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& Global Health



Wilton Park



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Report

Digital health in Africa: leadership and coordination

Monday 16 – Wednesday 18 October 2017 | WP1571

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Executive summary

Digital innovations have already transformed the way people interact and communicate. In Africa, the use of digital technology continues to grow rapidly, with roughly 170 million Internet users. With more and more people joining via computers and mobile devices, a huge opportunity has emerged for technology to influence global health. Digital health encompasses technologies that enable better collection and sharing of information, improved quality and reach of health service delivery, and better decision-making by governments, health workers, and individuals. It can support training and supervision of health workers, even in remote areas. Digital technology therefore offers significant opportunities to transform health outcomes in Africa and thus has a critical part to play in achieving Universal Health Coverage and health-related Sustainable Development Goals (SDGs).

African government leaders play a vital role in developing national digital health systems. Strong governance and leadership is foundational to developing, costing, and implementing a national digital health strategy. Government leadership is also indispensable in responding to the ongoing challenges of fragmentation in digital health investments, limited data interoperability capacity within and between countries, and the absence of legislation and policies that promote digital health systems.

Great progress has been made - WHO reports that 73 of 116 of its member states have national digital health plans in place. Yet many of these plans are still to be costed and implemented. The [Broadband Commission Digital Health Report](#) suggests that countries need stronger government leadership, more effective governance structures and improved cooperation and coordination between Ministries of Health and information and communication technologies (ICT). Furthermore, successful implementation of national digital health strategies depends on all stakeholders aligning to government plans and on donors prioritising their investments in a coordinated way¹.

The aim of the Wilton Park meeting was to facilitate conversation on how best to strengthen high-level government leadership for digital health. Participants were invited to explore, through country and regional examples, the important role

¹ National Academies report May 2017 - <http://nationalacademies.org/hmd/reports/2017/global-health-and-the-future-role-of-the-united-states.aspx>

government leaders can play in developing sustainable national digital health systems. Discussions also focused on the need to move to a more systems-based approach to ensure that the foundational digital building blocks are in place, the role of partners to support governments to develop, cost and implement national and regional strategies, and the imperative for donors to coordinate and align with those strategies and co-invest for maximum impact.

The African Alliance of Digital Health Networks was ‘soft’ launched at the meeting ahead of a formal launch in Africa in 2018. Intended to help facilitate the development of in-country tech-savvy and digitally-literate leaders, the African Alliance will provide a platform to cultivate the human capacity needed to develop strong national digital health systems. It will leverage the strengths of local, national, and regional networks that already exist in-country through multi-platform trainings; facilitate peer-learning; and coordinate with the Ministries of Health and Ministries of ICT to develop digital health experts and champions through fellowship programmes and other regional activities.

Key points

- **Political buy-in at the highest level is critical** for the development and implementation of national and regional digital health strategies. Effective governance structures are needed to support coordination between Ministries of Health and ICT and other key stakeholders. These partnerships can be supported by Memorandums of Understanding (MOU) between Ministries to establish a common vision and the necessary roles and responsibilities to achieve it.
- **Support is needed to realise the promise of regional digital health roadmaps.** Regional digital roadmaps have the advantage of being better able to withstand political changes at a national level and need coordinated support to realise their promise. Efforts such as Digital REACH, which brings together governments of the East African Community (EAC) countries, the private sector, donors, and other key partners to implement a strategic regional digital health programme, can serve as an example for other regions.
- **A systems thinking approach is vital.** The digital health sector needs to move from an apps and disease programmes-based approach to a systems thinking approach. Systems thinking will ensure the products are interoperable, and are not duplicative with existing in-country systems. This will reduce inefficiencies and help to ensure that what is developed will integrate smoothly into the national health system. As a global community, stakeholders need to help drive systems change and digital architecture design; a common framework is needed to help countries move towards the systems approach, with supporting tools to guide government and partner dialogue.
- **Partners need to align around a common agenda for measurement and accountability.** The [Health Data Collaborative](#) (HDC), co-chaired by the World Health Organization, is actively helping to align financial and technical resources for more cost-effective measurement and accountability. An inclusive partnership of international agencies, governments, philanthropies, donors and academics, HDC is focused on achieving SDG 3 at the country level with the common aim of improving health data.
- **Donors need to act differently.** As long as donors continue to fund pilots and programmes that do not align with or involve local governments, fragmentation and difficulties sharing data will continue to occur. Donors need to change this

existing failed strategy to a more coordinated approach that focuses on co-investment in national and regional digital health strategies. This is an inflection point; donors acknowledged their role in contributing to fragmentation and that now is the time to consider developing a set of principles for investment that all donors can align with going forward.

- **There is a role for the private sector investor, and there is a need to understand the different drivers of private sector investment.** The value proposition for digital health must be appropriately packaged for a specific type of private sector investor in order to attract effective, sustainable partnerships with lasting results. Part of this requires being able to describe outcomes in clear language to demonstrate returns on investment.
- **Untapped potential lies in digital training for community health workers.** The [Community Health Academy](#) will co-develop a digital education platform with Ministries of Health that will help policymakers and managers to navigate the challenges facing community health workers, improving community health systems and building digital literacy in the workforce.
- **Regional networks such as the [African Alliance](#) have a key role in building digital capacity in the region.** They deepen country ownership, identifying and nurturing champions within governments, and can provide recommendations that are relevant at the country level.

The report provides further detail about each of the key points highlighted above.

1. Why high level government commitment matters

Mainstreaming digital information systems across the health sector is an inherently political process, requiring strong government leadership and supporting governance systems.

The experiences of Uganda and Tanzania suggest that sustained high level leadership is the most important factor in developing and implementing integrated digital health systems at a national level. In Uganda, the President has championed a digital health strategy by establishing a Steering Committee chaired by the Permanent Secretary, and a Parliamentary Committee on Technology and Information which provides oversight of the Ministries and technical working groups. Similarly, Tanzania's success in working with partners to design a roadmap for the implementation of national digital health system rested upon "good will from political leaders at all levels, including the President himself". In both countries investment and oversight at the highest level enabled better cooperation between health and ICT, is leading to a systems based approach and common IT architecture, and serves as an example to align the donor community behind government priorities.

Case Study: Tanzania's Digital Health Roadmap

The government of Tanzania and its partners drafted a set of 17 priority investment recommendations with specific activities, costs, and timelines. These recommendations leverage existing government strategies and priorities, support work that is already happening, embody accepted principles, and have the potential to jump start systemic change in data use practices. Already more than 14,000 health facilities have implemented electronic management of resources – multiple data registries are electronic and have been centralised.

The roadmap defined common standards for a number of factors necessary to establish a digital ecosystem:

- Leadership and governance
- Strategy and investment
- Legislation policy and compliance
- Workforce management
- Data standards and interoperability
- Infrastructure
- Services and applications

These elements have been brought together under an eHealth governance mechanism that is integrated into current governance structures at regional, district, and central level. As in Uganda, an E-health steering committee (with Ministry of Health leaders and experts from health and the ICT sectors) is mandated to oversee the implementation of the strategy through technical working groups. The process has resulted in a number of clear and costed investment recommendations. If implemented, these recommendations will form a common architecture embedded in the national health system.

Tanzania's roadmap shows the importance of conducting a gap analysis to understand the disparity between the services that need to be provided and the requirements. The government was guided by the roadmap to answer a number of questions, including: What decisions have to be made and by whom? What information needs to be collected? What actions need to take place? The gap analysis considers data functionality, efficacy, usability, effectiveness, and optimisation when determining how the software, frameworks, and standards can be built into existing systems.

The principles that emerged over the course of the meeting are that national digital roadmaps need to:

- Have strong governance: be led and mandated by governments with high-level political champions, be multi-sectoral, and beyond the public sector (including users, private sector, NGOs, faith-based health providers if appropriate etc); be transparent, enabling peer learning;
- Create a legally-binding roadmap, providing frameworks for what needs to be done and outlining financing needs;
- Build up capacities within government to ensure they can provide the enabling policy environment, standards and regulations to guide investment;
- Have strong partnerships between Ministries of Health and ICT which can be supported by MOUs between them to establish a common vision and the necessary roles and responsibilities to achieve it.

Finessing the narrative and case for investment in digital health is especially important given the competing priorities which governments have to respond to within health, such as

investment in life-saving medicines, health workforce development and other demands. Communicating quick-wins and potential return on investment and cost efficiencies help to ignite government interest. For example, the National Hospital in Tanzania moved from cash remittances to mobile money payments for health services and thereby increased revenue collection by more than 400%. In addition, digitising their record-keeping led to a substantial reduction in personal files being lost.

Having political champions at Cabinet level and across the Health and Information Technology sectors increases opportunities to establish legally binding, financed, and signed frameworks. In fluid political cycles, where individual advocates may tend to dominate, this is paramount to long-term funding and implementation of digital health programmes.

2. The potential of regional digital roadmaps

Regional digital health roadmaps can also play a key role in ensuring long-term sustainability of digital health approaches, binding national governments to region-wide frameworks and sharing best practice.

Regional roadmaps also offer economic efficiencies through economies of scale, improved health systems, by providing continuity of care throughout the region and sharing data, and better implementation, by leveraging evidence to design interventions. Regional governance can also lead to harmonising standards and policies to better monitor the health status of populations moving across borders.

In recognition of the benefits of regional governance, the [East African Health Research Commission](#) hosted a meeting in Kampala in September 2017 to develop a realistic plan for regional collaboration, resulting in the Digital REACH – a draft regional roadmap. This provides a common vision, a plan for regional collaboration, and a platform for donor and private sector discussions and investment. Driven by Vision 2028 for 'interconnected health systems for a healthy and prosperous Africa' the partners agreed on guidance for the next phase of planning digital roadmaps.

Digital REACH recognises that storing data outside national boundaries is an ongoing challenge. During the Ebola crises, infrastructure was not in place, resulting in the Ministries of Health negotiating special dispensation to store data outside countries. Investment in regional cloud hosting, such as an East Africa Open Science Cloud for Health, would allow continuous and ongoing analysis of health science and improved access to data region-wide.

In 2012 the **West Africa Health Organization** planned to implement a regional digital health strategy; the report on Health Information Policy and Strategies in the ECOWAS Region was developed to support the vision of achieving "quality health information, easily accessible and used at all levels for policy formulation and informed decision-making." However, lack of leadership, a fragmented policy environment, and poor momentum stalled progress. The recent success of Digital REACH and the formation of the African Alliance have provided a new opportunity to rekindle a West African regional digital health strategy.

3. Moving towards systems thinking approaches and supporting common architecture

For many years vertical and uncoordinated investments have been made into digital health infrastructure. This has promoted the collection of data in fragmented and disconnected systems and duplicative resources have been spent on building software. The scale of the problem has become so great that countries such as Uganda put a moratorium in place on the deployment of new digital health tools that did not align with a common architecture.

Creating a common IT architecture across the health service enables a clear way for data to be shared across systems, avoids duplicative software development and redundant data collection, and provides a blueprint around which a Ministry of Health can plan its future

investments and donors can align.

Standard elements of a common platform include:

- a high level co-ordination mechanism and buy-in across ministries;
- common objectives and agreed standards and definitions of data collection;
- a common vision and generalised framework;
- a technical inventory of systems;
- a common data platform;
- decentralised services and operations; and
- integrated platforms

A common architecture needs to be developed, led and owned by the government. This is 'eminently doable' - a small cross-government team plus partners can drive this. Cost benefits need to be identified and communicated to advocate for and attract the necessary domestic and external investment. Systems building needs specific funding, and such funding should be built into bids for all digital health programmes. Human capacity also needs to be built up in order for a country to develop its common architecture of systems across the health sector. The WHO and International Telecommunication Union are now working together on building capacity to support governments.

4. Building partnerships to support systems approaches

Systems-thinking should be the foundation block for digital health approaches in future. Countries need to own and lead their own systems development, but many African countries may need a wide range of partners to support them including local and international private sector telecom and technology companies, existing donors and potential private investors.

In many African countries poor internet connectivity and high connection costs are thwarting progress. National regulation of local telecom companies could be strengthened. Government procurement of telecoms, hardware and software from local companies could make investment affordable and sustainable.

Data hosting is another key issue to be considered in building a systems approach. Should a country choose a cloud based service managed in the USA or UK say, rather than in Africa? Investment in regional cloud hosting, such as an East Africa Open Science Cloud for Health proposed by Digital REACH, would support the local economy whilst allowing continuous and ongoing analysis of health science. Zambia has established the Zambia Data Center, as constitutionally all data has to be hosted there, or at the Ministry of Health. In Mali, legislation stipulates that health data needs to stay in Mali. Yet, through donor funding approaches this has led to national data surveys being held in Washington.

The range of external partners interested in digital health in Africa, whether international agencies, governments, donors, philanthropic organisations, private sector investors and academics, need to align around a nationally owned agenda for digital health which has a systems-based approach.

They also need to support a common agenda for measurement and accountability with the shared aim of improving health data at the country level. It is estimated that \$1.5 billion is spent on health data, currently flowing through disparate projects and disease programmes. For example 128 health and health related data systems were counted in Tanzania, while in Ethiopia there are two disparate systems, driven by two funding streams, amounting to 27 million dollars of investment. These figures call for a rationalisation and multiple financing of disease-unique systems, apps and human resource systems. The [Health Data Collaborative](#) (HDC), co-chaired by the World Health Organization, is actively helping to align financial and technical resources for more cost-effective measurement and accountability.

5. Addressing donor fragmentation

Fragmentation around data collection is not the only challenge. To date, donors have not had a common conversation on how to make the best investments, or even to co-invest to avoid duplication and wasted costs. This has done little to encourage true ownership by governments with limited capacity to harmonise architecture. Increasingly, donors are recognising they have a responsibility to act differently, and to adopt a more coordinated approach to providing technical assistance to countries looking to design and implement roadmaps. Many donors see this moment as a potential turning-point, acknowledging their role in contributing to fragmentation, and the need to create a set of principles for investment. And as countries move towards technical roadmaps it becomes easier for donors to coordinate their financing strategies.

Donors also need to recognise their responsibilities around risk-taking and the burden of reporting requirements that they place on programmes. In order to innovate, it is sometimes necessary to fail; though failure is often at odds with donor investment approaches and reporting requirements. According to a recent assessment of the indicator reporting burden, some countries were requested to report on at least 900 health indicators. How then, does a supportive environment for innovation evolve that also meets donor reporting requirements? One approach is to refocus on measuring the health impacts of various interoperable technologies. If donor requirements shift to health impact measures this could sharpen accountability, without stifling innovation.

6. Working with private sector investors

The private sector has become more interested in digital health innovations in recent years. With governments often being the largest clients for many multinationals, the next decade is likely to see an exponential growth in government-private sector partnerships.

The private sector is not a homogenous body with a single defined 'ask' however; social venture capital, private equity, philanthropy, and multinationals all have different risk appetites. While governments need a strong evidence base and lower risk, entrepreneurs and risk takers may be more concerned with cost efficiencies.

Measuring the health impacts of digital systems creates greater accountability between service providers and users. It can also foster innovation. Just as the digital health community is stewarding a shift towards systems, so too there is a need to calculate return on investment. If the multi-trillion-dollar deficit on SDG 3 is to be reduced, a willingness to do things differently is essential.

7. Unlocking the potential of community health workers

There is an untapped potential for digital approaches to support community health workers (CHWs), through ensuring they have access to data to deliver better services, track and manage supplies, and monitor patient progress. Data driven processes can enable greater monitoring and support of health workers across the public health sector and digital tools also offer the potential for increased and high quality training of CHWs, especially those in hard to reach areas where training opportunities are scarce or non-existent.

Evidence suggests that employing and training CHWs in 30 proven health interventions, and doing this at scale, has the potential to save 20 million lives by 2030. To achieve this impact the real and competing demands on health care workers, many of whom are volunteers, needs to be addressed. Currently, many health care workers are over-burdened with family responsibilities, poor pay, and competing demands. They are poorly managed by administrators, who lack the data to target supplies and staff to areas that need them the most.

Digital solutions and programmes can help address some of these challenges. However, the focus needs to be on best human resource practice, using the technology as an enabler to support this. For example, it is estimated in some countries that health workers in general spend up to 33% of their time recording data, often using multiple formats, which

take them away from front line duties. It is understandable that asking them to adopt a new digital system may at first be viewed as an additional burden. Enabling CHWs to understand and witness the subsequent benefits from their initial data entry is critical, as is encouraging policy makers to consider adopting digital solutions instead of, rather than in addition to, paper based data collection and reporting.

Establishing incentives for CHWs to 'go digital' is another option, for example integrating electronic monitoring into pay and performance structures where this is applicable.

Indonesia's Thrive - Open Smart Register Platform, a digital registry system, shows the importance of creating incentives to go digital through pay and performance structures. Weak points are identified for each community worker, alongside failures to provide services or collect data. This data is inputted into algorithms that aggregate scores to track performance and alert other health care workers of gaps in services. Health care workers are then alerted if a patient in their area is missing a service, for example, a neonatal check-up, and rewarded if they respond. The algorithms create a chain for health workers to provide full, integrated services. Another solution, only possible through digital platforms, is to create a cadre of health workers that are responsible for monitoring and managing data alone.

Indonesia's experience also demonstrates that:

- basic demographic data is needed on health care workers in order to train them
- the digital platform Tarlac allowed targeted face to face training at the community level instead of blanket cascade training from the national level
- service delivery is improving because health worker competency can be tracked
- it is possible to determine when and where health service users are not accessing services.

Community Health Academy

To reinvent community health worker education for the digital age, Last Mile Health has launched the Community Health Academy (CHA). The CHA seeks to be a world-class, shared resource co-developed by and for Ministries of Health that is institutionalised within national and regional curricula and professional certification programmes. The Academy's platform also has the potential to integrate across countries' digital health systems and content will also be available for countries to access, re-use, adapt and translate for their respective contexts.

8. The role of regional digital health networks

Regional networks such as **The African Alliance of Digital Health Networks** ('the African Alliance') have a key role in building digital capacity, deepening country ownership, and identifying and nurturing champions within governments.

The **African Alliance** serves as an umbrella entity for existing digital health networks on the continent. It provides a platform to cultivate the human capacity needed to develop strong national digital health systems. Its goal is to ensure that countries have support to develop strong digital health systems and the human capacity necessary to support, maintain, and further innovate these systems. This includes developing and sharing methods to create incentive structures for high level and cross sectoral support, alongside supporting partners to develop messages which resonate with political and government leaders. As countries move towards building and implementing their national roadmaps the

“The meeting shined a spotlight on a remarkable opportunity propelled by African leaders and a donor community that is ready to respond. Never underestimate the power of an idea”.

African Alliance has a distinct role in identifying common bottlenecks and providing partners with contextually relevant recommendations. The African Alliance has established an Advisory Board (which had its first meeting at Wilton Park) which includes WHO, ITU, NORAD, USAID, PATH, the East African Health Research Commission and GBCHealth. It will be working closely with ITU and WHO Afro in 2018 to deliver two Digital Health Leadership regional workshops for up to 20 countries in East and West Africa.

As the African Alliance develops, it can learn lessons from the [Asia eHealth Information Network \(AeHIN\)](#). Created by WHO in 2012 to assist countries with their national e-health development, it has grown from seven passionate individuals in six Asian countries, to become an Alliance of 1,000 professionals in 25 countries, spanning professionals from Ministries of health, ICT, and Health Insurance agencies. While this model allows AeHIN to respond to country context, sustainability of the network remains a challenge.

Conclusions and next steps

- There are huge opportunities to use digital technology to support and strengthen weak healthcare services in Africa, improving health provision to achieve UHC and leave no-one behind.
- A systems approach is needed to build a national digital architecture, rather than a more piecemeal approach driven by the latest app or a disease programme.
- Donors and other investment partners should support streamlined, nationally owned systems, rather than continuing to contribute to the current fragmented system.
- Donor participants acknowledged the need for coordination and co-investment and made commitments to taking a more coordinated approach going forward.
- The launch of the African Alliance of Digital Health Networks resulted in pledges of support from conference participants and expressions of interest from at least nine countries, as well as commitment from various participants to join the African Alliance Board.

One of the clear messages from participants was that ‘business as usual’ is not working. A framework for change was proposed – to move from a project approach to one that embraces systems thinking; to coordinate investments in digital health and align these with government priorities; to build capacity across the African continent, drawing from proven approaches in Africa, South Asia and elsewhere, to create the next generation of digitally literate leaders, technology developers and health workforce.

A follow up report will be shared on the Wilton Park and Digital Square websites in 2018 featuring concrete examples of progress made since the conference, and highlighting what more needs to happen to move to a more harmonized, coordinated approach to investment in digital health systems.

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