Assessment Background

The East African Community (EAC), a regional intergovernmental organization of six partner states, has worked for the past decade to improve the efficacy and efficiency of health services in member countries, with a focus on strengthening digital health (eHealth). The EAC is committed to supporting regional actions to strengthen the enabling environment for effective digital health information systems (HIS).

In 2018, the EAC commissioned an assessment of the status of eHealth and the interoperability of its components across member states, to be carried out with oversight by the EAC's East African Science and Technology Commission. In 2019, the Ministry of Health, Community Development, Gender, Elderly, and Children of Tanzania, the President's Office of Regional Administration and Local Government, and the Ministry of Health (MOH) of Zanzibar partnered with MEASURE Evaluation—a project funded by the United States Agency for International Development (USAID)—to conduct an assessment of the interoperability and readiness of the United Republic of Tanzania's HIS as part of this regional assessment. This brief highlights the results of this assessment for the semi-autonomous state of Zanzibar.

Methods

The MOH and MEASURE Evaluation used the Health Information Systems Interoperability Maturity Assessment Toolkit[1] to examine Zanzibar's HIS according to three key domains of interoperability: leadership and governance, human resources, and technology. The assessment consisted of a desk review of existing literature and policies on digital health, meetings to interview and learn from HIS and digital health stakeholders, and workshops with HIS and digital health stakeholders. During the workshops, stakeholders from organizations that support HIS strengthening in Zanzibar participated in guided discussions and reached consensus on the country's maturity level for each of the 18 subdomains of interoperability in the HIS Interoperability Maturity Model.

[1] MEASURE Evaluation. (2017). Health Information Systems Interoperability Maturity Toolkit. Retrieved from https://www.measureevaluation.org/resources/tools/health-information-systems-interoperability-toolkit/health-information-systems-interoperability-toolkit

East African Community Digital Health and Interoperability Assessments
Results at a Glance: Zanzibar

Five-Point Maturity Scale

The HIS Interoperability Maturity Model uses a five-point scale to assess processes, capabilities, and documentation related to each subdomain. The scale starts at "nascent" with a score of one, and goes to "optimized" with a score of five as shown in this figure.
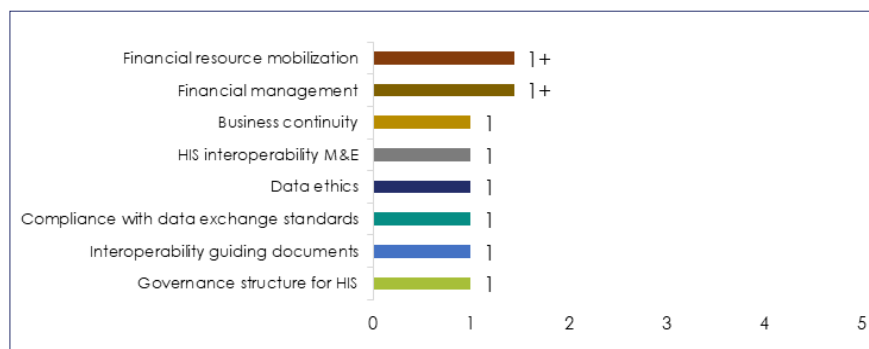
Figure 1. Maturity model levels
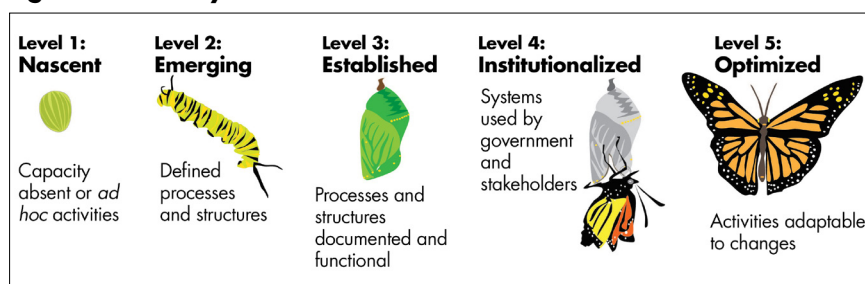
Results

The following figures depict the maturity level of each of the subdomains within the three domains (leadership and governance, human resources, and technology).

Leadership and Governance

Figure 2. Leadership and governance subdomain maturity levels in 2019


Zanzibar did not have a governing structure overseeing HIS. Assessment participants noted that the HIS unit did not have the authority to convene stakeholders from across the MOH to plan for HIS. As a result, there was no coordinating body providing a vision, guidance, and structure for HIS interoperability. Moreover, the MOH's Information, Communication, and Technology (ICT) unit did not have the authority to oversee the ICT systems for the MOH, making it difficult to govern digital health systems. Stakeholders expressed a willingness and commitment to foster collaboration and eliminate

siloed systems. Although there were some financial management structures and processes in place to support HIS activities, there was no business continuity plan for HIS activities or an M&E structure for HIS interoperability.

Human Resources

Figure 3. Human resources subdomain maturity levels in 2019
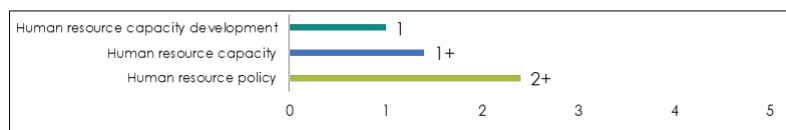
An assessment of the human resource needs for HIS was completed before the establishment of the HIS unit in the MOH. The resulting documents from the assessment were completed in 2018. These described HIS staffing needs, but stakeholders reported that there was no career path for HIS or digital health professionals in the public sector. There was growing human resource capacity in the public sector to support digital HIS, but those working on HIS activities were often overstretched and lacked role clarity. Furthermore, overall capacity development was a challenge because the relevant training programs were on the Mainland, and there was no recognized pre-service training available in Zanzibar to address HIS needs and capacity. Some stakeholders reported that this resulted in the loss of trained professionals to Mainland organizations.

Technology

Figure 4. Technology subdomain maturity levels in 2019
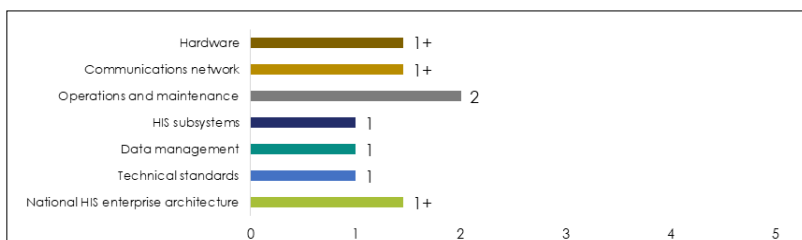
Although there was some point-to-point data exchange to support activities such as in supply chain and malaria surveillance, there was no existing HIS enterprise architecture or plan. There were no defined technical standards in Zanzibar to operationalize critical HIS components. Although some data management practices were in place, they were not fully institutionalized. Operations and maintenance for information technology were ad hoc and unstructured. However, the HIS unit in the MOH had a team that provided ICT and network support. Backbone infrastructure existed to support Internet connectivity throughout Unguja and Pemba Islands, although full connectivity to facilities was often unstable.

Recommendations

The assessment workshops generated the following recommendations for key actions necessary to further strengthen the digital HIS landscape and build the foundation for HIS interoperability in Zanzibar:

- **Consider restructuring the MOH to clarify HIS-related roles and responsibilities** and to develop discrete roles and responsibilities for each group for the HIS in Zanzibar.
- **Coordinate procurement** of hardware and software needs under the coordination of the MOH.
- **Establish an HIS governance structure for the MOH and digital health strategy** to oversee implementation of the HIS in the MOH that would convene HIS and digital health stakeholders, advocate for resources, draft a digital health strategy, and oversee implementation of the digital health strategy and the HIS strategic plan.
- **Define and design an enterprise architecture for the HIS in Zanzibar** that will serve as a blueprint for the HIS in Zanzibar, and seek to harmonize health information needs, clinical and patient workflows, and technology solutions.
- **Increase transparency and the availability of documents and policies on HIS** by publishing and sharing them widely among the MOH and its partners.
- **Establish channels of communication and cooperative agreements to work better with the Mainland government** to share experiences, learn from policy and strategy implementation, and leverage economies of scale for purchasing HIS equipment and health commodities.
- **Collaborate with the Mainland to introduce in-service and pre-service training programs** on eHealth to improve the availability of health workers with the appropriate skills.
- **Develop a health data security, confidentiality, and privacy regulatory framework** to guide the protection of health data.
- **Develop business continuity processes for all digital health solutions** for the continuous availability of critical business processes.

Key Contact

For the full assessment report or to learn more about the findings, please contact Abdulhalim Mzale, MPharm, at the Ministry of Health of Zanzibar: abdulhalim.mzale@tz-ghsc.com