should be designed in a way that allows for interoperability and collaboration meaning that different systems and platforms can communicate and share data easily (see Figure 2).

FIGURE 2



- **Open standards** to simplify processes for developers and allow for consistent data and decision-making logic.
- **Open technologies** such as software tools to collect, store, transmit or analyze data.
- **Open architecture** to specify how complex health systems should be digitally interconnected.
- **Open content** that describes clinical and digital guidelines to align processes across stakeholders.

⁴ [The World Health Organization \(2024\). The Role of Artificial Intelligence in Sexual and Reproductive Health and Rights.](#)

⁵ [Mehl, G.L., et al. \(2023\). A full-STAC remedy for global digital health transformation: open standards, technologies, architectures and content.](#)

⁶ Standards, Technologies, Architectures, and Content.