



**Ministry of Health, Social Welfare,  
Elderly, Gender and Children**



# Zanzibar Digital Health Investment Roadmap

2020/21–2024/25



# Zanzibar Digital Health Investment Roadmap

2020/21-2024/25

S/N	Strategic results and initiatives	Time frame				
		Year 1	Year 2	Year 3	Year 4	Year 5
<b>Result area 1: Stronger digital health leadership and governance established and operable</b>						
1.1	Establish digital health department					
1.2	Support the establishment and operations of a Zanzibar digital health steering committee					
1.3	Support the establishment and operations of a technical working group					
1.4	Develop and institutionalize a blueprint for the Zanzibar health enterprise architecture					
1.5	Develop a data protection and sharing framework					
1.6	Develop digital transformation guidelines					
<b>Result area 2: Critical foundational systems implemented</b>						
2.1	Develop and deploy health care worker registry					
2.2	Implement health facility registry					
2.3	Implement client registry					
2.4	Implement administrative area registry					
2.5	Implement terminology services					
2.6	Implement product registry					
2.7	Implement Zanzibar health interoperability layer					
<b>Result area 3: Interoperable, scalable, and client-centered end-user system deployed</b>						
3.1	Implement planning and reporting tool					
3.2	Digitalize hospitals and primary health care centers					
3.3	Digitalize primary health care units and primary health care units+					
3.4	Digitalize health facility assessment and quality improvement processes					

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# Abbreviations

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<b>API</b>	Application programming interface
<b>eIDSR</b>	Electronic integrated diseases surveillance and response
<b>ICT</b>	Information and communication technology
<b>MOHSEGC</b>	Ministry of Health, Social Welfare, Elderly, Gender and Children

# Foreword

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There have been remarkable improvements in the health status of Zanzibaris over the past years. However, despite the progress achieved so far, there are still challenges to be addressed in improving the health of the population, the quality of care, and the inequalities in access and service. The Revolutionary Government of Zanzibar developed and launched its first Zanzibar Digital Health Strategy 2020/21–2024/25 in September 2020, which focused on addressing issues in the quality and equitable distribution of health services for all. The Zanzibar Digital Health Strategy 2020/21–2024/25 outlines how it intends to leverage digital health technologies to meet health-sector goals and objectives.

To ensure successful implementation of the digital health strategy, the government developed this strategy implementation plan titled Zanzibar Digital Health Investment Roadmap 2020/21–2024/25. The roadmap converts the strategic initiatives into investments with defined outputs and activities. The Zanzibar Digital Health Investment Roadmap 2020/21–2024/25 is a tool to align the work of different stakeholders and funders in a single plan, under government leadership and the stewardship of the Ministry of Health Zanzibar. The Revolutionary Government of Zanzibar is calling for a holistic approach to implementation of digital health solutions across the health sector as a pragmatic intervention to enable the health system to function as an integrated ecosystem.

## The roadmap is structured into four major result areas:

1. Stronger digital health leadership and governance established and operable.
2. Critical foundational systems implemented.
3. Interoperable, scalable, and client-centered end-user system deployed.
4. Data use culture at all levels of the health system institutionalized.

Result area 1 will provide oversight and guidance to ensure the implementation of the digital health strategy vision is coordinated and thereby minimizes or eliminates duplication of efforts and wastage of resources. Result area 2 will create critical enablers and foundational systems to ensure equitable distribution of resources in the health sector. Result area 3 will transform health care delivery and the client health care experience through digitalization of health care services by improving performance mechanisms in the health sector. Result area 4 will institutionalize accountability in the health data and decision-making process. The implementation approach and dependencies, as well as a summary of costs and detailed costing of each initiative, are included at the end of the roadmap.

The government calls on all partners who wish to support this roadmap to design their interventions in line with this roadmap under the leadership of the Ministry of Health Zanzibar, as well as the forthcoming digital health department, and the digital health steering committee. The government asks partners to focus their support on providing inputs to the activities identified in this roadmap.



**Dr. Omary D. Shajak**

*Principal Secretary*

*Ministry of Health, Social Welfare, Elderly, Gender and Children*

# Acknowledgments

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The Zanzibar Digital Health Investment Roadmap 2020/21–2024/25 is a result of collaborative work with stakeholders from different levels and angles of the health sector. The Revolutionary Government of Zanzibar, through the Ministry of Health (MOHSEGC) Zanzibar, extends sincere gratitude to all those who participated in the development of the roadmap for their technical and strategic contributions. It is not easy to mention each stakeholder, but this task could not have been accomplished without their valuable support.

I would like to recognize and express appreciation for the important contributions of the government ministries, departments, and agencies. The MOHSEGC expresses special appreciation to the United States Agency for International Development for its financial support and to PATH for its technical assistance in the development of the this costed investment roadmap.

The MOHSEGC is also grateful to all government officers at the MOHSEGC for their coordination, overall guidance, and tireless technical support throughout the development of this roadmap.

Finally, I wish to acknowledge the support of all individuals and institutions not explicitly mentioned here who have contributed to the accomplishment of this work. Your invaluable contributions and efforts are highly appreciated.



**Ramadhan Kh. Juma**

*Director of Administration and Human Resources  
Ministry of Health, Social Welfare, Elderly, Gender and Children*

# Background

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Advances in digital technologies have transformed almost all aspects of social services, including health. The application of digital technologies in health care plays a significant role in facilitating the provision of high-quality health services, efficient management of resources, and timely availability of high-quality health information. Digital health has a potential to transform health systems and so improve the health of a population, as well as ensure fair financing and financial risk protection for households. Moreover, user-centered design of digital health interventions can enhance the health system's resilience, inclusiveness, and responsiveness to clients' needs. Ultimately, such a health system transformation could contribute significantly toward achievement of universal health coverage and the Sustainable Development Goals, particularly Sustainable Development Goal 3 on good health and well-being.

The Revolutionary Government of Zanzibar, through the Ministry of Health (MOHSEGC) Zanzibar, promotes the appropriate adoption, integration, and use of cost-effective digital health technologies. The MOHSEGC prioritizes relevant digital health technologies that would greatly improve business processes and performance in the health sector, including provision of high-quality health services, management of health resources, and evidence-based decision-making across all levels of the health system.

The Revolutionary Government of Zanzibar, through the MOHSEGC, launched the Zanzibar Digital Health Strategy 2020/21–2024/25 in September 2020. The overall objective of this strategy is to promote the use of digital health technologies in a streamlined, cost-effective, and cost-efficient manner at all levels of the health system in Zanzibar. The digital health strategy seeks to accelerate digitally enabled transformation of the health system to provide high-quality health services, improve population health outcomes through strengthened governance and leadership, efficiently manage human resources for health, strengthen health information systems, improve financial management, and ensure the efficiency of supply chain management of health commodities.



## The vision

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Appropriate digital health solutions for better health to all Zanzibaris.



## The mission

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To strengthen the enabling environment for digital health to support the implementation of interoperable systems for better health outcomes.



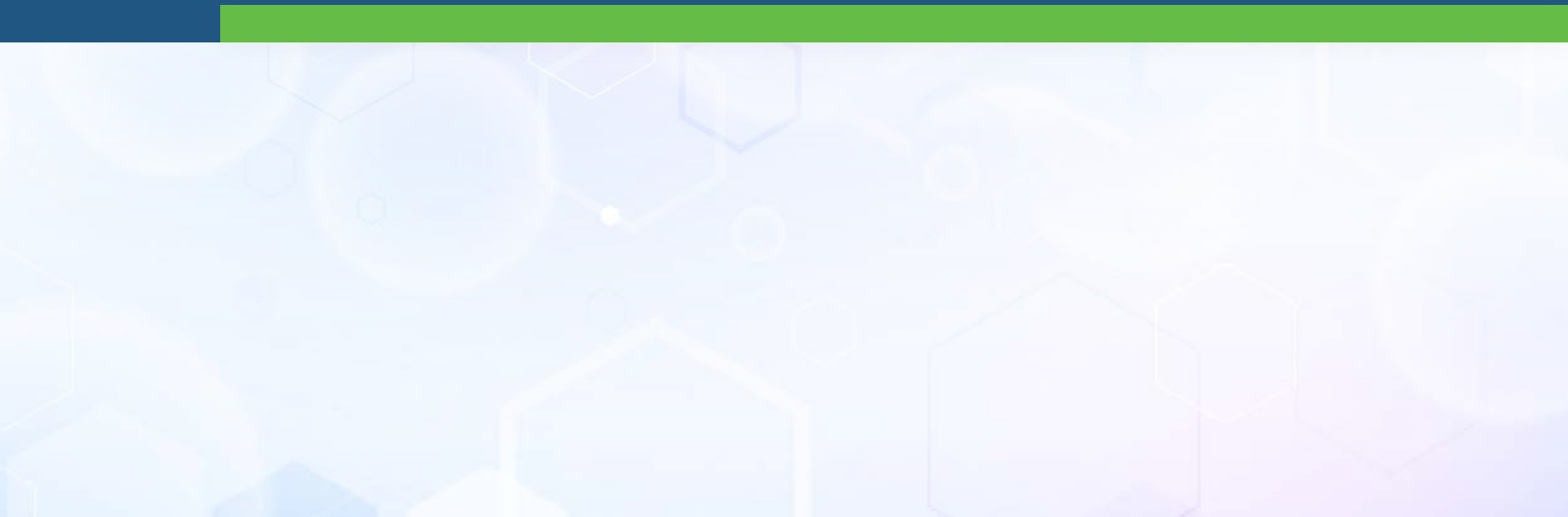
## Overall goal

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To improve the provision of safer, equitable, accessible, efficient, and effective health services at all levels through proper use of digital health technologies.



# Introduction





# Introduction

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## Purpose of the roadmap

The Zanzibar Digital Health Strategy 2020/21–2024/25 outlines how Zanzibar intends to leverage digital health technologies to meet the health sector’s goals and objectives. To achieve digital transformation of the health system in Zanzibar, the digital health strategy identifies eight strategic objectives, namely:



The present document, titled *Zanzibar Digital Health Investment Roadmap 2020/21–2024/25*, was derived from *Zanzibar Digital Health Strategy 2020/21–2024/25*. The roadmap translates the strategic initiatives into investments with defined outputs and activities. *The Zanzibar Digital Health Investment Roadmap 2020/21–2024/25* is a tool to guide both technical and financial support of different stakeholders, including implementing partners, the private sector, and donors toward a digital health revolution in Zanzibar.

## Roadmap result areas

The digital health investment roadmap identifies the following result areas:



To achieve the above-mentioned strategic objectives and results, the MOHSEGC Zanzibar aims to work on the investment areas outlined below.



## Results area 1

Stronger digital health leadership and governance established and operable

# Investment

Establish digital health department

## OVERVIEW

This investment will work to establish a digital health department with sufficient infrastructure and adequate and relevant skillsets across all subunits to support effective implementation of digital health activities.



### Outputs

1. Enhanced coordination of digital health activities in the sector.
2. A dedicated and competent team that is available to provide technical guidance and coordination to all stakeholders.
3. Equipment, tools, and infrastructure available for the dedicated team to use to implement digital health activities effectively and efficiently.
4. Enhanced monitoring and evaluation of, and accountability in, digital health strategy implementation.



### Broad activities

1. Develop a proposal for establishing a digital health department.
2. Prepare a circular in line with government procedures and with all relevant guidelines.
3. Facilitate approval process for the establishment of the department.
4. Facilitate establishment of digital health department team and functional technical working groups.
5. Set up office, including office renovation and procurement of office furniture.
6. Support department running cost during transition period (2 years) before full financing from the government.
7. Build the technical capacity of department staff based on the identified need.
8. Develop resource mobilization strategy.
9. Monitor and evaluate progress of implementation of the digital health strategy.

# Investment

Support the establishment and operations of a Zanzibar digital health steering committee

## OVERVIEW

This investment will support the establishment, institutionalization, and operations of a Zanzibar digital health steering committee, as stipulated in the Zanzibar Digital Health Strategy 2020/21–2024/25.



### Outputs

1. Enhanced coordination between the Ministry of Health Zanzibar and other stakeholders on the implementation of digital health initiatives.
2. Enhanced intersectoral collaboration to implement digital health initiatives.
3. Coordinated resource mobilization plan for digital health implementation.
4. Inventory management and approval processing system for digital health initiatives implemented.



### Broad activities

1. Finalize formal appointment of members to the digital health steering committee.
2. Provide orientation of committee members and introduce them to all available resources for governance.
3. Support regular meetings and other related activities of the steering committee.
4. Develop resource mobilization and investment plan to support implementation of the digital health strategy.
5. Implement digital health inventory management and new initiative approval process system to support the review, approval, and monitoring of digital health initiatives.
6. Disseminate the digital health inventory management system to relevant stakeholders for their knowledge and continued use.

# Investment

Support the establishment and operations of a technical working group

## OVERVIEW

This investment will support the establishment, institutionalization, and operations of a digital health technical working group, as stipulated in the Zanzibar Digital Health Investment Roadmap 2020/21–2024/25.



### Outputs

1. Close collaboration of digital health stakeholders in the technical aspects of the implementation.
2. Coordinated implementation of digital health activities among key stakeholders.
3. Established bi-directional feedback and discussion mechanism between Ministry of Health and stakeholders on the implementation of the digital health strategy.



### Broad activities

1. Formally appoint members of the technical working group.
2. Provide orientation of technical working group members to ensure they are aware of their role.
3. Support regular meetings and other related activities of the technical working group.
4. Implement technical working group portal to support coordination and information sharing among members.

# Investment

Develop and institutionalize a blueprint for the Zanzibar health enterprise architecture

## OVERVIEW

This investment will support the development and institutionalization of a blueprint for the Zanzibar health enterprise architecture, which will outline the building blocks of digital health and their relationship with each other. The blueprint will include well-defined business processes, tools, data needs, and standards for the health sector. The blueprint also will facilitate the process of filling in the gaps in governance structures, as well as interoperability and compliance to standards. The institutionalization of a blueprint for the Zanzibar health enterprise architecture will lead to improved data exchange across systems and institutions within the sector, which in turn will improve the quality of care.



## Outputs

1. National digital health standards framework in place, including:
  - Digital health architecture building blocks.
  - Business process maps and their linkages.
  - Business, information, and technology architectures.
2. Established governance framework for the health enterprise architecture.
3. Enhanced understanding of enterprise architecture within the Ministry of Health.
4. Enhanced stakeholders' awareness of and capacity in the Zanzibar health enterprise architecture.
5. Established mechanisms to monitor compliance to the Zanzibar health enterprise architecture standards.
6. Interoperable health-sector systems.



## Broad activities

1. Develop a vision for the Zanzibar health enterprise architecture.
2. Develop business, data, application, and technology architecture.
3. Define data standards, policies, and guidelines for Zanzibar health enterprise architecture.
4. Establish a governance framework to guide implementation.
5. Conduct gap analysis and develop roadmap for implementation.
6. Build the capacity of digital health department staff on enterprise architecture
7. Build the capacity of health systems leaders to understand and advocate for the Zanzibar health enterprise architecture.
8. Create awareness among stakeholders on national health enterprise architecture, standards, and guidelines.
9. Establish compliance mechanisms to guide the implementation of the Zanzibar health enterprise architecture.
10. Review existing key systems to ensure compliance and interoperability with the Zanzibar health enterprise architecture.
11. Facilitate the upgrade of existing systems to make them compliant with Zanzibar health enterprise architecture.

# Investment

Develop a data protection and sharing framework

## OVERVIEW

This investment will focus on developing a framework for the protection of clients' health data. The data protection framework will help the health sector by ensuring that all client data that are collected from various levels of the health service and stored in digital format are properly protected and used responsibly. The framework will also create the basis for the development of a personal data protection act.



## Outputs

1. Approved data protection and sharing framework.
2. Communication and advocacy materials for the sensitization of relevant stakeholders.
3. Guidelines for ensuring client safety, health data security, confidentiality, and privacy disseminated to all relevant stakeholders.



## Broad activities

1. Conduct landscape analysis to understand the existing legal and regulatory frameworks related to personal data protection and health data sharing; prepare report for this work.
2. Identify and document gaps in existing laws related to personal data protection and health data sharing.
3. Conduct extensive stakeholders' consultation meetings to gather opinion on personal data protection and health data sharing guidelines.
4. Use the findings to develop a data protection and sharing framework to inform a data protection act.
5. Develop and obtain approvals for health data protection and sharing guidelines.
6. Disseminate health data protection and sharing guidelines to relevant stakeholders.



# Investment

Develop digital transformation guidelines

6

## OVERVIEW

Guidelines will ensure the smooth transformation of health-sector activities, processes, competencies, and models to fully and strategically leverage the opportunities created by digital technologies and their impact across the health sector, with present and future shifts in mind.



### Outputs

1. Digital transformation guidelines in place.
2. Digital transformation guidelines disseminated to all stakeholders across the health sector.



### Broad activities

1. Identify key stakeholders for the development of the digital transformation guidelines.
2. Develop national digital transformation guidelines for Zanzibar.
3. Review existing legal and regulatory frameworks and provide suggestions on how they can be updated to support digital transformation of the health sector.
4. Obtain needed approvals from relevant authorities.



## Results area 2

Critical foundational systems implemented

# Investment

Develop and deploy health care worker registry

## OVERVIEW

This investment will focus on improving information on the number, qualifications, and location of the health workforce to enable their proper allocation and distribution in Zanzibar. Health workers form one of the six building blocks of the health service; the five others are health service delivery, health information, health financing, governance and leadership, and health commodities.



### Outputs

1. Documented business processes, systems requirements, and system design documents.
2. Health care worker registry in place that links with multiple human resource systems and training systems across the public and private sectors.
3. Sustainability plan.



### Broad activities

1. Develop business requirements and governance processes for a workforce registry.
2. Develop the health care worker registry software and set up the application programming interface (API) and interoperability with other systems.
3. Launch and implement health care worker registry.
4. Familiarize software developers in the health sector with how to link existing systems to, and develop add-on applications for, the health care worker registry.
5. Develop a plan for sustainability.
6. Provide ongoing review, maintenance, and user support and communications.
7. Roll out health care worker registry.

# Investment

Implement health facility registry

8

## OVERVIEW

Establishment of a health facility registry is an essential step in facilitating the identification and equitable distribution of health care resources. The registry will be a useful tool for data-driven approaches to improve access to, and ensure equitable distribution of, health facilities across administrative areas in Zanzibar. Various factors, such as an area's size and its population, determine the establishment of health facilities in that area and thus the availability of health services.



## Outputs

1. Digital transformation guidelines in place.
2. Digital transformation guidelines disseminated to all stakeholders across the health sector.



## Broad activities

1. Identify key stakeholders for the development of the digital transformation guidelines.
2. Develop national digital transformation guidelines for Zanzibar.
3. Review existing legal and regulatory frameworks and provide suggestions on how they can be updated to support digital transformation of the health sector.
4. Obtain needed approvals from relevant authorities.

# Investment

## Implement client registry

### OVERVIEW

Investment in a client registry will facilitate the tracking of all individuals served by the health and social services sector across multiple points of service. The health and social services client registry is proposed to be separate from, but linked to, legal identification systems. The client registry is a step toward achieving continuity of care across different health facilities.



### Outputs

1. Documented business processes, system requirements, and design documents
2. Client registry system.
3. Training and continuous capacity building plan.



### Broad activities

1. Develop requirements and business and governance processes for a client registry.
2. Develop and or redesign client registry software based on identified gaps and requirements.
3. Launch client registry and sensitize stakeholders on its use.
4. Familiarize software developers working in the health sector with how to connect their systems to the client registry.
5. Support the connection of existing systems with the client registry (e.g., software adjustments needed to existing systems).
6. Perform ongoing review, maintenance, and user support.
7. Develop a plan for sustainability.
8. Roll out client registry.

# Investment

Implement administrative area registry

# 10

## OVERVIEW

Investment into an administrative area registry is intended to create a single, accessible, and updated source of information about Zanzibar's administrative areas. Administrative areas are the geographical units for the organization of government services and administration, such as villages, shehia (lower administrative area units under districts and equivalent to wards) and districts. This investment will be broader than the health sector and be useful to the health sector and other sectors. The investment will facilitate accurate data analysis and mapping visualizations by administrative area.



## Outputs

1. Documented business processes, system requirements, and design documents.
2. Administrative area registry system.
3. Training and continuous capacity building plan.



## Broad activities

1. Develop a governance structure to manage administrative area data.
2. Develop requirements for the administrative area registry.
3. Develop administrative area registry software and application programming interface (API).
4. Train users at the national and subnational levels, and train trainers.
5. Launch the administrative area registry and sensitize stakeholders on its use.
6. Familiarize software developers working in the health sector with how to subscribe to the service and use shape files for mapping in their systems.
7. Facilitate integration with other registries, such as the health facility registry, client registry, health worker registry, etc.
8. Perform ongoing review, maintenance, and user support.
9. Develop a plan for sustainability.
10. Roll out administrative area registry.

# Investment

Implement terminology services

## OVERVIEW

Investment into a terminology service is intended to standardize health sector terminologies, such as diagnoses and drugs, and make those standards accessible to health workers and data systems. This is needed for data exchange and comparability between different data systems and sources.



## Outputs

1. Terminology standards, including for diagnoses, drugs, and medical supplies.
2. Terminology registry service, including lists and classifications of medical terminology, made available as an update service to other data systems.
3. Documented system requirements, technical documentation, user guide, and training materials.



## Broad activities

1. Develop, adopt, and harmonize standards and coding systems for diagnoses, procedures, etc.
2. Develop requirements for a terminology registry.
3. Develop a terminology registry and an application programming interface (API).
4. Train terminology management and administration staff at the Ministry of Health.
5. Familiarize software developers working in the health sector with how to subscribe to the terminology service.
6. Perform ongoing review, maintenance, and user support.
7. Develop a plan for sustainability.
8. Roll out terminology service.

# Investment

Implement product registry

# 12

## OVERVIEW

A product registry will provide government agencies, regulators, manufacturers, and stakeholders with a common, centralized, and continually updated reference for approved health products and medical supplies. The registry will contain, among other information, details on performance, usage, and safety for all the products on the registry. It will allow external applications, such as hospital electronic medical records systems, to access the information through a standard-based application programming interface (API) and interoperability layer.



## Outputs

1. Product standards, including drugs and medical supplies.
2. Product lists, including classifications and details on safety, performance, and usage.
3. Documented system requirements, technical documentation, user guide, and training materials.
4. Developed and implemented product registry system.
5. Sustainability plan.



## Broad activities

1. Develop, adopt, and harmonize standards and coding systems for referencing health products and medical supplies.
2. Develop requirements for a product registry.
3. Develop a product registry and an application programming interface (API).
4. Familiarize software developers working in the health sector with how to use the product registry.
5. Orient relevant stakeholders on how to use the product registry.
6. Develop a plan for sustainability and ownership of the system.
7. Perform ongoing review, maintenance, and user support.
8. Roll out administrative product registry.



# Investment

Implement Zanzibar health interoperability layer

# 13

## OVERVIEW

A Zanzibar health interoperability layer is one of the core investments of the digital health strategy. It will enable information exchange and be the heart of the health enterprise architecture by facilitating information exchange between different systems in the health sector. The health interoperability layer will leverage established standards and guidelines to ensure smooth and consistent exchange of information across the health sector ecosystem.



## Outputs

1. Health interoperability layer system.
2. Health interoperability layer service, including supporting standards and guidelines on how other systems can use the service.
3. Documented system requirements, technical documentation, user guide, and training materials.
4. Training and continuous capacity building plan.
5. Sustainability plan.



## Broad activities

1. Develop a shared vision for health interoperability layer.
2. Develop requirements for health interoperability layer.
3. Review available solution for the best fit for purpose.
4. Develop health interoperability layer system and application programming interface (API).
5. Establish technical team and develop its capacity to provide ongoing support.
6. Familiarize software developers working in the health sector with how to connect their systems to the health interoperability layer.
7. Support the connection of existing systems to the health interoperability layer (e.g., software adjustments needed to existing systems).
8. Perform ongoing review, maintenance, and user support.
9. Develop a plan for sustainability.
10. Roll out health interoperability layer.



## Results area 3

Interoperable, scalable, and client-centered end-user system deployed

# Investment

Implement planning and reporting tool

# 14

## OVERVIEW

Under this investment, the goal is to put in place a digital system to support the health-sector planning and reporting process. The tool will be a single platform for planning, tracking, and managing the implementation of health-sector plans, including budgets, revenue projections, funds, and expenditures. Through this investment, health workers at facilities, managers at council level, and policymakers at the MOHSEGC and President's Office, Regional Administration, Local Government, and Special Departments will be trained on how to effectively conduct data-driven planning and reporting.



## Outputs

1. Documented business processes, system requirements, and design documents.
2. Planning and reporting digital system in place and implemented.
3. Sustainability plan.



## Broad activities

1. Develop, adopt, and harmonize standards and coding systems for referencing health products and medical supplies.
2. Develop requirements for a product registry.
3. Develop a product registry and an application programming interface (API).
4. Familiarize software developers working in the health sector with how to use the product registry.
5. Orient relevant stakeholders on how to use the product registry.
6. Develop a plan for sustainability and ownership of the system.
7. Perform ongoing review, maintenance, and user support.
8. Roll out administrative product registry.

# Investment

Digitalize hospitals and primary health care centers

# 15

## OVERVIEW

This investment is envisaged to have a large impact on service delivery through the computerization of hospitals, better supervision and performance management, and better tracking of individual clients.



## Outputs

1. Health interoperability layer system.
2. Health interoperability layer service, including supporting standards and guidelines on how other systems can use the service.
3. Documented system requirements, technical documentation, user guide, and training materials.
4. Training and continuous capacity building plan.
5. Sustainability plan.



## Broad activities

1. Develop a shared vision for health interoperability layer.
2. Develop requirements for health interoperability layer.
3. Review available solution for the best fit for purpose.
4. Develop health interoperability layer system and application programming interface (API).
5. Establish technical team and develop its capacity to provide ongoing support.
6. Familiarize software developers working in the health sector with how to connect their systems to the health interoperability layer.
7. Support the connection of existing systems to the health interoperability layer (e.g., software adjustments needed to existing systems).
8. Perform ongoing review, maintenance, and user support.
9. Develop a plan for sustainability.
10. Roll out health interoperability layer.

# Investment

Digitalize primary health care units and primary health care units+

# 16

## OVERVIEW

This investment involves establishment of a digital health system to support operations at primary health care units and primary health care units plus. These units are the first points of contact for the client and an important point in providing care and tracking the client's medical history for continuity of care.



## Outputs

1. Integrated software solution for primary health care facilities and community health workers, with the following functionality:
  - Clinical decision support to guide workers through proven care guidelines.
  - Longitudinal tracking and record keeping.
  - Aggregate report production to feed into health management information system and to inform primary health care management.
2. Software solution implemented on tablets and smartphones with solar power. Works offline but syncs within facility and to central database.
3. Training, mentorship, and support to health workers.
4. Documented system requirements, technical documentation, user guide, and training materials.



## Broad activities

1. Develop shared vision for digitalization of health centers and dispensaries.
2. Develop requirements for an integrated suite of software tools for health centers and dispensaries.
3. Develop/enhance/adapt existing software tools based on identified gaps and requirements.
4. Establish technical team to provide ongoing support to end users.
5. Provide facilities with hardware, networking, connectivity, and infrastructure maintenance contracts.
6. Provide training and continuous support. Develop a plan for sustainability.

# Investment

Digitalize health facility assessment and quality improvement processes

## OVERVIEW

The investment to strengthen systems for management and supervision of facility performance is focused on improving coordination and effectiveness of supervision and assessments—for example, star rating, routine supervisions, and other assessments.



## Outputs

1. Shared vision for health facilities' supportive supervision.
2. Business processes, requirements, and designs document for supportive supervision system.
3. Facility supportive supervision system.
4. Improved supervision guidelines to support improved data-driven supervision practices.
5. Improved coordination of supervisions and assessments.
6. Training and continuous capacity building plan.
7. Sustainability plan.



## Broad activities

1. Develop shared vision for digitalization of quality improvement processes and supportive supervision tools.
2. Review guidelines/processes linked to quality improvement processes and supervision of facilities to develop harmonized guidelines.
3. Develop requirements for electronic quality improvement processes and supportive supervision tool.
4. Review existing quality improvement assessment supervision tool in line with requirements.
5. Enhance/improve/develop quality assessment supervision tool and health management information system to incorporate all supervision/assessment data.
6. Roll out electronic health facility quality improvement processes and supportive supervision.
7. Implement mechanism for collecting clients' feedback as part of improved supervision practices.
8. Provide training and continuous support.
9. Develop a plan for sustainability.

# Investment

Enhance systems for management of health supply chain

# 18

## OVERVIEW

The investment to enhance systems for management of supply chain data is designed to establish a supply chain strategy and enhance and integrate data systems so that supply chain challenges can be more easily understood and resolved.



## Outputs

1. Supply chain system strategy.
2. Business processes, requirements, and designs document for supportive supervision system.
3. Training and continuous capacity building plan.



## Broad activities

1. Develop a shared vision for integrated supply chain system.
2. Develop detailed requirements for further development of integrated supply chain systems.
3. Review existing system in line with identified vision and requirements.
4. Develop/enhance/adapt existing software tools based on identified gaps and requirements.
5. Familiarize software developers with systems for management of health supply chain.
6. Provide ongoing review, maintenance, and user support.
7. Roll out enhanced supply chain management system.

# Investment

Implement community-based information systems

# 19

## OVERVIEW

This investment is focused on establishing a health information system that monitors and informs community-based health interventions at household level. This system will also provide service and information linkage to the formal health care delivery system at primary health care facilities.



### Outputs

1. Shared vision for community-based systems.
2. Business processes, requirements and designs document, and other technical documentation for community-based systems.
3. Training and continuous capacity building plan.
4. Sustainability plan.



### Broad activities

1. Develop shared vision for digitalization of community health services.
2. Develop requirements for an integrated suite of software tools for electronic community health services.
3. Redesign/improve and/or develop community-based system with application programming interface (API) and integrate with dispensary and health care unit systems.
4. Establish technical team to provide ongoing support to end users.
5. Provide training and continuous support.
6. Develop a plan for sustainability.
7. Roll out electronic community health volunteers.



# Investment

Digitalize integrated health surveillance

# 20

## OVERVIEW

This investment area focuses on strengthening integrated disease surveillance and response systems across all levels of the health system. This will include rolling out an electronic integrated diseases surveillance and response system and putting in place change management interventions to promote system adoption and continuous usage.



### Outputs

1. Electronic integrated diseases surveillance and response (eIDSR) is rolled out and functional.
2. Call center for surveillance, risk communication, and community engagement established and functional.
3. eIDSR technical working group established.
4. Training and continuous capacity building plan.
5. Sustainability plan.



### Broad activities

1. Develop terms of reference for and establish eIDSR technical working group.
2. Develop business processes and requirements for the health surveillance system.
3. Develop health surveillance system with application programming interface (API) and integrate with existing hospital and primary health care unit system.
4. Leverage resources with stakeholders such as the Government of Zanzibar, implementing partners, development partners, and the private sector (i.e., telecommunication companies).
5. Establish call center for surveillance, risk communication, and community engagement.
6. Provide training and continuous support.
7. Develop a plan for sustainability.
8. Roll out eIDSR.

## Results area 4

Data use culture at all levels of the health system institutionalized



# Investment

Strengthen telemedicine services to improve equitable access to specialized health services

# 21

## OVERVIEW

Telemedicine services involve the use of telecommunications infrastructure to support delivery of health services such as teleconsultants, teleradiology, and tele-education to remote communities or facilities. Telemedicine provides an alternative approach to addressing some health system challenges related to reaching rural, remote, and underserved areas with specialized care.



## Outputs

1. Improved information and communication technology (ICT) infrastructure to support operationalization of telemedicine services.
2. Telemedicine support devices available to facilitate telemedicine services.
3. Telemedicine guidelines in place.



## Broad activities

1. Develop infrastructure requirements necessary to support telemedicine services.
2. Conduct infrastructure assessment to determine facility readiness to support telemedicine services.
3. Procure and install/upgrade ICT infrastructure in identified facilities.
4. Conduct training of health professionals and ICT officers at all levels on how to operate and maintain the services.
5. Develop telemedicine guidelines and operation manuals to facilitate telemedicine services.
6. Provide continuous support and maintenance of the ICT infrastructure.

# Investment

Institute data use culture at all levels of the health system

# 22

## OVERVIEW

This investment will focus on strategic approaches to bridge current and future gaps in data use at all levels of the health sector. Such approaches will include creating continuous and sustainable mechanisms for building the capacity of health workers at scale in order to bridge the data use skills gap; identifying data needs for each level of the health system; ensuring data are available and used; and developing tools and guidelines to support health workers at all levels of the health system to effectively use data in making decisions.



## Outputs

1. Data use toolkit and guidelines.
2. Improved health workers' curricula (pre-service and in-service) incorporating aspects of data use and data systems.



## Broad activities

1. Develop a data use toolkit, including guidelines and change management practices, for all levels of the health system.
2. Review and strengthen data use practices in pre-service and in-service training curricula for all health care workers in line with the digital transformation guidelines.
3. Provide ongoing support to training institutions to use updated pre-service and in-service training curricula.
4. Enhance existing skill-development tools and resources to include data use practices.
5. Sensitize national policymakers and train national leaders and facilitators on the data use toolkit and mentorship.
6. Hold national-level stakeholder workshops to socialize the data use toolkit and the health data governance structure.
7. Assess rollout and uptake of the data use toolkit and changes in health data governance.

# Investment

Implement Zanzibar integrated health data warehouse and visualizer

# 23

## OVERVIEW

Visual elements and tools—including charts, graphs, and maps—provide an easier way for health workers and managers at all levels to see and understand patterns and relationships in data and indicators across multiple data sources. The implementation of a Zanzibar integrated health data visualizer will include identifying multisector indicators and data visualization needs for different levels of the health system and putting in place a data warehouse with appropriate visualizations to support data use for all levels of the health system.



## Outputs

1. Documented indicators and data visualizations needs for all levels of the health system.
2. Requirements specification document for the national health data warehouse.
3. Zanzibar health data warehouse in place.
4. Maintenance and sustainability plan for the national health data warehouse.



## Broad activities

1. Identify indicators for data use at all levels (national, councils, and facility levels).
2. Identify data visualizations needs of end users at each level.
3. Build on existing requirements, including further specifying the key users and their data needs (including features and visualizations) and identifying data sources.
4. Develop or adapt the data warehouse.
5. Train national decision-makers in the use of the data warehouse, and train trainers.
6. Perform ongoing review to ensure the data warehouse meets evolving needs.
7. Perform ongoing maintenance, customization, and user support.
8. Develop a plan for sustainability and ownership of the system.

# Investment

Implement digital solution for health promotion

# 24

## OVERVIEW

This investment focuses on raising awareness of public health care services and promoting health-seeking behaviors through the use digital tools. This investment also focuses on promoting interaction between the community and health care delivery system to improve clients' experience and health service delivery.



### Outputs

1. Health promotion shared vision.
2. Health promotion digital platform.



### Broad activities

1. Develop health promotion shared vision.
2. Develop business processes, use cases, and requirements to support health promotion.
3. Develop health promotion platform system with application programming interface (API) to integrate with multiple reporting channels.
4. Prepare content in various formats to be used by different users at all levels of the health system.
5. Prepare technical documentation and dissemination materials.
6. Prepare sustainability plan.
7. Establish technical team and develop its capacity to provide ongoing support.

# Investment

Implement digital solution for client feedback

# 25

## OVERVIEW

One of the key interventions to improve the quality of care in the health service delivery system is to advocate for feedback from health service recipients/clients. The Zanzibar digital health strategy has identified and prioritized a client feedback system as one of the components to facilitate quality improvement in delivery of health services at all levels.



## Outputs

1. Client feedback shared vision.
2. Client feedback system.
3. Sustainability plan.



## Broad activities

1. Develop client feedback shared vision.
2. Develop business processes, use cases, and requirements for client feedback system.
3. Develop client feedback system with application programming interface (API) to integrate with multiple reporting channels.
4. Prepare technical documentation and dissemination materials.
5. Prepare sustainability plan.
6. Establish technical team and develop its capacity to provide ongoing support.



# Implementation approach





## Resource mobilization

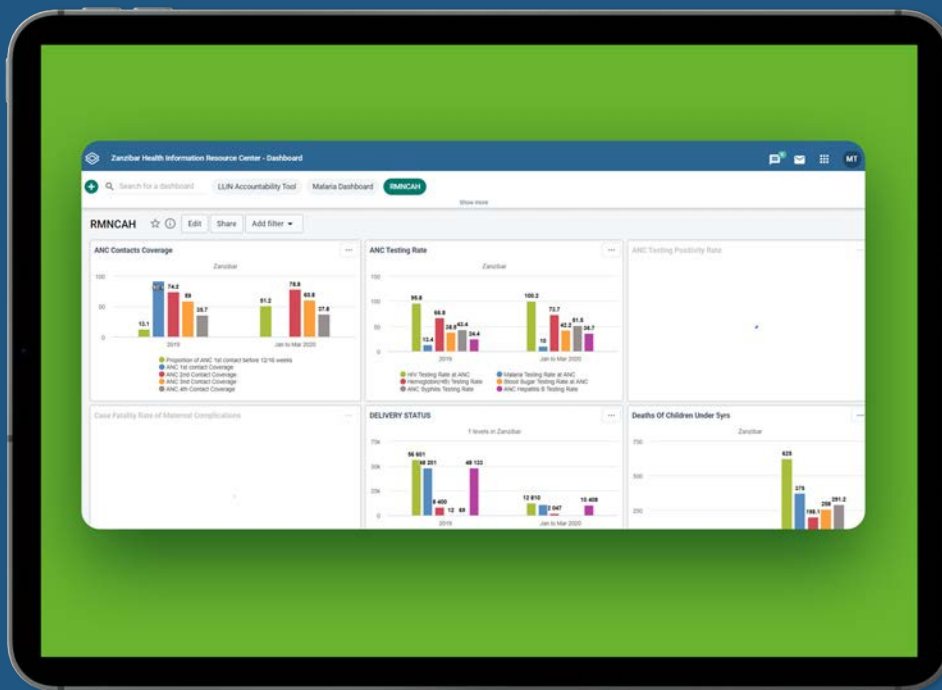
The Zanzibar Digital Health Strategy 2020/21–2024/25 outlines how Zanzibar intends to leverage digital health technologies to meet the health sector’s goals and objectives. To achieve digital transformation of the health system in Zanzibar, the digital health strategy identifies eight strategic objectives, namely:

## Research, innovation, and development in digital health

The health sector is among the most data-intensive sectors. There is increasing availability of large volumes of health data from more sources than ever before. It is therefore important to explore innovative approaches for the effective management and efficient use of big data and emerging technologies for the sustainable, scalable, and value-based transformation of health service delivery and, hence, the wider health system. Emerging technologies—such as the Internet of Things, wearables and sensors, block chain, virtual reality, artificial intelligence including machine learning, and big data analytics—have the potential to generate actionable insights to ensure the attainment of universal health coverage, high-quality data, and effective and efficient health service delivery.

The MOHSEGC Zanzibar—in collaboration with universities, research institutions, and other stakeholders—will invest in research, innovation, and development to explore how existing and emerging digital technologies can be harnessed to inform the evidence-based and cost-effective application of digital health technologies. This will include:

1. Conducting research and innovation activities to improve adoption of digital technologies in the health sector.
2. Translating research evidence and information into policy and practice.
3. Conducting operational and implementation research on digital health to inform decision-making, policy, and practice.
4. Conducting research on emerging technologies to inform their use in the health sector.
5. Promoting the establishment of digital health incubation centers.



# Monitoring, evaluation, and learning

The goal of monitoring, evaluation, and learning is to ensure that the Zanzibar Digital Health Investment Roadmap 2020/21–2024/25 delivers according to the national health priorities and the planned activities are implemented in the right way to yield the desired outcomes. In this regard, monitoring, evaluation, and learning will be instituted as a strategic review mechanism to monitor progress, assess outcomes, and inform appropriate measures to be taken to deliver in accordance with the strategic priorities and expectations. The monitoring, evaluation, and learning will be participatory, involving stakeholders in the implementation of the initiatives as outlined in this roadmap.

## Monitoring

To monitor the implementation of the initiatives, the following shall be done:

1

Definition of process, inputs and output indicators that will be used to monitor progress and course correct the implementation of digital health investment roadmap.

2

Review of digital health action plans in line with the strategic priorities and initiatives.

3

Preparation and distribution of monitoring and reporting guidelines to all levels of the health system. The guidelines will include templates of data collection instruments, indicators, flow of information, reports, and reporting schedules.

4

Collection of information on structural, process, and outcome indicators that reflect the status of implementation of this roadmap.

5

Dissemination of reports on the status of the digital health strategy implementation to all levels of the health system and other stakeholders.

6

Development and implementation of monitoring and evaluation capacity initiatives to ensure high-quality outcomes.



## Evaluation

Evaluation is a critical and objective appraisal of the implementation of the digital health priorities. The evaluation will focus on performance and achievement of outputs, outcomes, and impacts. There shall be two main evaluation phases: The first will be conducted at the middle of implementation of the roadmap (midterm evaluation). The second evaluation will be conducted at the end of the fifth year (end-line evaluation).

In order to evaluate the implementation of this roadmap, the following shall be done:

### 1

- Definition of structural, process, and outcome indicators that provide informative and actionable insights into the implementation performance and adoption of digital health priorities, as well as tangible results for health-sector and non-health-sector stakeholders.

### 2

- Identification of baseline for all types of indicators—from output to outcomes—to allow effective evaluation of progress over the duration of the implementation.

### 3

- Collection of information related to the evaluation of structural, process, and outcome indicators that reflect the implementation of this roadmap.

### 4

- Engagement of an external evaluator for the midterm and final evaluations of the implementation of the strategy.

### 5

- Disseminate the evaluation reports on the implementation of the roadmap to all levels of the health system and other stakeholders.



## Learning

Learning is an important component of this roadmap. The aim is to analyze the data gathered from the continued monitoring and periodic evaluations (baseline, midterm, and end-line) to inform and thus improve implementation of this roadmap. The learning component of this roadmap will include:

### 1

- Periodic analysis and review of the process, structural, and outcome indicators to have real-time indicators.

### 2

- Periodic analysis and review of the stakeholders involved in the implementation of this roadmap, including newly identified and appropriate stakeholders.

### 3

- Periodic analysis and review of the resources required for the implementation of this roadmap.

### 4

- Analysis of the monitoring reports, best practices, and research findings for continuous learning to inform the implementation of this roadmap.

### 5

- Analysis of the midterm and final evaluation reports, and documentation of the lessons learned from implementation of this roadmap, to inform the next digital health strategy





# Investments prioritization, sequencing, and dependencies



# Investment sequencing and prioritization

The digital health investments outlined in this roadmap address end to end needs required to transform the health system in Zanzibar through the use digital technologies. It is key to note that, some investments depend on others for their successful implementation. Moreover, the investments have varying level of importance and priority which is based on MOHSEGC strategic direction. Figures 1 and 2 represent the sequencing and prioritization of investments across investment areas and within each investment area based on MOHSEGC priorities and the inter-dependencies among the investments.

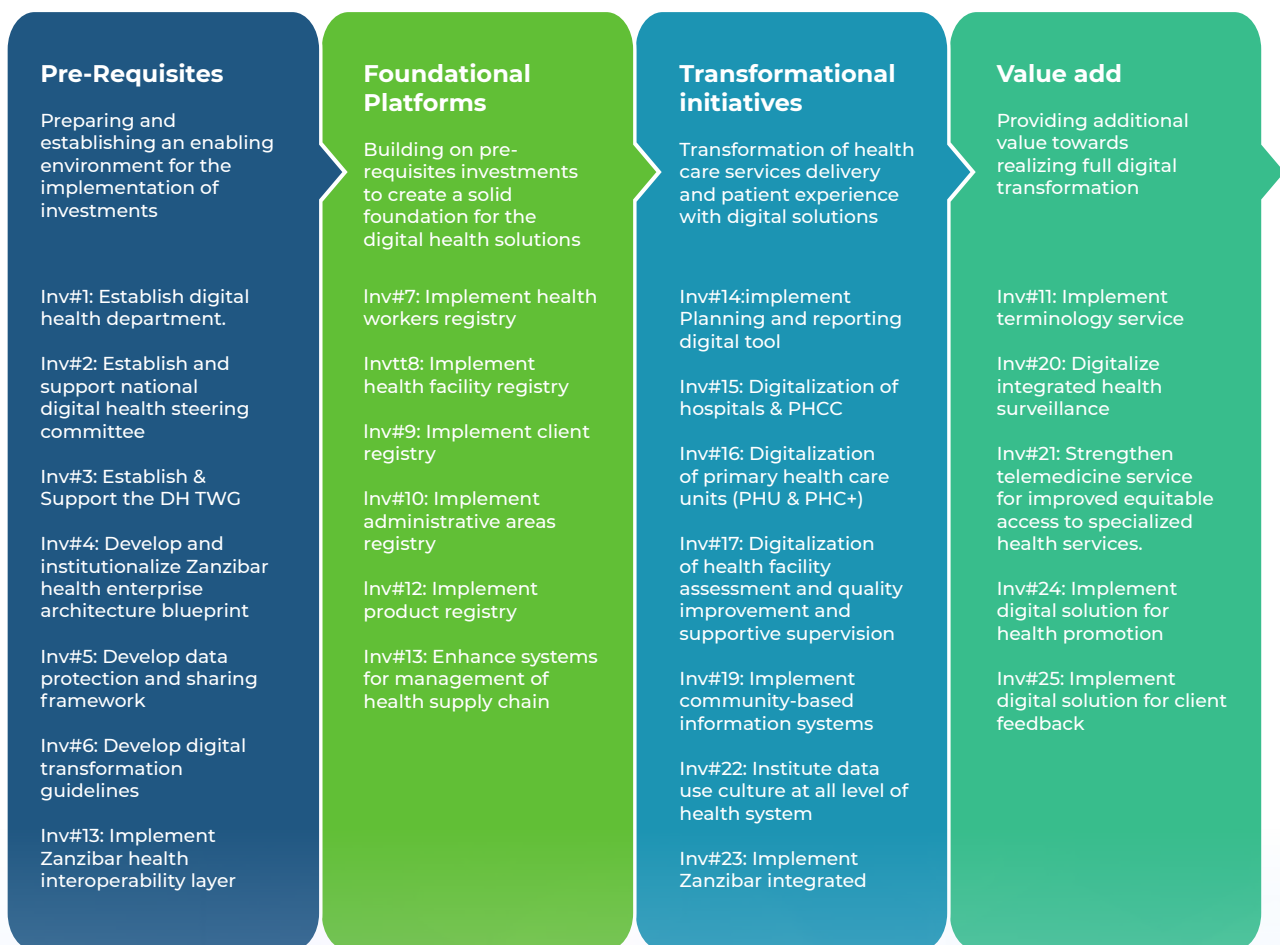


Figure 1. Investment sequencing and prioritization

# Investment dependencies

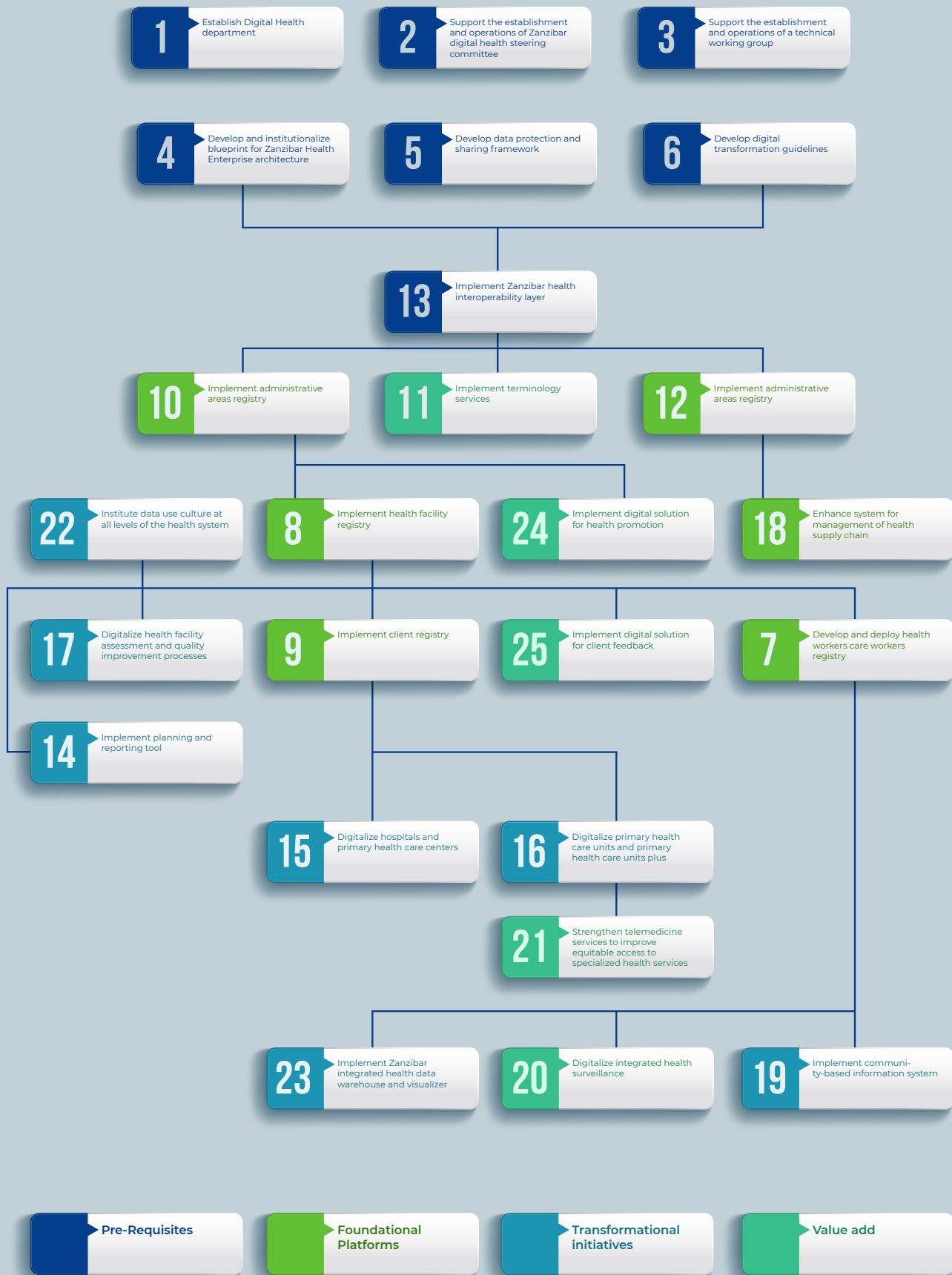
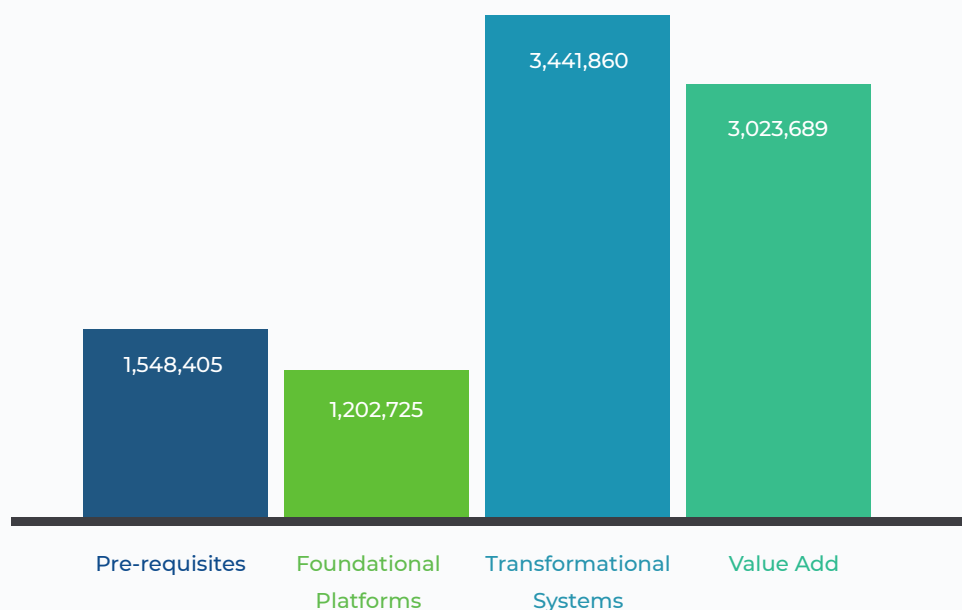


Figure 2. Investment dependencies



## Prioritized Investment cost



## Guiding principles

- 1. Design with users:** Actively engage end users from all levels of the health system in the planning, development, and implementation of digital health solutions to ensure their voices are heard and solutions are responsive to their needs.
- 2. Be data-driven:** Ensure that high-quality information is available to the right people when they need it, that people have capacity to use data, and that data use is embedded into decision-making processes.
- 3. Harness open standards, open data, open source, and open innovation:** Promote the use of open standards and interoperable digital solutions to facilitate seamless and secure information exchange.
- 4. Build for scale-up and sustainability:** For each investment recommendation, the government and its partners should think beyond the pilot and make choices that will enable widespread adoption, affordability, and usability later. They should plan for sustainability from the beginning.
- 5. Build for local ownership of solutions and data:** Prioritize use of local personnel, local capacity building, and local ownership.
- 6. Context-appropriate and interoperable digital solutions:** Implemented solutions should be context specific instead of one size fits all.
- 7. Cost-effective and operationally efficient digital solutions:** Digital tools should be designed to support health sector processes and address health-sector challenges, not to simply put paper-based data forms onto screens.
- 8. Protect data, and patient privacy and confidentiality:** The way health data are managed must protect client privacy and confidentiality, and ensure data are securely stored and transmitted.
- 9. Comply with national policy, and legal and regulatory frameworks:** Implemented solutions should follow national policy, as well as legal and regulatory frameworks.

## Summary of costs for each result area

Result area	Cost per result area
<b>Result area 1:</b> Stronger digital health leadership and governance established and operable	1,205,605.00
<b>Result area 2:</b> Critical foundational systems implemented	1,758,539.00
<b>Result area 3:</b> Interoperable, scalable, and client-centered end-user system deployed	3,762,110.00
<b>Result area 4:</b> Data use culture at all levels of the health system institutionalized	2,490,425.00
Crosscutting investments	645,167.53
<b>Total</b>	<b>9,861,846.53</b>

## Summary of costs for each initiative

S/N	Initiative	Total (USD)
1.	Establish digital health department	232,815.00
2.	Support the establishment and operations of a Zanzibar digital health steering committee	110,455.00
3.	Support the establishment and operations of a technical working group	127,460.00
4.	Develop and institutionalize a blueprint for the Zanzibar health enterprise architecture	540,125.00
5.	Develop data protection and sharing framework	113,400.00
6.	Develop digital transformation guidelines	81,350.00
7.	Develop and deploy health care worker registry	201,925.00
8.	Implement health facility registry	243,250.00
9.	Implement client registry	248,550.00
10.	Implement administrative area registry	325,950.00
11.	Implement terminology services	176,200.00
12.	Implement product registry	219,864.00
13.	Implement Zanzibar health interoperability layer	342,800.00
14.	Implement planning and reporting tool	332,550.00
15.	Digitalize hospitals and primary health care centers	1,067,885.00
16.	Digitalize primary health care units and primary health care units+	814,650.00
17.	Digitalize health facility assessment and quality improvement processes	245,575.00
18.	Enhance systems for management of health supply chain	183,050.00
19.	Implement community-based information systems	788,650.00
20.	Digitalize integrated health surveillance	329,750.00
21.	Strengthen telemedicine services to improve equitable access to specialized health services	1,460,450.00
22.	Institute data use culture at all levels of the health system	314,700.00
23.	Implement Zanzibar integrated health data warehouse and visualizer	192,550.00
24.	Implement digital solution for health promotion	268,000.00
25.	Implement digital solution for client feedback	254,725.00
26.	Crosscutting investments	645,167.53
<b>Total</b>		<b>9,861,846.53</b>

## Appendix I: Time frame

S/N	Strategic results and initiatives	Time frame				
		Year 1	Year 2	Year 3	Year 4	Year 5
	<b>Result area 1: Stronger digital health leadership and governance established and operable</b>					
1.1	Establish digital health department					
1.2	Support the establishment and operations of a Zanzibar digital health steering committee					
1.3	Support the establishment and operations of a technical working group					
1.4	Develop and institutionalize a blueprint for the Zanzibar health enterprise architecture					
1.5	Develop a data protection and sharing framework					
1.6	Develop digital transformation guidelines					
	<b>Result area 2: Critical foundational systems implemented</b>					
2.1	Develop and deploy health care worker registry					
2.2	Implement health facility registry					
2.3	Implement client registry					
2.4	Implement administrative area registry					
2.5	Implement terminology services					
2.6	Implement product registry					
2.7	Implement Zanzibar health interoperability layer					
	<b>Result area 3: Interoperable, scalable, and client-centered end-user system deployed</b>					
3.1	Implement planning and reporting tool					
3.2	Digitalize hospitals and primary health care centers					
3.3	Digitalize primary health care units and primary health care units+					
3.4	Digitalize health facility assessment and quality improvement processes					
3.5	Enhance systems for management of health supply chain					
3.6	Implement community-based information systems					
3.7	Digitalize integrated health surveillance					
3.8	Strengthen telemedicine services to improve equitable access to specialized health services					
<b>4</b>	<b>Result area 4: Data use culture at all levels of the health system institutionalized</b>					
4.1	Institute data use culture at all levels of the health system					
4.2	Implement Zanzibar integrated health data warehouse and visualizer					
4.3	Implement digital solution for health promotion					
4.4	Implement digital solution for client feedback					
<b>5</b>	<b>Crosscutting investments</b>					
	Monitoring, evaluation, and learning					



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