

Leverage data and digital technology

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The digital era provides a huge opportunity to innovate in the field of health and care. COVID-19 accelerated the need to re-engineer health systems and leverage the power of digital and Artificial Intelligence (AI) to make them become proactive, predictive and ultimately preventative.

Beside the collection and use of real-time data, digital technology provides an array of opportunities to transform the way health and care are delivered. Health systems can tap into the potential of digital even when no digital health information system or electronic health record system exists. Yet, for digital health solutions to reach scale and impact, they should be needs-driven, human-centered and developed iteratively – for and with end users. Importantly, they have to be tailored to the local context, use the available infrastructure, and integrated in the health ecosystem and workflows. Examples of digital solutions that can deploy without a highly mature digital health system include:

- Virtual care (telehealth) has proven vital during the COVID-19 pandemic, with several health systems making strides in its use. Telehealth can deliver a true paradigm shift for outpatient care, benefitting primary care services (provider-to-provider, bringing specialist advice into the core of care, at the frontline) through tools for group consultations, self-care, remote appointments and follow-up. It can also enable structured triage, optimize consultation times and even increase diagnosis accuracy by ensuring referral tests happen before appointments.
- Bluetooth-enabled devices or mobile camera-based blood pressure measurement can significantly accelerate hypertension detection and timely diagnosis. Such digital services can create access, streamline the CV risk screening outside the hospital in high-traffic venues across cities and appropriately funnel within the health system individuals who screened positive.
- On one side, digital tracker apps allow health professionals to monitor screening, diagnosis and treatment progress – enabling them to take decisions based on real-time information. On the other side, such digital assistants empower individuals to manage better their health through simple SMS, chat or voice messages, complemented by notifications for follow-up appointments and medication reminders.
- Online continuous medical education and distance learning through mobile devices and computers help train and upskill health professionals and their community partners.
- Social media platforms, including WhatsApp and Facebook, deliver health literacy through interactive content and mass chats, and can build the foundation for smart chatbot assistants that help in the triage of patients.

When the data collected through digital solutions and devices is made accessible and successfully integrated, it can serve as the ‘fuel’ for data-driven health system analytics and predictive models. Also, collecting data on the main interventions a city chooses as its CV population health approach is fundamental to monitoring both progress and impact.

Transitioning from paper-based data collection to digital collection through the implementation of digital health information systems (HIS) is critical to steer health policy with real-time data. Digitized HIS provide the

foundation to optimize operations and transform care systems into health systems that keep their populations healthy.

Findings from data analytics can lead to unbiased, evidence-based population health policy and actions that improve lives and transform health systems. AI models can highlight which interventions would generate the largest population health impact. They will not only map the determinants of health on an individual level but also help remove health inequalities by enabling policy makers to establish frameworks for data-informed decisions and innovation through novel HealthTech solutions and services.

The successful digitization of HIS is based on multiple prerequisites: a reliable broadband connection and infrastructure, strengthening data and digital skills of health workers and their managers, establishing a clear data strategy including interoperability standards, data privacy and security by design, governance models, regulations and processes. Whether it is a primary health center (PHC), a regional hospital or a specialized referral center, connectivity and interoperability, a digitally-savvy workforce and well-established standards and procedures are key to providing coordinated care across all levels of the health system. Ideally, digital health information systems should allow people to have full visibility and control of their own health data, so they can mindfully share it with health providers and researchers.

Accordion heading

Key interventions and indicators

Accordion Item

Key interventions (taking the example of hypertension as prime risk factor for CVD)

Accordion body

1. Create and implement a health data strategy to address the main health priorities and challenges for strengthening and transforming health systems. The strategy should outline a framework about people, technology and processes, encompassing the data lifecycle. It should explain which data is available, how it is and can be sourced and collected, where it is stored, and how it is secured, maintained and governed across both public and private sector health systems:
 - Establish digital health system governance models to define, steer and coordinate the strategic data and technology roadmap of health systems, decision-making mechanisms and intra-organizational ways of working
 - Update job descriptions and create new roles addressing health system digitalization
 - Digitize HIS to collect, store, manage, analyze and transmit health data across different services, and enable health system managers to use those real time data for better health planning and resource allocation. Aggregating and analyzing health data can identify trends and opportunities to improve population health actions and support evidence-based health policy
 - Include cardiovascular indicators in national HIS to enable the use of real-time data at all levels of the health system
 - Create a tactical roadmap for digital solutions and services enabling the data strategy goals
2. Leverage existing and new HealthTech solutions to address local health priorities and weaknesses:
 - Develop online continuous medical education to upskill and reskill health system managers and practitioners to a consistent standard, with the most up-to-date tools and practices
 - Leverage apps and connected interfaces to make screening and referral easy for non-traditional health players that offer detection of CV risk factors in the city, while increasing health literacy and patient engagement
 - Use digital solutions to empower patients by improving self-management through remote monitoring, care and treatment management, while allowing pharmacists to improve patient engagement and

medication adherence, e.g., through automatic prescription refills, medication or refill reminders, dissemination of health information

- Virtualize health services based on the existing infrastructure and end-user needs, whether to provide specialist advice to primary healthcare workers (provider-to-provider) by mobile phone or WhatsApp, detect patients earlier through interactive chatbots, or avoid face-to-face consultations (direct provider-to-patient)
- Leverage digital and AI technologies to enhance quality of care with clinical decision support and supervision tools for health professionals and their managers

Key performance indicators

Accordion body

The indicators below can come from a variety of sources (primary and secondary data collection, national or regional surveys and databases).

Digital solutions to address local health priorities and weaknesses in the health system response

- % of people identified at high CV risk at screening checkpoints in the city, who visit the health system for diagnosis and follow up
- % of primary health centers able to report the number of patients diagnosed with hypertension who achieve BP control within 3, 6, 12 months of care and % who maintain it for 1, 2 years, ...
- % of pharmacies in the city that are trained and equipped to contribute to patient education and engagement for lifelong hypertension treatment
- % of primary health providers offering provider-to-patient telehealth services

When digital is integrated throughout the health system and an interoperable health data/information system is available:

- Existing health data strategy
- # of months per year that a digital hypertension cascade data dashboard is completed for >80% of primary health centers
- % of health system managers that can analyze and use the HIS data for their budget allocation decisions/meetings

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Highlights

CARDIO approach – Leverage data and digital technology

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Additional external resources

Broadband Commission reports

- [Reimagining global health through artificial intelligence: The roadmap to AI maturity, Working Group on Digital and AI in Health, Broadband Commission for Sustainable Development, 2021](#)
- [The promise of digital health: Addressing non-communicable diseases to accelerate universal health](#)

coverage in LMICs, Working Group on Digital and AI in Health, Broadband Commission for Sustainable Development, 2019

- Digital health: A call for government leadership and cooperation between ICT and health: The promise of digital health, Working Group on Digital and AI in Health, Broadband Commission for Sustainable Development, 2018

Reference documents and literature

- Key success factors for scaling digital solutions: Best practices in scaling digital health in low and middle income countries. Globalization and Health 2018; 14:103 (2-8).
- eTIQH tool for supportive supervision in primary health centers by health system managers. Towards improved health service quality in Tanzania: appropriateness of an electronic tool to assess quality of primary healthcare. BMC Health Services Research, 2019, 19:55.
- WHO SCORE toolkit. 2021

Previous pillar: Policy reform

Governments should enforce strategies and reforms, taxation and incentive structures, to address the growing burden of cardiovascular disease.

Next pillar: Intersectoral collaboration

Public- and private-sector stakeholders from across society are all playing a role in fighting hypertension.

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