CASE STUDY

Advancing Expertise in Health Data Governance

Lessons from the Ministries of Health in Kenya and Zanzibar

Authors

Acknowledgements

Karen Bett
Senior Policy Manager, Global
Partnership for Sustainable
Development Data

Muthoni Mugo
Monitoring, Evaluation, and Learning
Program Officer, Global Partnership
for Sustainable Development Data

Tracey Li
Senior Data Lead, D-tree

Abbas Wandella
Health Management Information
Systems (HMIS) Advisor, D-tree

**Reviewed by the Ministry of
Health Kenya and the Ministry
of Health Zanzibar.**

Advancing Expertise in Health Data Governance: Lessons from the Ministries of Health
in Kenya and Zanzibar

Summary

How can countries make the most of technology and data to build stronger health systems and create better health outcomes?

To explore this, the Global Partnership for Sustainable Development Data and D-tree facilitated a peer exchange between the governments of Kenya and Zanzibar. Both governments have digitally transformed their health systems in recent years and are prioritizing health data governance.

While many governments are leveraging technology and data to improve their health systems and deliver better healthcare outcomes, numerous challenges often prevent the data generated by digital health programs from being used effectively. The regulatory frameworks and data governance practices necessary to facilitate the effective, safe, and fair use of health data are often non-existent. Moreover, few opportunities exist for governments to increase their knowledge about data governance, especially on a practical level.

This country-level exchange allowed both governments to compare and share their experiences relating to their different regulatory environments and ongoing projects. It also helped lay the foundation for ongoing collaboration around how to make the best use of health data.

How did it work?

The exchange took place in Kenya over two days in June 2023, including participation from senior level Ministry of Health officials and technical staff. Discussions spanned legislation, data security, privacy, interoperability, and comparisons of the digital health priorities, strategies, and infrastructure of each country. The discussion was complemented by a visit to Kitengela Sub-County Hospital, the first health facility in Kenya to adopt the Afya KE platform and fully digitize all its health services.

"The speed and coordination exhibited by the Ministry of Health Kenya were impressive. The visit provided valuable insights and highlighted the importance of infrastructure and political will."

Mr. Khamis Bilal Ali, Health Coordinator, Zanzibar Ministry of Health

Key insights

By the end of the exchange, participants had gained valuable insights for advancing health data governance and data initiatives. Key lessons include:

- The crucial roles played by national and institutional infrastructure, frameworks, and regulations in driving and guiding digitization processes.

- The importance of government funding and political will in driving change.

- The significance of accountability and participation in data management.

Collaboration with external organizations and international agencies was identified as crucial for supporting successful implementation. Furthermore, data quality and management were highlighted as essential for effective healthcare outcomes, and empowering patients in data sharing was emphasized to enhance engagement. Sustainable government leadership and investment were also deemed vital for long-term impact.

What's next?

The exchange also set the stage for ongoing collaboration among the participants. Besides topics directly related to data governance, several items of high mutual interest related to the broader theme of digital health surfaced. As a result, participants proposed the creation of a community of practice to facilitate regular knowledge sharing between governments in East Africa.

This, together with a reciprocal visit where a Kenyan delegation can observe the progress of the Zanzibar Government in taking ownership of various digital health programs, is being developed. We hope that creating these spaces for governments to share their experiences and lessons with each other, and discuss the issues that are most relevant to them, will accelerate the progress of government-led digital health and data governance initiatives in East Africa.

> "The exchange allowed us to gain valuable insights into Zanzibar's progress in infrastructure development and change management. We were inspired by their achievements and motivated to accelerate our own efforts."

Dr. Joyce Wamicwe, Head of Policy and Research, Kenya Ministry of Health

Introduction

Technology is increasingly being harnessed to help solve some of humanity's biggest problems and accelerate progress towards the Sustainable Development Goals (SDGs). To ensure good health and wellbeing for all (SDG3), the potential of technology is being exploited to strengthen health systems and improve people's health outcomes, especially in locations where health systems are under-resourced and weak.

There is increasing demand from governments and funders to digitize paper-based systems, leverage telecommunications technology, and employ sophisticated data analytics that can radically improve the way healthcare is delivered. As a result, digital health programs are springing up in many locations, even where technology is otherwise scarce. The expanding adoption of digital health has resulted in increasing demand to use data from digital programs in research studies, analyses, and AI models, but the regulatory frameworks and data governance practices necessary to ensure that health data is used in an effective, safe, and fair manner have not kept up with the rate of technological development.

The World Health Organization is currently emphasizing the importance of health data governance – **"to harness the full potential of data for better health outcomes, data needs to be collected, shared and used effectively"** – and is encouraging governments to make improvements in this area as well as learn from each other. Meanwhile, the Transform Health Coalition[1] is advocating for the creation of a global health data governance framework to drive improvements in health data governance across the world.

At the country level, governments such as Kenya and Zanzibar have taken the initiative to improve health data governance within their own countries, creating frameworks that suit their specific needs, while their health systems undergo digital transformation.

Purpose of the peer exchange

Recognizing the potential value of learning among peers to accelerate progress in health data governance, the Global Partnership[2] and D-tree[3] partnered to facilitate a knowledge exchange between the Ministries of health from Kenya and Zanzibar. The exchange took place in Nairobi, Kenya over two days in June 2023 and included bilateral talks between the two Ministries, a multi-stakeholder

---

[1] Transform Health Coalition, https://transformhealthcoalition.org
[2] The Global Partnership promotes practical steps to create spaces for participation and inclusion in data governance, and strategies for building capacity to encourage leaders to adopt accountable data governance practices. Read more on the Global Partnership's approach to accountable data governance: https://www.data4sdgs.org/governing-data-benefit-people-decision-making-builds-trust-and-accountability
[3] D-tree is an international NGO that has been assisting Zanzibar's Ministry of Health (MOH Zanzibar) with digital health initiatives for over 10 years. Read more on D-tree's work on health data governance: https://www.d-tree.org/data-for-health-impact/

workshop on health data governance and a site visit to a Ministry of Health Kenya facility currently rolling out Kenya's first homegrown and government-led National Integrated Health Information System, Afya KE.

The key objectives of the peer exchange were:

1. To gain an understanding of the health data governance frameworks in both Kenya and Zanzibar, including policies and procedures for data management, data security, and data privacy, and how they are implemented in practice including the challenges experienced.
2. To explore strategies for promoting effective health data governance and data management, including stakeholder engagement and capacity building, and how they have been implemented in both Kenya and Zanzibar.
3. To establish a network of contacts and ongoing communication channels between the Ministries of Health in Kenya and Zanzibar for continued collaboration and mutual learning on health data governance.

This exchange influenced knowledge and practice. It was an opportunity to exchange on the challenges, but also to foster cross-government collaboration. This case study documents the key areas of discussion outlining best practices, challenges, and lessons. It also highlights the next steps for both Kenya and Zanzibar to be carried out individually and in collaboration with each other.

A. Legal and institutional foundations for health data governance

Digitization is a bedrock. With so many information systems and digitization systems in the country, these systems need to talk to one another. That is the importance of interoperability.

Dr. Bernard Langat, Head of the Directorate of Digital Health, Information, Policy, and Research at the Ministry of Health

Kenya's digital health priorities and institutional arrangements

As an overarching policy enabler, Kenya passed the Data Protection Act in 2019. This laid the foundation for regulating the processing of personal data, and that this regulation is guided by a set of key principles. The Data Protection Act 2019 also establishes the legal and institutional mechanisms to protect personal data and

provides data subjects with the rights and remedies to protect their personal data from processing which may not be in accordance with the Act.

Kenya's institutional arrangements and digital health priorities focus on the current government's bottom-up economic transformation agenda, which prioritizes digitization and automation of government services as well as the prioritization of building a healthy nation and ensuring access to essential health services.[4]

At the forefront of Kenya's digital health landscape is the Kenya Health Information Exchange (HIE) Platform, which serves as a central platform for integrated health information and data exchange. This allows healthcare providers and institutions to securely capture, store, analyze, access, and share patient information as well as support client self-care digital tools. The HIE is a vital component for managing the client registry, accessing health records, and standardizing the Kenya health master facility list and other registries within the health sector. This facilitates coordinated care and improves health service delivery by enabling real-time access to critical health data.

Digital health plays a crucial role in supporting access to healthcare by improving healthcare delivery and access to health information i.e., Universal Health Coverage (UHC). UHC is guided by four pillars:

1. Human resources for health
2. Commodity circulation
3. Healthcare financing
4. Digital health

By the time of this peer exchange, the Government of Kenya was in the final stages of drafting the Digital Health Bill and subsequently taking it through a consultative process before enactment in Parliament. On October 19th, Kenya's President Dr. William Ruto assented to law four bills collectively referred to as the UHC Bills, namely: Primary Health Care Bill, 2023; Digital Health Bill, 2023; Facilities Improvement Financing Bill, 2023; and the Social Health Insurance Bill, 2023.

The Digital Health Bill will provide a legal framework for implementing digital health initiatives and govern the use of health data and information technology in the healthcare sector. The bill aims to promote the adoption of digital health solutions and ensure data security and privacy.

Digital and data transformation for health is disruptive and therefore needs thoughtful, responsible, ethical, and lawful guardrails to ensure that they do no harm, and no one is left behind.

Steve Wanyee, Intellisoft Kenya

---

[4] https://manifesto.delivery.go.ke/

The Data Protection Act also provided regulations for data holders, including government ministries, departments, and agencies to further develop data governance frameworks to guide their specific sectors. The Ministry of Health, in this regard, is also in the near final stages of finalizing its health data governance framework in compliance with the Data Protection Act 2019 and as a key policy document to contribute to the implementation of the Digital Health Act.

To institutionalize and coordinate health data governance in the country, the draft health data governance framework proposes to establish a Health Data Governance Technical Working Group under the Health Informatics, Research, M&E interagency coordinating committee.

Good practice in action

Afya KE

Afya KE is a government-led health digitization blueprint. Afya KE focuses on moving from paper systems to digital systems, and from local to global information systems. The Afya KE system is intended to reduce human resource needs and improve work efficiency in all hospitals and dispensaries. So far, Afya KE has rolled out in Kitengela sub-county hospitals with advanced plans to scale to Nairobi and Murang'a counties.

eCHIS

Kenya has made great progress in digitizing its health information systems. A case in point is the successful development and deployment of a government owned and led national Electronic Community Health Information System (eCHIS), which stands as a testament to the government's progress in digitization efforts. eCHIS enables community health workers to register households and connect them with health facilities. This system enhances community-level healthcare and helps in monitoring health indicators and disease outbreaks.[5] eCHIS will be integrated with Afya KE for seamless referral reporting.

Zanzibar's digital health priorities and institutional arrangements

Zanzibar has also made great advancements in implementing its own digitization strategy. While it has not fully put in place all the legal frameworks, it has put particular focus on best practices and practical implementation. First, Zanzibar has prioritized the essential infrastructure required for successful digital health initiatives. This included the establishment of a government-led data center and installation of fiber connectivity, such as has been done between the two islands of Unguja and Pemba.

---

[5] Read more on the journey to eCHIS
https://livinggoods.org/media/after-a-successful-pilot-kenya-echis-to-be-scaled-countrywide/#:~:text=Living%20Goods%20was%20the%20MOH's,Health%20Toolkit%20(CHT)%20platform.&text=After%20the%20successful%20pilot%2C%20the,95%2C000%20CHWs%20across%20the%20country and https://medic.org/stories/empowering-digitized-community-health-in-kenya-medics-journey-of-impact-and-growth/

Zanzibar has also emphasized its efforts in setting up facility-level infrastructure, including Local Area Network (LAN) cabling, power supply, and electricity. These infrastructure provisions aim to support digitization, and they have been implemented through various means such as connecting facilities to the main power grid, utilizing solar power, and incorporating alternative methods like generators and wind energy. These measures have played a pivotal role in enabling Zanzibar's digital transformation and digitization, and in facilitating efficient data transmission while ensuring data security.

In addition to putting in place the right infrastructure to facilitate digitization, Zanzibar has a homegrown government-led and owned health system – the ZAM EMR (Electronic Medical Record) system. ZAM EMR covers the national referral hospital, seven out of 11 district hospitals and one out of 168 health centers. The ZAM EMR is instrumental in managing health records and standardizing the health facility list, contributing to improved healthcare services.

Zanzibar's journey to digitization exemplifies how vision, prioritization of essential infrastructure, and an EMR system can pave the way for remarkable advancements in healthcare, setting a shining example of best practices in the digital health landscape.

Mohamed Habib Al-Mafazy, Head of ICT, MOH Zanzibar

To institutionalize the digital transition, Zanzibar has ensured that change management was a success by focusing on the importance of aligning digitization efforts with the needs of healthcare workers. From the onset, Zanzibar recognized that creating user incentives is crucial for the success of digital systems and therefore prioritized training healthcare staff in computer literacy, efficient record-keeping, and effective management of health information systems. By actively involving healthcare workers, Zanzibar aims to garner their support and participation in driving digital health initiatives.

By aligning the system with the needs of healthcare workers, we can foster their active participation and support for digital health initiatives.

Abbas Wandella, D-tree

Good practice in action

Bolstering sustainability
Zanzibar presently provides free healthcare to its citizens, but as resources are very limited not everyone currently receives high quality care. To improve care quality and the sustainability of the health system, there are efforts to shift towards a paid health insurance model, with a level of free care still being available to everyone. This transition is designed to bolster sustainability and strengthen ongoing digital health initiatives. Furthermore, it will aid in resource mobilization, promote equitable services, and ultimately enhance Universal Health Coverage in Zanzibar by ensuring that everyone has access to high quality services.

Jamii ni Afya
Since September 2021, Zanzibar's digital community health program, Jamii ni Afya[6], has been fully scaled up to cover the whole of Zanzibar. A cadre of more than 2,000 trained and digitally equipped community health volunteers (CHVs) provide essential health information and health checks to every community in Zanzibar. The data collected in the Jamii ni Afya program is currently being integrated into the government's central DHIS2 system, enabling the data to be used at both the district and national levels.

Through digital systems such as EMR and Jamii ni Afya, we witness data collection empowerment, data quality improvement, and data utilization maximization for programmatic decision-making. These mechanisms foster strong data practices and reinforce effective information management, enabling efficient and informed decision-making processes.

Mohamed Habib Al-Mafazy, Head of ICT, MOH Zanzibar

In more detail, the legal and institutional foundations for both Ministries are outlined in table 1.

---

[6] Jamii ni Afya, https://www.d-tree.org/jamii-ni-afya/

Table 1: Legal foundations and institutional landscape of health data governance in Kenya and Zanzibar

Key areas	Kenya	Zanzibar
Key legislation and directives	The Health Act 2017[7] serves as the bedrock of Kenya's health sector, facilitating improved healthcare delivery and client health outcomes. Notably, Sections 103, 104, and 105 of this Act pertain to e-health delivery, e-legislation on e-health, and health information systems, respectively. The just passed Digital Health Act aims to establish institutional arrangements for a national e-health ecosystem, encompassing public and private institutions, and provide a legal framework for data governance, ensuring data security and standards.	Zanzibar has embarked on a transformative journey to leverage digital technology in its health system. While Zanzibar does not have specific legislation on digital health yet, in 2020, Zanzibar introduced its first Digital Health Strategy[8], with a vision to enhance the delivery of safer, equitable, accessible, efficient, and effective health services across all levels of the Zanzibar health system. This is significantly increasing the production of health data and prompted the Ministry of Health (MOH) to enhance data governance and promote responsible data use for informed decision-making.
Data security and privacy	The Data Protection Act of 2019[9] brought crucial advancements in acknowledging data's significance, including health data. This legislation establishes the Office of the Data Protection Commissioner, outlines data subjects' rights, mandates privacy by design, and necessitates data protection officers. Non-compliance penalties and territorial scope bolster data security safeguards.	In 2022, MOH Zanzibar developed its inaugural Data Protection and Sharing Framework for health data, with support from DANIDA. This framework lays the groundwork for addressing data governance challenges, including privacy, security, and equity concerns. It sets the stage for establishing robust policies and guidelines for data management and sharing within the health system. With the support of D-tree, MOH is operationalizing the framework to turn the policies into practical actions.
Promoting data sharing and interoperability	The Kenya Health Management Information System (KeHMIS)[10] project, initiated in 2011, spearheaded health information	Currently, siloed systems and protocols hinder the exchange of comprehensive health information. To address this

---

[7] The Health Act 2017, http://kenyalaw.org/kl/fileadmin/pdfdownloads/Acts/HealthActNo.21of2017.pdf
[8] Zanzibar Digital Health Strategy, https://mohz.go.tz/wp-content/uploads/2021/08/ZANZIBAR-DIGITAL-HEALTH-STRATEGY-2020-2025.pdf
[9] The Data Protection Act 2019, https://www.odpc.go.ke/dpa-act/
[10] The Kenya Health Management Information System (KeHMIS), https://kenyahmis.org

	system innovations. KeHMIS facilitated the digitization of HIV records and expanded its scope to cover all HIV/AIDS services. It also established the National Data Warehouse, acting as a centralized repository for anonymized HIV patient data. An interoperability layer, based on OpenHIE and international standards, enables data exchange among health information systems and supports automated reporting. Kenya has recently launched a Unique Identification framework[11], which provides health sector decision makers with a roadmap for the implementation and operationalization of the Unique Patient Identification (UPI) at various levels of the health system. The Kenya Health Information Systems Interoperability framework[12] guides the country's efforts to integrate and exchange data among health information systems.	challenge, the Data Protection and Sharing Framework aims to implement standardized data-sharing protocols and interoperability standards. By doing so, Zanzibar seeks to foster the efficient exchange and integration of health data, resulting in improved healthcare delivery. Another major effort to address this challenge is the development and implementation of the Zanzibar Health Interoperability Layer (ZHIL). This was introduced to seamlessly interconnect multiple digital systems, including those used for service delivery, human resource management, commodities, and information systems reporting, to facilitate data exchange and enhance information sharing for evidence-based decision-making and service improvement.
Strengthening digital health systems and services	Alongside making progress towards Universal Health Coverage[13], Kenya has made immense progress in the process of digitization of its health system as the government aims to digitize services and adopt technologies like e-health, m-health and telemedicine, leveraging ICT infrastructure and mobile penetration.	The Digital Health Strategy further aligns with the Zanzibar Strategy for Growth and Reduction of Poverty (ZSGRP II)[14] and complements existing operational digital health solutions, which include the District Health Information System (DHIS2), the electronic Logistics Management Information System (eLMIS), and the Malaria surveillance system.

---

[11] Kenya's Unique Identification Framework, http://guidelines.health.go.ke:8000/media/Health-Sector-Unique-Identification-Framework-30-August-2022.pdf
[12] The Kenya Health Information Systems Interoperability framework, https://www.data4sdgs.org/sites/default/files/services_files/Kenya%20Health%20Information%20Systems%20Interoperability%20Framework.pdf
[13] Kenya Universal Health Coverage Policy, 2020 – 2030, http://guidelines.health.go.ke:8000/media/Kenya_Universal_Health_Coverage_Policy_2020__2030.pdf
[14] Zanzibar Strategy for Growth and Reduction of Poverty (ZSGRP II), https://planipolis.iiep.unesco.org/sites/default/files/ressources/zanzibar_zsgrp.pdf

Advancing Expertise in Health Data Governance: Lessons from the Ministries of Health in Kenya and Zanzibar

B. Strategies for promoting effective health data governance and data management

Both Zanzibar and Kenya have adopted best practices to tackle challenges in health data management, with a particular focus on data quality assurance. Recognizing the significance of protecting data from being distorted as it journeys through the data life cycle for evidence-based decision-making, both ministries value the role of data managers in ensuring data accuracy in addition to record keeping. In addition, a clear separation of roles between the ICT information officers and the data managers is important to ensure data accuracy.

Data managers play a vital role in overseeing data quality and should collaborate closely with information officers to ensure effective data management and governance.

Dr. Joyce Wamicwe, Head, Division of Policy & Research, Kenya MOH, and Ms. Wahida Maabadi, Head of HMIS Unit, Zanzibar MOH

Both Ministries emphasized the importance of regular data review meetings at the facility level to identify discrepancies and foster a culture of accountability and continuous improvement in health data management.

Regular data review meetings help identify discrepancies and ensure data accuracy. They create a culture of accountability and continuous improvement in health data management.

Dr. Job Nyangena, Head, Division of Health Informatics, MOH Kenya

Digitization and automation have played a pivotal role in enhancing data quality and accessibility in both Ministries. Zanzibar has witnessed a significant improvement in data accuracy since implementing electronic systems, which have reduced errors and enabled real-time data access. Kenya is moving towards digital patient IDs and developing a patient portal to empower individuals in accessing and utilizing their health data for informed decision-making and better healthcare outcomes.

Moreover, unique patient identification (UPI) emerged as a priority to enhance the quality of care and reduce healthcare costs. UPI ensures patient continuity of care and data accuracy and integrity for patient research; this minimizes any potential safety and protection risks for the patients in case of mistaken identity. In Kenya, for example, the registration system has follow-up procedures for patients without identification. The lack of UPI makes it more challenging for policymakers to understand the actual number of patients and their healthcare needs, and plan or allocate resources effectively and efficiently.

In general, representatives from both Ministries of Health agreed that government leadership, funding, and multi-sectoral partnerships are crucial for incentivizing and sustaining stakeholder participation in the digitization process of healthcare.

Coordination and collaboration on health data governance that is effective and accountable

It is increasingly common[15] to view data governance as concerned primarily with decision-making processes around how data is stored, managed, publicized, shared, used, and re-used. Specifically in the health sector, it is increasingly common to view data governance as primarily a high-level activity concerned with the creation of policies and legislation. But it must be more than that. It should go further to include decision-making strategies, policies, and practices characterized by participation, transparency, and sustainability and with emphasis on practical action and understanding what it means to 'use' data. This way, decision makers can involve people in how data about them or that affects them is designed, collected, funded, managed, and used.[16]

The Ministry of Health Kenya convened a multi-stakeholder workshop[17] during the peer exchange. This was an opportunity to bring in the various stakeholders working on health data governance in Kenya. It was also an opportunity for the Ministry of Health Zanzibar team to share their best practices and challenges and interact with the Kenyan stakeholders. The workshop highlighted the consultative journey that the Government of Kenya has taken in the development of the Digital Health Bill and the health data governance framework, including: establishing a data governance technical team from government and non-state actors to guide the drafting of these key documents; detailed stakeholder mapping to understand the key champions and barriers; regular meetings and workshops with different stakeholder groups; using social media such as WhatsApp groups to effectively coordinate; creating standard templates for collecting and collating feedback; and lastly, pooling financial resources from both state and non-state actors for the common course of finalizing the Digital Health Bill and the health data governance framework. To ensure sustainability of these efforts, the Ministry of Health Kenya has ensured that existing mechanisms, such as the interagency coordinating committees and technical working groups within the Ministry of Health Kenya, will continue to drive health

---

[15] Governance and Decision-Making, The Data Governance Institute

[16] Governing data to benefit people: Decision-making that builds trust and accountability, Global Partnership for Sustainable Development Data, https://www.data4sdgs.org/governing-data-benefit-people-decision-making-builds-trust-and-accountability

[17] Participants in the workshop included representatives from ministries, departments, agencies, the private sector and non-governmental organizations and academia.

data governance efforts. That said, challenges continue to prevail, such as: sufficient financing, time constraints, and balancing national and county responsibilities and dynamics.

Site visit to Kitengela Sub-County Hospital for hands-on experience of Afya KE

Kitengela Sub-County Hospital[18] is a high-volume facility, serving a minimum of 500 clients a day in the out-patient department while also providing in-patient services. The facility has 15 departments and approximately 45 service delivery points. It is the first hospital in Kenya to successfully roll out Afya KE – a fully government-owned information system aimed at digitizing healthcare services. The hospital began the process of digitization on December 1, 2022, and within six months, 80 percent (with the exception of administrative operations) of the facility was digitized and accessible on the Afya KE platform. The Government of Kenya's vision is to extend Afya KE to all government facilities and encourage private health facilities to adopt the platform as well. Several benefits and lessons learned from the implementation of a home-grown digitization system were observed and discussed by the participants of the peer exchange and the hospital management. Box 2 highlights these benefits and lessons.

Box 2: Benefits and lessons to Kitengela Sub-County Hospital from pioneering Afya KE.

Key benefits

Cost savings: Operational costs, such as those related to paper and files, have significantly reduced, contributing to cost savings and financial sustainability.

Increase in revenue: The digitization efforts have led to a remarkable increase in monthly revenue. Within six months, the hospital management at Kitengela Sub-County Hospital reported that their revenues have tripled.

Sustainability: As the Afya KE platform is fully government-owned, the hospital has eliminated dependency on paid-for platforms with monthly or annual subscriptions that are costly to sustain. This has enhanced the hospital's independence and control over the system, and the Ministry of Health having control to improve the system on a continuous basis. With government ownership and support, the Afya KE platform is expected to be sustainable in the long term, ensuring continued benefits.

Change management: The digital system has fostered a culture of accurate record-keeping and accountability among staff, leading to increased trust in data accuracy. The Ministry of Health has stationed an ICT officer at the hospital for continued training, engagement and troubleshooting with facility staff.

Increased efficiencies: The hospital's revenue growth can be attributed to improved efficiency and streamlined processes facilitated by the digital health records system. This enables the hospital to serve more patients each day.

---

[18] Kitengela Sub-County Hospital, https://kmhfl.health.go.ke/#/facility/rating/c0a5eca6-7c59-4ef8-8035-d33e2ca19ff5/services/

Improved drug accountability: The digital system has improved drug accountability, reducing wastage and enhancing inventory management.

Lessons learned

Client feedback mechanisms: The hospital administration put up fliers in the facility informing clients of the possible interruptions as they rolled out the system. This was useful to ensure patients remained engaged. Moving forward, the hospital aims to enhance client feedback mechanisms, proactively seeking input from patients to continuously improve their services, hence enabling the continuous improvement of the facility's digitization process to be as participatory as possible.

ICT readiness: Health facilities are encouraged to be ICT-ready, which includes access to power, internet connectivity, and necessary equipment. Kitengela Sub-County Hospital successfully met these requirements through its budget and county government allocations.

Reliability of information: The digital system has instilled confidence in the accuracy and quality of data, minimizing the need for extensive data review meetings.

Informed decision-making: With summary statistics available to all health workers at the facility through dashboards, decision-making is faster, and access to information is much more efficient. This has encouraged data-driven management practices.

Resource allocation to digital systems: The Ministry of Health has made it affordable to health facilities to roll out Afya KE, as the main requirement is for the health facility to put in place the infrastructure to be ICT ready. The management of Kitengela Sub-County Hospital were also successful in rolling out Afya KE due to the goodwill from the county government of Kajiado to allocate resources for this digital transition. The hospital has been able to subsequently raise sufficient resources to expand its digitization efforts e.g. by increasing the number of computers and footing its monthly internet costs as Afya KE is a web-based platform.

Photo 1: The participants learning from the medical doctor on Afya KE during a site visit to Kitengela Sub-County Hospital.

The Zanzibar MOH team were quite impressed by the seamless integration of technology into every aspect of healthcare management and service provision in Kitengela Sub-County Hospital. The efficiency of Afya KE across all the service points at the hospital was impressive, as they witnessed first-hand the entire paperless processes and reduced administrative burden. Patient information is now easily accessible at the touch of a button, from admitting the client to discharging, leading to quicker and more informed decision-making by facility staff across all the departments in the hospital. Moreover, the strict data management and governance protocols demonstrated the facility's commitment to patient privacy and security. Overall, the site visit left the MOH staff inspired and motivated to explore similar innovations to improve services in Zanzibar.

The speed and coordination exhibited by the Ministry of Health Kenya were impressive. The visit provided valuable insights and highlighted the importance of infrastructure and political will.

Mr. Khamis Bilal, Health Coordinator, Pemba

Advancing Expertise in Health Data Governance: Lessons from the Ministries of Health in Kenya and Zanzibar

Photo 2: Participants holding debrief meeting with Kitengela Sub-County Hospital staff on Afya KE and the benefits to the hospital so far.

C. Summary of key learnings from the peer exchange and next steps for continued mutual learning

At the end of the peer exchange, representatives from the Ministries of Health, Kenya and Zanzibar, together with the team from D-tree and the Global Partnership, had a debrief to reflect on the learnings from the exchange, summarize outcomes and challenges, and forge the next steps for continued learning. The key learnings are summarized in Box 3, as the six key factors for advancing health data governance and digital health initiatives.

Both Kenya and Zanzibar agreed that these six factors have emerged after various iterations of rolling out digital health and navigating challenges that countries often face while implementing digital health initiatives.

1. Government funding and political will:

    a. Strong political will and financial commitments are essential for driving change and funding initiatives.

    b. In Kenya, community health worker programs, technology adoption, and digitization have thrived due to government support and funding – this is much more visible with the current leadership.

2. Institutional frameworks and regulations:

    a. The frameworks and guidelines mentioned in Table 1 play a crucial role in guiding and governing the healthcare digitization process in their respective countries.

    b. They provide a strategic roadmap and set of regulations that ensure effective implementation, management, and protection of digital health initiatives, aiming to enhance healthcare services, data quality, interoperability, and overall health outcomes.

    c. But institutional frameworks are never enough, practical action including engagement with people is equally important for health data governance to succeed.

3. Participation and accountability:

    a. Allowing individuals to self-register and provide health data on their terms enhances patient engagement, and improves data quality and collection, reducing administrative burdens and facilitating timely access to critical health information.

    b. Accountability in data management, sharing, and accuracy ensures stakeholders (e.g. data managers, health workers and facilities) promote confidentiality and adhere to governance policies for reliable health information.

    c. Collaboration with external organizations, public and private sectors, and international agencies is essential for supporting government efforts with complementary expertise, resources, and innovative technologies that contribute to successful implementation and sustainability.

4. Data quality and management:

    a. Health information exchange plays a crucial role in creating effective data pathways, towards collaboration, decision-making and patient engagement, resulting in well-coordinated continuity of care.

b. Unique identification systems reduce costs, minimize wastage, and enhance efficiency in healthcare. Improving the quality of care is facilitated by accurate patient identification.

c. Robust IT infrastructure is vital to power digital health initiatives, as it supports the seamless integration and transmission of health data.

5. Empowering patients in data sharing

a. Encouraging patients to provide data on their own terms, e.g. self-registration, enhances engagement and improves health records.

b. Digital transformation ensures health records are accessible to all, including patients having access to their health records.

6. Sustainability and resource mobilization:

a. Government leadership is crucial in driving sustainable change.

b. Adequate investment from the government is necessary for long-term sustainability.

c. Home-grown, government-owned digital systems are more sustainable than systems that require regular subscriptions. This gives government agency to continuously improve the systems.

Participants of the peer exchange acknowledged the effectiveness of the exchange as a way to foster south-south coordination and learning. Box 4 summarizes the next steps to advance learning between the two Ministries working with the Global Partnership and D-tree.

Kenya Ministry of Health:

- Develop a documentary on the digitization process in Kitengela Sub-County Hospital, focusing on beneficiaries' experiences to showcase successful digital health initiatives as a contribution to the case for investing in digitization of healthcare and health data governance processes.

- Share the draft Kenya health data governance framework with the Ministry of Health Zanzibar team to also receive their feedback and incorporate it in the current draft of the framework.

- Following an invitation from Zanzibar Ministry of Health, virtually attend the Digital Health stakeholders meeting hosted by Zanzibar.

- Participate in a reciprocal visit to the Ministry of Health Zanzibar before the end of 2023 to continue this mutual learning.

Zanzibar Ministry of Health:

- Host the Ministry of Health Kenya team in a virtual knowledge exchange with Kenya in digital health initiatives in Zanzibar, which include Jamii ni Afya and M-Mama systems.

- Host the Ministry of Health Kenya team in a reciprocal visit to Zanzibar before the end of 2023 to continue this mutual learning.

- Put to practice some of the lessons learned from the exchange; for example, establish multi-stakeholder data governance mechanisms for coordination and collaboration.

D-tree:

- Support the transition of Jamii ni Afya (digital community health) to MOH for sustainability and enhance full government ownership of the Jamii ni Afya program.

- Join forces with the Global Partnership to establish a community of practice for regular convenings to share learnings about digital health, starting with Kenya and Zanzibar, and subsequently expanding to other East African countries. Develop a concept note and framework for this initiative. In addition, work together to organize the reciprocal visit to Zanzibar.

- Join forces with the Global Partnership and the Ministries of Health Kenya and Zanzibar to document this peer exchange in a case study and present it in key meetings and webinars, including the WHO-led Health Data Collaborative (HDC).

Global Partnership:

- Join forces with D-tree to establish a community of practice for regular convenings to share learnings about digital health, starting with Kenya and Zanzibar, and subsequently expanding to other East African countries. Develop a concept note and framework for this initiative. In addition, work together to organize the reciprocal visit to Zanzibar.

- Work closely with the Ministry of Health Kenya to document the Kitengela Sub-County Hospital Afya KE journey.

- Join forces with D-tree and the Ministries of Health Kenya and Zanzibar to document this peer exchange in a case study and present it in key meetings and webinars, including the WHO-led Health Data Collaborative (HDC).

Conclusion

The knowledge exchange on health data governance between Zanzibar and Kenya yielded significant positive outcomes. Stakeholders from both Kenya and Zanzibar enhanced their understanding of best practices, identified solutions to common challenges, and developed a stronger commitment to improving health data governance. Stakeholders from Zanzibar also gained valuable insights into best practices and infrastructure development, motivating them to accelerate digitization efforts.

The exchange allowed us to gain valuable insights into Zanzibar's progress in infrastructure development and change management. We were inspired by their achievements and motivated to accelerate our own efforts.

Dr. Joyce Wamicwe, Head, Division of Policy & Research, MOH Kenya

Through this exchange, we have truly seen and appreciated the value of putting in place legal frameworks for digitization. This creates accountability. While Zanzibar focused its efforts on implementation, we believe we are also now better equipped to put in place our legal frameworks to support health data governance.

Mohamed Habib Al-Mafazy, Head of ICT, MOH Zanzibar

Zanzibar's progress in digitization was evident, with the establishment of a data center and investments in infrastructure. The exchange reinforced their commitment to change management and user incentives, focusing on enhancing healthcare worker productivity. The importance of unique identification, data quality assurance, and standardized terminologies were recognized as critical factors for successful integration and interoperability of different health information systems.

The forthcoming Digital Health Bill in Kenya and the prioritization of the Kenya Health Information Exchange Platform (HIE) will further legitimize and accelerate digitization efforts.

The Digital Health Bill and the Kenya HIE will provide the necessary legal framework and infrastructure to facilitate secure data exchange, client registry management, and standardization of health data. This will enhance interoperability and improve health data governance across the country.

Dr. Bernard Langat, Head, Directorate of Digital Health, Informatics, Policy & Research

The lessons learned and progress made in digitization initiatives will contribute to more effective and accountable health data governance and management, ultimately leading to improved health outcomes for citizens. The commitment and knowledge gained from the exchange will continue to drive transformation in health data governance, ensuring a data-driven approach to healthcare decision-making and planning.

Facilitating an opportunity for the governments of Kenya and Zanzibar to interact with one another, including showcasing projects through site visits and holding discussions between diverse stakeholders, enabled both governments to discuss and learn about issues that are most relevant to them. This initial exchange proved to have great potential for fostering knowledge sharing among countries with similar characteristics and at similar stages in their digital transformation journeys. There is also great potential to expand this learning exchange offer to span multiple topics relevant to digital health and data governance, that can accelerate learning and progress.