Health Data Digitalization in Africa:

Unlocking the potential

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Key messages

The state of health data digitalization (HDD) in Africa is varied: Well-established electronic health record (EHR) systems in the Region typically concentrate on particular diseases such as malaria, tuberculosis or HIV/AIDS. Most countries are in the early stages of developing national digital health data systems.

Digital health interventions (DHIs) in Africa lack scale and sustainability: Extreme fragmentation of DHIs hinders the development of holistic systems. Investments have been made in pilot projects that are rarely scaled up. A clear methodological approach with an inclusive vision, policy, and strategy is required.

Key enabling factors for HDD exist: These include the implementation of DHI and Health Information Exchange (HIE) regulations, the demographic potential of a large, young population that uses smartphones, the presence of an active digital economy, and access to funding opportunities.

Additional efforts are needed to support HDD: For example, promoting a digital culture in the health sector, fostering digital skill and career development for health care professionals, further developing the ICT infrastructure and Internet penetration, and implementing standardized project management approaches when setting up digital health data systems.

Intersectoral collaboration is essential: Governments, international organizations, health care providers, and technology partners need to address HDD challenges relating to data security, privacy, access equity and ownership; system interoperability; digital skills development; and resource mobilization.

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HDD regulatory frameworks are required to harness the potential of the technology: Artificial intelligence (AI) and machine learning (ML) offer enormous possibilities for the use of health data. To ensure their safe and ethical application it is imperative to establish a solid national and regional regulatory framework.

Opportunities exist to support the expansion of HDD in Africa: The African Digital Health Platform (DHP) and the global Health Data Collaborative (HDC) support the fostering of a digital landscape. Countries can also explore leveraging HDD technologies that emerged out of the COVID-19 pandemic.

Re-engineering health systems with expanded HDD could improve the efficiency of health care service delivery: By increasing the adoption of DHIs, African health systems could achieve up to 15% in efficiency gains by 2030 and use these savings to enhance access to health care.

Executive summary

Opportunities

Health data digitalization (HDD) has been promoted in Africa to improve the quality of health services and enhance the decision-making process within the health system and beyond. It allows efficient and timely entry and storage of relevant health data to ensure that their real-time monitoring and analysis are used to make evidence-based decisions. HDD can give health professionals and administrators easier access to historical and current patient data and enable them to analyse such data to make more informed decisions. This data-driven approach helps health professionals choose appropriate treatments and supports policy-makers in designing impactful health policies.

Challenges

Fragmentation of the health system, in general, and of the health information system (HIS), in particular, has been one of the major problems in improving health services in Africa. This is compounded by a lack of data standards, persistent infrastructure challenges, and gaps in data literacy and digital skills of the health workforce. While HDD tends to appear as a viable solution, many uncertainties persist regarding its implementation, mainly linked to the slow progress of African countries in building an enabling environment for a fully digitalized health data system.

Impact

The impact of HDD on the health system is profound and multifaceted. It improves the quality, efficiency, and accessibility of health care services, supports data-driven decision-making, and empowers patients to take an active role in their health. However, weak or incomplete digitalized systems bring challenges related to data security and privacy and the need for workforce training and infrastructure development. Effective policies and governance are crucial in harnessing the full potential of digital health to strengthen the health systems' pillars.

The Region's level of HDD differs greatly. The well-established electronic health record (EHR) systems in Africa frequently concentrate on treating specific illnesses like HIV/AIDS, tuberculosis or malaria. The majority of countries are still developing their national health information systems (NHISs). Overall, Africa's HDD is poorly institutionalized and not sustainable enough to be supported by inclusive policies, strategies, or a defined scientific approach. One of the challenges in establishing holistic systems is the extreme fragmentation of interventions, with investments made primarily in pilot initiatives that are rarely scaled up.

Response

Efforts are being made to address the challenges associated with HDD to facilitate better management of health threats in Africa. These efforts include the introduction of capacity-building programmes, infrastructure development initiatives, policy and regulatory reforms, and public-private partnerships (PPPs). Much remains to be done at all levels. With countries at different stages of development, targeted strategies must be implemented and prioritized to deal with the different challenges.

Conclusion

While the challenges are significant, HDD in Africa continues to grow as the Region recognizes the potential benefits of improved health data management, accessibility, and use. When fully optimized and functional, integrated digital solutions provide opportunities to impact the Sustainable Development Goals (SDGs) positively. The growth of ICTs in Africa, the Internet's regional penetration, and the ongoing development of regional frameworks for HDD highlight the potential for the successful implementation of HDD in Africa. However, this requires fostering a digital culture among public health specialists, creating technology frameworks, and implementing standardized project management approaches when establishing digital health data systems. Furthermore, overcoming the challenges to HDD will require a coordinated effort involving governments, health care organizations, international partners and the private sector.

Policy implications

It is now well established that data insufficiency hinders effective decision-making on resource allocation to improve health and help people live longer, healthier, and more productive lives. According to evidence, HDD has proven application in improving the production of and access to quality health data and, therefore, in improving health systems and the health of populations. In addition, as demonstrated by its major contribution to containing the global COVID-19 crisis, HDD enables better preparation, planning, and response to major public health crises such as epidemics and pandemics. Innovative and effective HDD initiatives, which often are on a small scale, are increasingly being successfully implemented in Africa. However, their progress and scaling up are slow owing to challenges related to their implementation or specific technical and environmental requirements relating to their development process and the level of compliance of African countries with these specificities. Advancing HDD in Africa will require addressing the challenges faced by the fast-growing digital health environment in the Region and will include increasing sustainable investments in the digitalization of health to achieve the following goals:

Establish regulatory frameworks

- Develop intersectoral policies that clearly define the roles and responsibilities for health data governance and stewardship within each sector, ensuring accountability for data management.
- Consider compliance with national and international standards, including compliance with data protection, security regulations, and ethics.
- Build a secure and seamless HIE system that allows health professionals to share health data securely while ensuring their privacy.
- Establish interoperability standards and regulations that ensure different health system entities can manage and exchange data.

Strengthen ICT infrastructure

- Prioritize ensuring of reliability of Internet connectivity and electricity, especially in underserved and rural areas.
- Provide adequate equipment and digital solutions at all levels of the health system.
- Invest in data storage capabilities and cybersecurity measures.

Build health care worker capacity

- Develop a human resource training programme for HISs focusing on how to use digital health tools, EHRs, and HDD.
- Integrate classifications for digital health data jobs and define a career profile in health sector human resource plans.

Encourage collaboration and partnership

- Foster partnerships among governments, nongovernmental organizations, international organizations and private entities.
- Develop common investment plans to strengthen HISs, including harmonized HDD as already initiated by the HDC.

Promote research and development

- Replicate and scale up successful HDD initiatives and projects.
- Conduct an evidence-based review of the current state of HDD in Africa.

Fund digital health development

- Develop a diversified funding strategy that reduces dependence on specific donors.
- Promote a more inclusive approach to funding digital health initiatives.
- Establish a road map for digital health sovereignty, enabling country governments to decide how to procure and manage their digital health initiatives.

About AHOP

The African Health Observatory - Platform on Health Systems and Policies (AHOP) is a regional partnership that promotes evidence-informed policy-making. AHOP is hosted by the WHO Regional Office for Africa through the integrated African Health Observatory. National Centres include Addis Ababa University, Ethiopia; KEMRI Wellcome Trust, Kenya; the Health Policy Research Group, University of Nigeria; the University of Rwanda; and Institut Pasteur de Dakar, Senegal. AHOP draws on support from the European Observatory on Health Systems and Policies (EURO-OBS), the London School of Economics and Political Science (LSE), and the Bill & Melinda Gates Foundation (BMGF).

AHOP policy briefs

AHOP policy briefs are one of a suite of outputs produced by the platform. They aim to capture current concepts, experiences, and solutions that are of importance to health policymaking within the African region, often applying a comparative lens. All undergo a formal and rigorous peer review process.

Further information

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