

**THE UNITED REPUBLIC OF TANZANIA**  
Ministry of Health, Community Development, Gender, Elderly and Children

# **THE NATIONAL DIGITAL HEALTH STRATEGY**

**2019 – 2024**

**DRAFT**

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# LIST OF ABBREVIATIONS

<b>CHMT</b>	Council Health Management Team
<b>DHIS 2</b>	District Health Information System Software Version 2
<b>eGA</b>	e-Government Agency
<b>EHR</b>	Electronic Health Record
<b>eIDSR</b>	Electronic Integrated Diseases Surveillance and Response System
<b>EMR</b>	Electronic Medical Record
<b>GePG</b>	Government Electronic Payment Gateway
<b>HCMIS</b>	Human Capital Management Information System
<b>HFeMS</b>	Health Facility Electronic Management System
<b>HFR</b>	Health Facility Registry
<b>HIS</b>	Health Information System
<b>HMIS</b>	Health Management Information System
<b>HMT</b>	Hospital Management Team
<b>HoMIS</b>	Hospital Management Information System
<b>HRHIS</b>	Human Resource for Health Information System
<b>HSSP IV</b>	Health Sector Strategic Plan IV
<b>ICT</b>	Information and Communication Technology
<b>iHFeMS</b>	Integrated Health Facility Electronic Management System
<b>ITU</b>	International Telecommunication Union
<b>LAN</b>	Local Area Network
<b>M&amp;E</b>	Monitoring and Evaluation
<b>MDAs</b>	Ministries, Departments and Agencies
<b>MoHCDGEC</b>	Ministry of Health, Community Development, Gender, Elderly and Children
<b>MUHAS</b>	Muhimbili University of Health and Allied Sciences
<b>NDHSC</b>	National Digital Health Steering Committee
<b>NDHS</b>	National Digital Health Secretariat
<b>NHIF</b>	National Health Insurance Fund

<b>PORALG</b>	President's Office, Regional Administration and Local Government
<b>RHMT</b>	Regional Health Management Team
<b>SWAp</b>	Sector-Wide Approach
<b>TC-SWAp</b>	Technical Committee Sector-Wide Approach
<b>TIIS</b>	Training Institution Information System
<b>TWG</b>	Technical Working Group
<b>UHC</b>	Universal health coverage
<b>WHO</b>	World Health Organisation

# DEFINITION OF TERMS

1. **Continuity of care** is the degree to which a series of discrete health care events is experienced by people as coherent and interconnected over time and consistent with their health needs and preferences.
2. **Digital health and eHealth** (used interchangeably in this document) is an umbrella term to encompass all concepts and activities at the intersection of health and information and communications technologies (ICTs), including mobile health (mHealth), health information technology, electronic health records (EHRs), and telehealth. It encompasses three main functions:
  - The delivery of health information to health professionals and health clients through the Internet and telecommunications media;
  - The use of ICTs to improve public health services (e.g., through the education and training of health workers);
  - The use of health information systems (HIS) to capture, store, manage, or transmit information on patient health or health facility activities.
3. **Digital health solution** is an individual digital product or service (or a combination of multiple products or services) created to serve a specific health system objective. It often encompasses a set of ICT infrastructure and services required to improve effectiveness and efficiency of the health system.
4. **Digital health system** is the interrelated set of technologies, processes, and structures within a digital health ecosystem, typically encompassing numerous solutions and organisations.
5. **Electronic medical record (EMR)** is an electronic record of medical information of an individual that can be created, gathered, managed, and consulted by authorized clinicians and staff within one health care organisation.
6. **Enterprise architecture** is a blueprint for organisational change defined in models that describe (in both business and technology terms) how the entity operates today and how it intends to operate in the future. It also includes a plan for transitioning to this future state<sup>1</sup>.

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<sup>1</sup>Hite RC. Enterprise Architecture: Leadership Remains Key to Establishing and Leveraging Architectures for Organisational Transformation. Technical Report GAO-06-831, United States Government Accountability Office; 2006 Aug. <https://www.gao.gov/assets/260/251127.pdf>. Accessed 8th April 2019.

7. **Health system** consists of all organisations, people and actions whose primary intent is to promote, restore, or maintain health. This also encompasses the people, institutions, resources, and policies that governments put in place to improve public health.
8. **System integration** is the process of aggregating the components of a system or sub-systems into one, so that the resulting system can deliver the overarching functionality.
9. **System interoperability** is the ability of different information technology systems to communicate with one another and exchange data.
10. **mHealth** is the delivery of health care services through the use mobile networks and devices.
11. **Telehealth** refers to the use of telecommunications and virtual technology to deliver health care within and outside of traditional health-care facilities. It also includes use of teleconferencing and eLearning systems for remote non-clinical services such as provider training, administrative meetings, and continuing medical education, in addition to clinical services.
12. **Telemedicine** is a subset of telehealth that refers solely to the provision of health care services and education over a distance using telecommunication technologies.

# ACKNOWLEDGMENT

The Tanzania Digital Health Strategy 2019 - 2024 resulted from a consultative and collaborative approach which engaged stakeholders at different levels in the health and other sectors.

The Ministry of Health Community Development, Gender, Elderly and Children (MoHCDGEC) extends sincere gratitude to all the stakeholders for their valuable technical contributions during the process of developing this Strategy. It is not possible to mention all stakeholders but this task could not have been accomplished without their valuable support. We extend our gratitude to all the contributors.

I would like to recognise and appreciate the important contributions of the Ministries, Departments and Agencies (MDAs); Regional Administrative Secretaries (RASs); Regional Health Management Teams (RHMTs); Regional ICT Officers; Municipal/Town/District Executive Directors; Council Health Management Teams (CHMT); District ICT Officers; Hospital Management Teams (HMTs) of public and private hospitals; training institutions; professional councils; regulatory bodies; vertical programmes; and development and implementing partners.

The MoHCDGEC expresses special appreciations to PATH for the technical and financial support for assessing implementation of the National eHealth Strategy 2013 - 2018 as well as developing the National Digital Health Strategy 2019 - 2024. The Ministry is also grateful to all government officers at MoHCDGEC and PORALG for their coordination, overall guidance and tireless technical support throughout the development of the Digital Health Strategy.

Furthermore, the Ministry would like to recognise the team of consultants from the Muhimbili University of Health and Allied Sciences (MUHAS) and the College of Business Education (CBE) for assessing the implementation of the National eHealth Strategy 2013 - 2018 and leading the development of the National Digital Health Strategy 2019 - 2024.

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

**Dr. Zainab Chaula**

**Permanent Secretary, Ministry of Health, Community Development, Gender, Elderly and Children**



# FOREWORD

The development of any nation depends largely on the health status of its population. Tanzania strives to become a middle-income economy, with the health sector providing high quality health care for all through a universal health coverage. Digital technologies play a potential fundamental role in facilitating timely availability of quality health information for provision of better quality health care services, and thus digital health solutions should respond to clients' needs through user-centred design to ensure responsive, resilient and inclusive health system.

The Government of Tanzania is committed to improving the application of digital health technologies in order to facilitate attainment of her overall objective of delivering high quality health services to all citizens. This is evidenced by implementation of the National eHealth Strategy 2013-2018 to accelerate the health system transformation by enabling timely information access and supporting healthcare administrative, financial and clinical operations to enhance decision making.

The outcomes of the National eHealth Strategy 2013-2018 implementation include improvements in quality of health services delivery, revenue collection and management, human resource management, supply chain management of health commodities, health information management, and planning and decision making at different levels of the health system.

The National Digital Health Strategy 2019 - 2024 is in line with the Tanzania Development Vision 2025 and the Health Sector Strategic Plan 2015 –2020 emphasizing provision of quality health care to all households. It facilitates realization of the Health Policy 2019 priorities to achieve universal health coverage in Tanzania. The current situational analysis indicates existence of multiple digital health systems across the health sector operating in silos. The Government will build on on-going efforts to ensure that digital health systems are implemented in a well-coordinated and interoperable manner. Moreover, this Strategy seeks to address challenges affecting utilization of digital health for better health outcomes.

The digital health technologies facilitate sharing and protection of information and unique identification of clients at all points-of-service in the health system. Furthermore, sharing of clients' health information is critical to ensuring continuity of quality health care. The Government will make sure clients' information is shared in accordance with acceptable digital health standards that ensure client safety, and data security, confidentiality and privacy.

Thus, the Digital Health Strategy will greatly improve the health system performance, which will result in improved quality sustainable healthcare service delivery and population health outcomes as well as fast-tracking achievement of universal health coverage and health-related United Nations Sustainable Development Goals; and eventually leading to a healthier nation.

I, therefore, would like to call upon all public and private stakeholders to tirelessly contribute towards a successful implementation of the Digital Health Strategy 2019 – 2024.

**Hon. Ummy Ally Mwalimu (MP)**

**Minister, Ministry of Health, Community Development, Gender, Elderly and Children**

# EXECUTIVE SUMMARY

The application of digital health technologies has great potential of making a health system to be more responsive to health needs of the population. Thus, the Government of Tanzania, through the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC), is committed to the effective application of the digital technologies to improve population and individual health outcomes by facilitating evidence-based actions at all levels of the health system. This Strategy outlines how Tanzania intends to leverage digital health technologies and builds on the achievements and experience from the implementation of the National eHealth Strategy 2013 – 2018.

The implementation of the National eHealth Strategy 2013-2018 has contributed to improved quality of health services delivery, revenue collection and management, human resource management, supply chain management of health commodities, health information management, and planning and decision making at different levels of the health system. These achievements are results of several initiatives, including installation of local area networks (LAN) and national ICT backbone (NICTBB) network in national, zonal and regional hospitals. The eHealth governance and leadership at national level was also established. The Government strengthened and scaled up the district health information software version 2 (DHIS2) and implemented the Planning and Reporting (PlanRep) system in all councils. It implemented the facility financial accounting and reporting system (FFARS) at health facilities, an electronic logistics management information system (eLMIS) countrywide and Epicor 9 at Medical Stores Department (MSD). The Government also successfully rolled out of an electronic integrated disease surveillance and response system (eIDSR) countrywide and implemented an electronic health facility registry (HFR) as well as the national sanitation management information system (NSMIS).

Despite these achievements, a number of challenges affected successful implementation of the Strategy. These included: inadequate ICT infrastructure; unreliable electric power supply; limited financial resources; inadequate skilled ICT personnel; limited eHealth skills among users and decision makers; user-unfriendliness of some eHealth digital solutions; and resistance to adopt eHealth solutions as well as the existence of multiple fragmented eHealth

information systems that were not interoperable and/or not well aligned with the workflow in the health sector which contributed to added workload to health workers.

This Strategy outlines what needs to be done in the next five years from 2019 to 2024, to fast-track progress toward attainment of universal health coverage and the health specific Sustainable Development Goals (SDGs). The Strategy will also address challenges encountered in the digitalisation of the health sector in Tanzania.

**Vision:** Better health outcomes through digitally-enabled health system

**Mission:** To accelerate the transformation of the Tanzanian health care system through innovative, data-driven, client centric, efficient, effective, and integrated digital health solutions.

This Strategy consists of five strategic goals and ten priorities as indicated below.

Strategic Goals	Strategic Priorities
1. Strengthened governance and leadership	1. Strengthen digital health governance and leadership to facilitate better coordination and implementation of digital health initiatives
2. Improved client experience	2. Improve efficiency, patient safety, quality and continuity of care through digitalisation of health service delivery in a holistic manner
3. Health providers and managers empowered to take evidence-based actions	3. Improve health workforce competency and equitable access to specialised care through the use of telehealth
4. Sustained availability of health resources	4. Promote healthy behaviour through access to relevant health education and information
5. Standardised information exchange	5. Enhance seamless and secure information exchange
	6. Improve data use for evidence-based actions
	7. Improve supply chain management of health commodities
	8. Improve management of human resources
	9. Improve management of financial resources
	10. Strengthen disease prevention, surveillance, detection, reporting, response and control

The implementation of the Digital Health Strategy will be managed by a National Digital Health Steering Committee (NDHSC) that shall be chaired by the Permanent Secretary at MoHCDGEC and co-chaired by the Deputy Permanent Secretary responsible for health at PORALG. A costed action plan will be developed to guide the implementation of the Strategy. The Digital Health Technical Committee will be responsible for day-to-day implementation and supervision of digital health initiatives through the Digital Health Strategy annual action

plans. Various digital health committees will be responsible for implementation and supervision of digital health initiatives at health facility and institutional levels.

# 1. Introduction

## 1.1 Background

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The application of digital technologies aims to increase the efficiency and quality of health care delivery to improve the health outcomes of all Tanzanians<sup>1</sup>. Digital health technologies have potential to accelerate transformation of the health system, thus leading to: *improved population health, enhanced responsiveness of the health system, and fair financing and financial risk protection for households*<sup>2</sup>. In addition, the use of digital technologies will support the efforts of the Government of Tanzania and stakeholders to achieve the universal health coverage (UHC), and the Sustainable Development Goals (SDG) particularly SDG 3 on good health and wellbeing<sup>3</sup>. The Strategy will also contribute to the achievement of the Tanzania Vision 2025<sup>4</sup>.

The Government through the Ministry of Health, Community Development, Gender, Elderly and Children (MoHCDGEC) is promoting the effective use of digital technologies to improve provision of quality health services, client experience, health system strengthening, and health outcomes by facilitating evidence-based actions at all levels of the health system.

The overarching goal of the Digital Health Strategy 2019-2024 is to accelerate increased access to and improved quality, effective and efficient health care to all Tanzanians through digitally-enabled transformation of the health system.

## 1.2 The Need for the Digital Health Strategy

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The National Digital Health Strategy emerges from the broader national health and development goals. The Tanzania Development Vision 2025 and Health Policy 2019 envisage to attain high quality livelihood for all Tanzanians by ensuring access to quality primary health care for all, access to quality reproductive health services for all age-appropriate individuals and the reduction in maternal and infant mortality rates.

The Strategy seeks to strengthen the health system through the use of digital technologies for effective governance and leadership, efficient management of human resources for health (HRH), strengthened health information systems, improved financial management, efficient

supply chain management of health commodities and improved quality of health services delivery. Therefore, this Strategy provides guidance for planning, implementing and coordinating digital health initiatives in order to achieve UHC and improve population health outcomes.

### **1.3 Alignment of the Digital Health Strategy with National Policies and Strategies**

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This Digital Health Strategy aligns with key national policies and strategies. The National Health Policy 2019 aims to ensure that preventive, promotive, curative and rehabilitative quality health services are accessible to all individuals. The Policy also aims to strengthen the health system to be more resilient and responsive to the needs of the population through evidence-based interventions<sup>5</sup>. Furthermore, it recognizes digital health as an important enabler in transforming health care delivery by supporting health care processes, providing access to information as well as facilitating management and decision making in the health sector.

Similarly, the National Health Sector Strategic Plan IV 2015 – 2020 emphasises the importance of investing in the development of ICT infrastructure and systems in order to improve administrative processes, patient/client recording, and communication. The Ministry strives to ensure by 2020 all hospitals and at least 25% of primary health care facilities utilize ICT applications for administrative, financial and clinical operations as well as ensuring interoperability among the digital health systems<sup>6</sup>.

The Tanzania Development Vision 2025 and the National ICT Policy 2016 recognize the application of ICT as a central pillar to a competitive social and economic transformation due to the fact that ICT is one of the major driving forces for the realization of the Vision 2025. Specifically, the National ICT Policy 2016 focuses on the application of ICT to enhance delivery of social services including health services.

### **1.4 The Approach used in Developing the Digital Health Strategy**

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This Strategy was developed using analytical and participatory approaches. A critical analysis was conducted to assess the current situation of the use of digital health technologies in local and global contexts. It was guided by the World Health Organisation (WHO) and the International Telecommunication Union (ITU) National eHealth Strategy Toolkit, the assessment report of the National eHealth Strategy 2013-2018 implementation, the National Health Policy 2019 and other related documents. Several consultative workshops and key

informant interviews were conducted involving multi-disciplinary stakeholders at national, zonal, regional and district levels as well as training institutions. In addition, Ministries, Departments and Agencies (MDAs) and development and implementing partners were also consulted. This comprehensive approach provided a unique opportunity to solicit views, inputs and recommendations from key stakeholders for development of this Strategy.



## 2. Situational Analysis

The situational analysis of digital technology potentials in the health sector focused on three main areas: existing gaps in the health system building blocks as identified in the national health policy (Table 1); appropriate remedial measure(s) which can better be delivered through ICT; and Strengths, Weaknesses, Opportunities and Challenges (SWOC) analysis (Table 2) for the implementation of the National Digital Health Strategy 2019 - 2024.

### 2.1 Overview of the Health System in Tanzania

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The health system in Tanzania is well-organised in pyramidal structure from the community to the national level (Figure 1). The foundation of this pyramidal structure is primary health care services comprising community-based health services, dispensaries, health centres and district hospitals. Community-based health services focus on health promotion and prevention. Dispensaries provide basic preventive and curative outpatient services and labour and delivery services while health centres provide outpatient and inpatient health services. At the district level, hospitals provide medical and surgical services to referred patients from health centres. Specialised health care services are provided by the regional referral hospitals. Zonal and national hospitals provide advanced health care and also serve as teaching hospitals.

The MoHCDGEC has the overall responsibility for provision of health and social welfare services. It sets the policy and guidelines; provides technical guidance to organisations involved in service delivery; defines priorities; mobilizes resources; and promotes standards for health and social welfare services.

The President's Office – Regional Administration Local Government (PORALG) coordinates and monitors the provision of health and social welfare services at regional and council levels. Regional Health Management Teams (RHMTs) supervise, monitor and build capacity of the Local Government Authorities (LGAs) in health and social welfare services. LGAs are responsible for planning, delivering and supervision of the services. The Council Health Management Teams (CHMTs) provide supportive supervision and capacity building for delivery of health and social welfare services delivery.

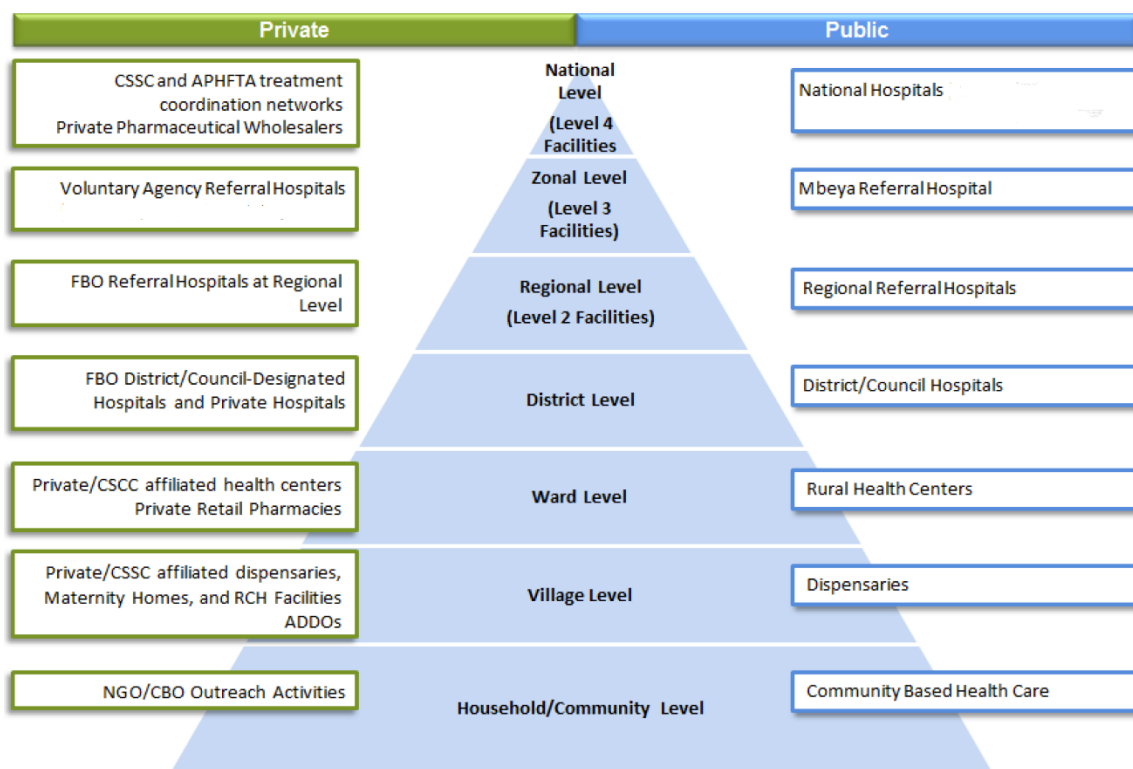


Figure 1: The health care pyramid in Tanzania (public and private equivalent) <sup>6</sup>

The Tanzania Health Policy 2019 outlines several issues and challenges in the health system. The Policy has prioritized the challenges affecting provision of health services and management of the health system performance and indicated policy statements and strategies for addressing these challenges. Some of the challenges and respective potential digital health interventions are presented in Table 1.

Table 1: The digital health potentials in addressing health system issues

Issues	Response through digital health
<b>Service delivery</b>	
Health services prioritized in the Health Policy 2019 include:  Health promotion, Community based health services, Nutrition, Immunization, Reproductive, Maternal, New-born, Child and Adolescent Health (RMNCA), Communicable Diseases, Non-Communicable Diseases (NCDs), Neglected	Improve the use digital health solutions including telehealth and mHealth to enhance access to quality health services.  mHealth and social media to improve provision of quality health education, information and communication to enable

Issues	Response through digital health
<p>Tropical Diseases (NTDs), Oral Health, Eye health, and super specialised health care services.</p> <p>The above health services have numerous issues that affect efficiency, quality, access, equity, awareness and coverage such as:</p> <ul style="list-style-type: none"> <li>• Limited public awareness on health promotion, prevention and curative services, geriatric services and rehabilitative and palliative care services</li> <li>• Low level of awareness among communities on promoting healthy behaviour, prevention, self-management, access to health care.</li> <li>• Increasing burden of communication and non-communicable diseases</li> <li>• Limited access to specialised health services</li> </ul>	<p>the community to adapt healthier behaviours and increasing health literacy in communities.</p> <p>Improve the use digital solutions to engage Community Health Workers (CHWs) for improved provision of community-based health services, and promote community engagement.</p> <p>Improve use of digital health solutions for surveillance, detection, reporting, response and control.</p> <p>Implement eReferral system to facilitate management of patient referrals and feedback.</p>
<b>Health workforce</b>	
<p>Multiple, disconnected human resource for health systems exist, staffing shortages and skills mix imbalance; uneven distribution of HRH; lack of up to date comprehensive workforce registry</p>	<p>Use of digital solutions for human resource information management to effectively address staffing shortages and skills mix imbalance. eLearning system, and other digital solutions for provision of pre-service and in-service education including continuing professional development</p>
<b>Medicines and Health Commodities</b>	
<p>Inadequate health commodities; inefficient supply chain management</p>	<p>Implement digital solutions for tracing and tracking of health commodities and strengthen logistics management information systems</p>
<b>Health care financing</b>	
<p>Ineffective health care service financial management information systems; limited financial resources; insufficient and fragmented health care financing strategies</p>	<p>Use of digital solutions to improve health financial management systems</p>
<b>Health information system</b>	

Issues	Response through digital health
Fragmented and interoperable health information systems; limited data use culture; low data quality; limited ICT infrastructure	Integration of various health management information system (HMIS) for improved data availability and use at all levels; capacity building on digital health systems and data use; improve ICT infrastructure
<b>Governance and Leadership</b>	
Inability to easily track performance of the health system and health providers, Weak governance and leadership, inefficient allocation of resources, inefficiencies in health services delivery, inadequate transparency, and failure to adherence to professionalism	Digital solutions will avail quality information for monitoring the performance of the health system and improve evidence-based decision making.

## 2.2 Digital Health Journey in Tanzania

Tanzania has made some remarkable progress on leveraging digital health in transforming the health system. This included initiatives aiming at establishing digital health governance and leadership and implementing digital health solutions. Initially, digital health solutions were primarily introduced to improve data collection and reporting of aggregate data with an emphasis on availability and accuracy of data at the national level. The increase in maturity level of digital technologies has shifted the focus from collecting and reporting aggregate data to client-level data as well as data use at all levels of the health system.

Currently, there are over 160 digital health or health-related systems. However, some of the systems have national coverage while other are institution-based. Some of them are at piloting phase while are operational with limited interoperability. Therefore, this Digital Health Strategy seeks to provide a strategic direction in the implementation of digital health solutions as well as addressing challenges affecting the implementation of these solutions to ultimately improve the effectiveness and efficiency of delivering healthcare services.

Figure 2 summarises major digital health milestones achieved in Tanzania.

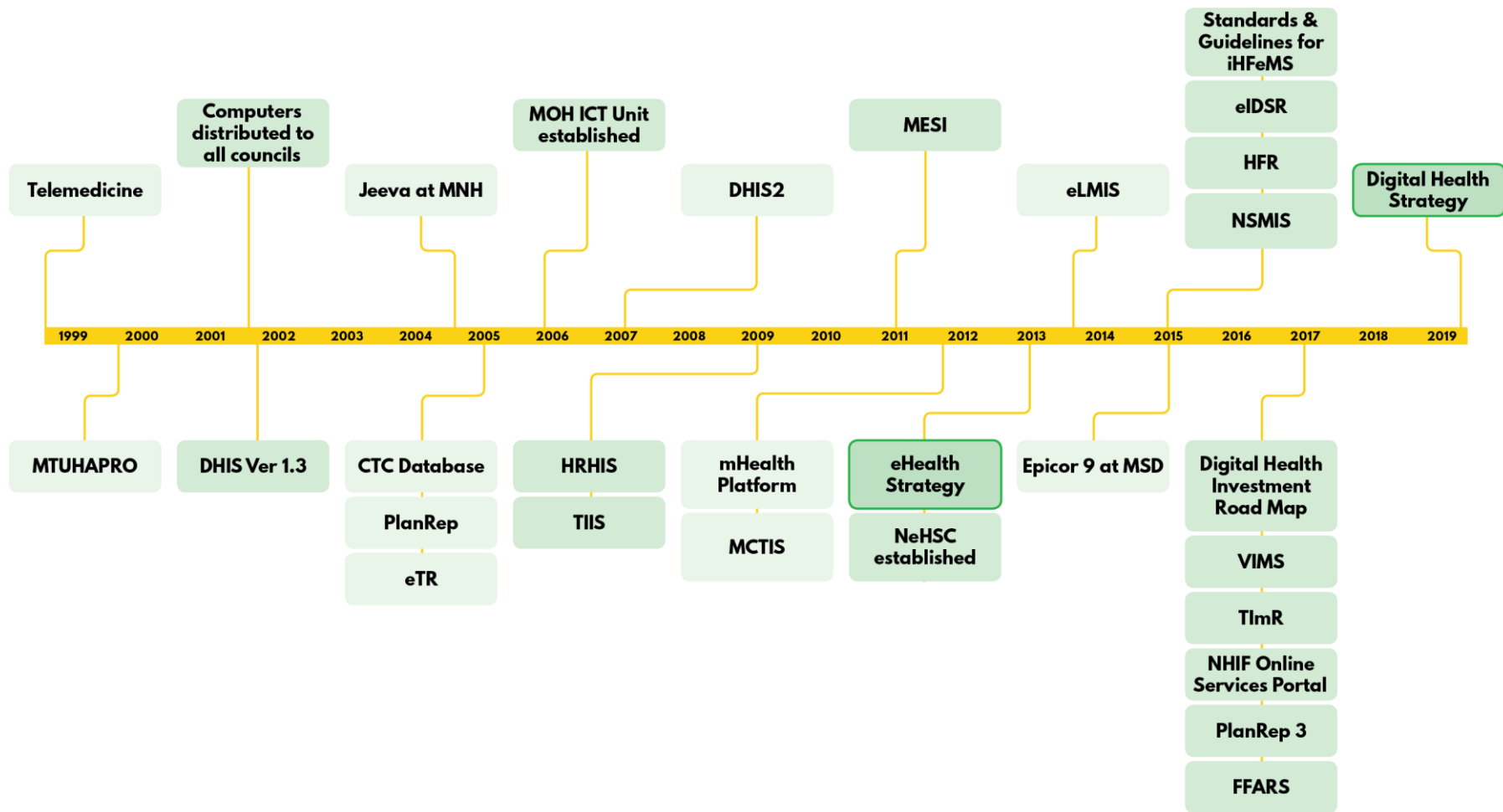


Figure 2. The Tanzania Digital Health Journey

## 2.3 SWOC Analysis

This section presents the SWOC analysis for the development and implementation of the Digital Health Strategy 2019-2024.

**Table 2: SWOC analysis**

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Commitment of the Ministerial leadership on the use of digital technologies to transform the health system</li> <li>• Lessons learnt from the implementation of eHealth Strategy 2013-2018</li> <li>• Use of digital technologies by health workers at all levels of the health system</li> <li>• Availability of at least one ICT staff in each region</li> <li>• Use of task sharing approach in addressing shortage of ICT staff</li> <li>• Increasing funding of digital health activities at all levels of the health system</li> <li>• Increasing penetration of Internet connectivity including NICTBB and mobile network</li> <li>• Availability of telemedicine infrastructure in some facilities</li> <li>• Existence of digital health information systems including integrated health facility electronic management systems (iHFeMS) in some facilities across different levels of the health system</li> <li>• Existence of computing infrastructure in some facilities</li> <li>• Existence of donor funded projects that support digital health activities</li> </ul>	<ul style="list-style-type: none"> <li>• Inadequate implementation of digital health structures at all levels.</li> <li>• Existence of multiple and fragmented digital health systems</li> <li>• Shortage of ICT personnel for implementation of digital health activities at all levels of the health systems</li> <li>• Limited eHealth skills among ICT personnel</li> <li>• Inadequate skills to use digital solutions among health workers and managers</li> <li>• Insufficient funds to implement digital health activities</li> <li>• Limited coverage of digitalisation of health care services</li> <li>• Dependency on donors in funding digital health initiatives</li> <li>• Poor quality of data in the digital health systems</li> <li>• Reluctance to use digital health solutions</li> <li>• Limited data use capacity</li> <li>• Limited national digital health legal and regulatory framework</li> <li>• Poor ICT infrastructure to support digital health solutions</li> </ul>

Opportunities	Challenges
<ul style="list-style-type: none"> <li>• Strong political will on the application of ICT for socio-economic development</li> <li>• Existence of Tanzania Development Vision 2025 that recognizes the use of ICT for development</li> <li>• Existence of the National ICT Policy 2016</li> <li>• Existence of eGA standards and guidelines on ICT infrastructure and systems</li> <li>• Existence of local training institutions that produce health and ICT professionals</li> <li>• Existence of development and implementing partners who are interested in supporting digital health</li> <li>• Emerging digital health technologies</li> </ul>	<ul style="list-style-type: none"> <li>• Limited budget to meet the competing needs and priorities in the health sector</li> <li>• Limited data use culture among health workers and managers for planning and decision making</li> <li>• Shortage of skilled health and eHealth workforce at all levels of the health system</li> <li>• Low digital literacy among health workers</li> <li>• Inadequate structured user-support and user-feedback mechanisms for many digital health systems</li> <li>• Lack of or unreliable electricity power supply in some facilities</li> <li>• Lack of or unreliable and slow Internet connectivity in some facilities</li> <li>• The donor-driven priorities in funding in the health sector activities including digital health</li> </ul>

## 2.4 Key Lessons from the Previous Strategy

The implementation of the first National eHealth Strategy 2013-2018 has established a strong foundation to accelerate sustainable adoption of digital technologies for transforming the health sector. The lessons learnt also provide avenues for improving existing and new digital health initiatives in the health sector.

According to the assessment results of the implementation of the eHealth Strategy 2013-2018, a number of improvements were recorded in the following areas: quality of health services delivery, patient experience, health promotion, disease surveillance, revenue collection and management, human resource management, supply chain management of health commodities, health information management, and planning and decision making at different levels of the health system.

These achievements resulted from execution of several initiatives including installation of local area network (LAN) and national ICT backbone (NICTBB) network in health facilities and institutions; existence of eHealth governance and leadership at the national level; strengthening and scaling up of DHIS2; implementation of planning and reporting (PlanRep) system in all councils; implementation of eLMIS countrywide; national rollout of an electronic integrated diseases surveillance and response system (eIDSR); implementation of an

electronic health facility registry (HFR); and implementation of the national sanitation management information system (NSMIS).

Other eHealth initiatives include: hospital management information systems (HoMIS); disease specific information systems such as CTC 2 and CTC 3 databases for HIV and AIDS, management information system for neglected tropical diseases (NTDMIS), electronic TB and Leprosy registers (eTR), and malaria management information systems; telemedicine infrastructure and services; vaccine information management system (VIMS); Tanzania immunization registry (TImR); mHealth platform for enhancing health education and information, reporting and client feedback; and National Health Insurance Fund (NHIF) e-solutions.

Despite these achievements, a number of challenges affected implementation of the Strategy. These include inadequate ICT infrastructure; unreliable electric power supply; limited financial resources; inadequate ICT personnel; user-unfriendliness of some eHealth digital solutions; inadequate digital literacy among health workers and managers; and resistance to adopt eHealth solutions as well as the existence of multiple eHealth information systems that were not interoperable and/or not well aligned with the workflow in the health sector. Furthermore, there is an unclear governance structure, and weak coordination and engagement of key stakeholders in the eHealth Strategy implementations at different levels of the health system.

In conclusion, the assessment report of the National eHealth Strategy 2013-2018 implementation recommended the need for strengthening digital health governance and leadership, establishing a digital health legal and regulatory framework, improving coordination and mobilization of resources for digital health implementation, building capacity of health workforce in digital health systems and data use, developing health enterprise architecture, improving and enforcing compliance with standards and interoperability among digital health systems, and strengthening ICT infrastructure.



# 3. Strategic Direction

## 3.1 Vision

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Better health outcomes through a digitally-enabled health system.

## 3.2 Mission

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To accelerate the transformation of the Tanzanian health system through innovative, data-driven, client centric, efficient, effective, and integrated digital health solutions.

## 3.3 Guiding Principles

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The implementation of this Strategy will be guided by the following principles:

1. **Client centric:** Digital technologies respond to clients' needs through user-centred design to ensure responsive, resilient and inclusive health system
2. **Data-driven:** The digital health initiatives focus on ensuring quality information is available to the right people when they need it.
3. **Interoperability:** Promote seamless and secure information exchange through open standards and interoperable digital solutions.
4. **Open standards and open source:** Promote data preservation and greater freedom from technology and vendor lock-in through use of open standards, open source and open innovation.
5. **Data security:** Ensure data security, privacy and confidentiality.
6. **Stakeholders engagement and coordination:** Actively engage stakeholders in planning, development and implementation of digital health solutions.

## 3.4 Strategic Goals

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1. Strengthened digital health governance and leadership
2. Standardised information exchange

3. Improved client experience through efficient provision of quality health services
4. Health providers and managers empowered to take evidence-based actions
5. Sustained availability of health resources

### 3.5 Strategic Priorities and Initiatives

The Digital Health Strategy defines strategic priority outcomes to be achieved by 2024. The strategic priorities were primarily derived from the National Health Policy 2019 and through a rigorous consultation process with key stakeholders in the health sector and from the desk research on the best practices in the area. Specifically, these strategic priorities articulate shared goals for the health sector stakeholders and support existing investment in digital health initiatives. The implementation of the strategic initiatives will result into measurable benefits for clients, health care service providers, decision makers and the broader health system.

Therefore, this Strategy focuses on the following vision, mission, strategic priorities and strategic initiatives.

<b>Vision</b>	Better health outcomes through a digitally-enabled health system
<b>Mission</b>	To accelerate the transformation of the Tanzanian health care system through innovative, data-driven, client centric, efficient, effective, and integrated digital health solutions.
<b>Strategic Goals</b>	<ol style="list-style-type: none"> <li>1. Strengthened digital health governance and leadership</li> <li>2. Standardised information exchange</li> <li>3. Improved client experience through efficient provision of quality health services</li> <li>4. Health service providers and managers empowered to take evidence-based actions</li> <li>5. Sustained availability of health resources</li> </ol>
<b>Strategic Priorities</b>	<ol style="list-style-type: none"> <li>1. Strengthen digital health governance and leadership to facilitate better coordination and implementation of digital health initiatives</li> <li>2. Improve efficiency, patient safety, quality and continuity of care through digitalisation of health service delivery in a holistic manner</li> <li>3. Improve health workforce competency and equitable access to specialised care using telehealth including eLearning</li> <li>4. Promote healthy behaviour through access to relevant health education and information</li> </ol>

5. Enhance seamless and secure information exchange
6. Improve data use for evidence-based actions
7. Improve supply chain management of health commodities
8. Improve management of human resources
9. Improve management of financial resources
10. Strengthen disease prevention, surveillance, detection, reporting, response and control

## Strategic Priority 1

### **Strengthen digital health governance and leadership to facilitate better coordination and implementation of digital health initiatives**

Successful implementation of digital health requires strong governance and leadership at all levels of the health system. The digital health governance facilitates better coordination and engagement of stakeholders, alignment of digital health investments with national health priorities, provides guidance and enforces compliance with digital health guidelines and standards.

This priority seeks to address issues related to strengthening digital health governance structures at all levels of the health system; engagement of stakeholders; involvement of health workers in digital transformation efforts; development of digital health implementation guidelines; establishment of digital health legal and regulatory framework; and raising awareness of the Digital Health Strategy.

#### *Strategic Initiatives*

1. Strengthen the governance structures to enable effective coordination, management oversight and implementation of digital health initiatives across of the health sector
2. Develop a costed action plan for the implementation of the Digital Health Strategy
3. Develop a resource mobilization plan to ensure successful implementation of the Strategy

4. Improve a legal and regulatory framework to ensure client safety, data security, confidentiality and privacy.
5. Develop a change management plan
6. Implement a digital health initiatives inventory and digital library

### *Capabilities unlocked*

- Government can track and coordinate digital health initiatives in the health sector
- Health sector can securely and safely use digital health technologies
- Health sector can successfully plan and mobilize resources to implement the Digital Health Strategy.

## Strategic Priority 2

### **Improve efficiency, patient safety, quality and continuity of care through digitalisation of health service delivery in a holistic manner**

Digitalization of health services involves implementing appropriate digital health technologies required to support quality health services delivery and health information management within and across health facilities. Furthermore, it delivers digital health solutions that enable clients, health care providers and health care managers to access, use and share health information in the health services provision.

The digitalisation should focus on supporting the following: high quality care and adherence to guidelines and the best practices; continuity of care over time and across different points of service; integrated services across vertical programmes; case detection, screening, triage and referrals; health promotion and education; improving the efficiency of health services and efficient management of resources at the points of care.

This strategic priority intends to address the following issues: digitalisation of all health care processes in an integrated manner leading to improved performance of health facilities and health workers; improved management of health insurance claims; enhanced management of prescriptions; improved management of referral and continuity of care as patients/clients move from one point of care to another. It will further improve the use of digital solutions for managing community-based health services and clients' feedback.

### *Strategic Initiatives*

1. Digitalise health care services at health facility levels
2. Implement standardised ePrescription
3. Implement standardised insurance eClaim
4. Implement eReferral solutions
5. Digitalise community-based health services
6. Implement a digital platform for managing clients' feedback on the quality of services received at the health facilities.

### *Capabilities unlocked*

- Health workers at all levels can efficiently deliver quality health care for better client experience
- Government can efficiently monitor the performance of the health system and quality of health services provision
- Government can efficiently assess and improve quality of health services provision
- Health facilities and insurers can more efficiently process insurance claims, leading to increased financial resources for health facilities.
- Health sector can collect and respond to clients' feedback and needs

## Strategic Priority 3

### **Improve health workforce competency and equitable access to specialised health care using telehealth**

Telehealth services are increasingly becoming as one of the critical approaches for delivering health care services and a panacea for achieving universal healthcare. Thus, Telehealth has a great potential to significantly address some of the most pressing challenges of the health system including access to health care, cost effective health service delivery, and distribution of limited health care service providers in the country. Telemedicine services such as teleradiology, teleconsultation, and teledermatology; and eLearning are among the most prevalent telehealth services. For instance, remote health facilities can provide specialised

care services through telemedicine by consulting specialists at specialised facilities while health workers in remote facilities can easily access continuing education through eLearning platforms.

This strategic priority aims to implement eLearning and telemedicine services to improve health workforce competencies and equitable access to healthcare services respectively.

### *Strategic Initiatives*

1. Develop guidelines to streamline implementation and operationalisation of telehealth services
2. Improve ICT infrastructure to support delivery of telehealth services
3. Implement telemedicine services
4. Implement digital platforms for health professional peer networking
5. Implement eLearning and knowledge management platforms for continuous professional development

### *Capabilities unlocked*

- Health sector can provide equitable access to specialised health care services
- Health workforce can access continuous professional development programs at their convenience

## Strategic Priority 4

### Promote healthy behaviour through access to relevant health education and information

Health education and information services are critical for promoting healthier community lifestyles by increasing awareness and behaviour change of the society on prevention and control of communicable, non-communicable and neglected tropical diseases. Digital platforms, for instance social media, can be used as a tool to support health information, education and communication (IEC) initiatives through active engagement of community members and health care service providers, and by reaching wide audiences. Thus, health care organisations can use digital platforms to share health promotive messages and engage communities in health promotion activities.

This strategic priority focuses on improving and scaling up the use of digital technologies for disease prevention and control through promoting healthy lifestyles, health seeking behaviour and early interventions in chronic illness. By taking advantage of the high penetration of mobile phones and networks, several mHealth initiatives such as the use of SMS, mobile apps and web-apps can be implemented for public health promotion and information sharing across the health sector.

### *Strategic Initiatives*

1. Develop guidelines for effective use of interactive digital platforms for health information, education and communication
2. Implement interactive digital platforms for health information, education and communication

### *Capabilities unlocked*

- Clients can access health information, education and communication to promote healthier behaviour
- Health sector can systematically use interactive digital platforms for health information, education and communication
- Health sector can provide health information, education and communication using interactive digital platforms

## Strategic Priority 5

### Enhance seamless and secure information exchange

Evidence-based decision-making results into improved quality health services and health system performance to achieve universal health care. Harmonized national health information systems (HIS) are essential for improving access to quality data through seamless and secure information exchange across the health sector and other sectors. Currently, the digital health landscape faces various challenges including fragmented data systems; uncoordinated business processes; limited information exchange capabilities; inadequate data standards across the health sector; inadequate application of information security standards; and ineffective data management and dissemination mechanisms.

This strategic priority intends to strengthen ongoing efforts on developing health enterprise architecture; systems interoperability; data standards; terminology services; and registries such as client registry, health commodities registry, health facility registry and health worker registry to enhance seamless and secure information exchange across the health sector.

### *Strategic Initiatives*

1. Finalise and institutionalise the Tanzania Health Enterprise Architecture
2. Strengthen use of data, application and technology standards (e.g. ICD 10, HL 7, DICOM, LOINC, and service codes)
3. Implement terminology services for standardised health terminologies, codes, data elements and value sets
4. Strengthen interoperability across different systems within health and other sectors
5. Implement client and health worker registries
6. Strengthen the health facility and health commodities registries
7. Implement shared client health records
8. Strengthen standards and guidelines for secure data storage, processing, information exchange, and dissemination.

### *Capabilities unlocked*

- Health sector stakeholders can link data systems together
- Health sector can uniquely identify clients across health care services
- Clients can improve their experience
- Health sector can exchange and share quality information
- Health sector can track individual clients over time and across multiple points of service.



## Strategic Priority 6

### Improve data use for evidence-based actions at all levels of the health system

The use of high-quality data is essential for optimizing efficiency and effectiveness of health care services delivery. However, better data use is affected by limited data/information dissemination, inability of systems to produce required reports, limited capabilities to support data use e.g. data visualization and analytics, inadequate data use skills among health workforce, and limited data use aspects in health professional training curricula.

Thus, this strategic priority intends not only to ensure that high quality data is collected but also data is transformed into useful information for evidence-based actions at all levels of the health system.

#### *Strategic Initiatives*

1. Implement digital solutions for facility supervision
2. Strengthen continuous professional development programmes on data use for health workers
3. Incorporate data use aspects in pre-service and in-service curricula
4. Strengthen the national health data warehouse
5. Improve the health management information system including indicators and data analytics

#### *Capabilities unlocked*

- Health sector will have coordinated and harmonized supportive supervision
- Government can efficiently assess and improve quality of health services provision
- Health workers can effectively use data for evidence-based actions
- Health workers can access data analytics tools and data from a range of source systems.

## Strategic Priority 7

### Improve supply chain management of health commodities at all levels of the health system

Effective supply chain management of health commodities across different service delivery points is of paramount importance in the delivery of quality health services. Moreover, better management of medicines and health commodities leads into improved patient safety and individual and population health outcomes.

This key priority area intends to enhance the use of digital health solutions for supply chain management. These solutions will address several challenges such as ineffective mechanisms for managing stocks at health facilities, inter-intra facilities stock transfers due to disconnected and multiple systems, inadequate visibility of health commodities data, uneven distribution of medicines and health products, potential medicine side effects, irrational prescription and dispensing of medicines, and high influx of counterfeit medicines.

#### *Strategic Initiatives*

1. Strengthen logistics management information systems
2. Implement digital solution for tracing and tracking of health commodities
3. Integrate the national product registry of medicines, medical supplies, and medical devices with other systems
4. Strengthen the adverse reactions reporting system for medicines, medical devices and cosmetics

#### *Capabilities unlocked*

- Health sector can access and use data to better understand and solve supply chain challenges
- Health sector can track incidents of adverse drug reactions

## Strategic Priority 8

### Improve management of human resources at all levels of the health system

Proper management of human resources for health (HRH) is fundamental for a well-functioning health system. Current efforts to use digital solutions for management of human resources in the health sector have shown to improve planning, development and management of HRH. However, there are still some key issues that need to be addressed to strengthen planning, distribution and effective utilisation of human resources across the health sector as a catalyst for improved health services provision and health outcomes.

Thus, this priority area seeks to address the following issues: existence of multiple and disconnected HRH systems including HRHIS, LAWSON, health worker regulatory board databases, TIIS, TrainSmart, and TrainTracker systems; fragmented health workforce information; and inability of health facilities to track performance of health workers.

#### *Strategic Initiatives*

1. Improve human resources for health (HRH) management information systems
2. Improve digital solutions for management and monitoring of HRH production and absorption
3. Integrate the health worker registry with existing human resource systems (including LAWSON, HRHIS, health worker regulatory board databases, and TIIS) through an interoperability layer
4. Implement biometric attendance registers at health facilities and institutions
5. Implement digital solutions for improving and tracking performance of health workers

#### *Capabilities unlocked*

- The Government can equitably distribute health workers across the country
- The Government can easily monitor performance of health workers
- The Government can effectively regulate health workers

## Strategic Priority 9

### Improve management of financial resources

Effective management of financial resources is essential for improved infrastructure, human resource for health (HRH), health commodities, and health services delivery at all levels of the health system. The implementation and use of digital solutions for financial management in the health sector have shown positive results such as improved revenue collection at the health facilities and institutions, and improved planning and budgeting. However, fragmented digital financial management systems, limited coverage, and weak transaction controls within the systems are some of the challenges affecting financial resources management.

This priority area seeks to strengthen the digital solutions for financial resource management to enhance planning, budgeting, revenue collection, accounting, auditing, and reporting at different levels of the health system.

#### *Strategic Initiatives*

1. Improve digital solutions for planning, budgeting, revenue collection, accounting, auditing, and reporting all levels
2. Integrate all public health sector electronic revenue collection systems with the Government ePayment Gateway (GePG)
3. Strengthen digital solutions for health insurance management

#### *Capabilities unlocked*

- Health sector can improve planning, revenue collection and control
- Health Sector can improve efficiency of administration of Insurance schemes.

## Strategic Priority 10

### Strengthen disease prevention, surveillance, detection, reporting, response and control at all levels of the health system

Timely diseases detection, preparedness, and appropriate response are essential for preventing both the loss of human life and socio-economic impact of disease outbreaks, disasters and emergencies. However, effective and sustainable disease surveillance and management of disasters and emergencies generally is highly dependent on timely availability of quality information for evidence-based actions across all levels of the health system. The Government implemented the electronic integrated disease surveillance and response (eIDSR) system in order to improve surveillance, prevention, detection, notification, response and control of notifiable and outbreak diseases and public health events such as injuries, disasters and emergencies.

There is low coverage of improved latrines; low community awareness on safe water, sanitation and hygiene (WASH); and high prevalence of WASH related diseases such as cholera, typhoid, dysentery and diarrhoea. The Government implemented the national sanitation management information system (NSMIS) in order to improve the quality of information for effective management of WASH services.

In this strategic priority area, the Government aims to strengthen digital solutions for improving surveillance and reporting of notifiable and outbreak diseases and public health events. The eIDSR will be strengthened to integrate data from different sources to provide timely quality information on disease surveillance and public health events. Furthermore, this strategic priority will strengthen the electronic information system for management and monitoring of WASH services, including community-based mHealth solutions for enhanced reporting and prevention of WASH related diseases.

#### *Strategic Initiatives*

1. Strengthen the disease surveillance and response system
2. Strengthen integration of eIDSR with related systems in East African Community Partner States
3. Strengthen digital solutions for promotion of safe water, sanitation, hygiene and food safety services

4. Implement digital solutions for tracking and reporting of injuries, emergencies and disasters

*Capabilities unlocked*

- Health sector can easily access high quality disease surveillance data
- Health sector can respond in a timely and coordinated manner to emergencies and outbreaks.

# 4. Digital Health Governance Framework

Successful implementation of the Digital Health Strategy requires strong governance and leadership. It is therefore imperative to institutionalize an inclusive governance structure with clear lines of authority, roles and responsibilities at all levels of the health system. This Strategy seeks to strengthen the digital health governance structure that oversees planning, priority setting, strategic investment, resource mobilization, change and adoption, and monitoring and evaluation.

The main components of the digital health governance structure are the National Digital Health Steering Committee (NDHSC), the National Digital Health Secretariat (NDHS), institutional digital health committees, and health facility digital health committees. The digital health governance structure is described below.

## 4.1 Digital Health Governance Structure

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The following organs will govern the implementation of the Strategy at different levels of the health system (Figure 3):

1. National Digital Health Steering Committee (NDHSC)
2. National Digital Health Technical Committee (NDHTC)
3. National Digital Health Secretariat (NDHS)
4. Regional Health Management Team (RHMT)
5. Council Health Management Team (CHMT)
6. Institutional Digital Health Committees
7. Health Facility Digital Health Committees

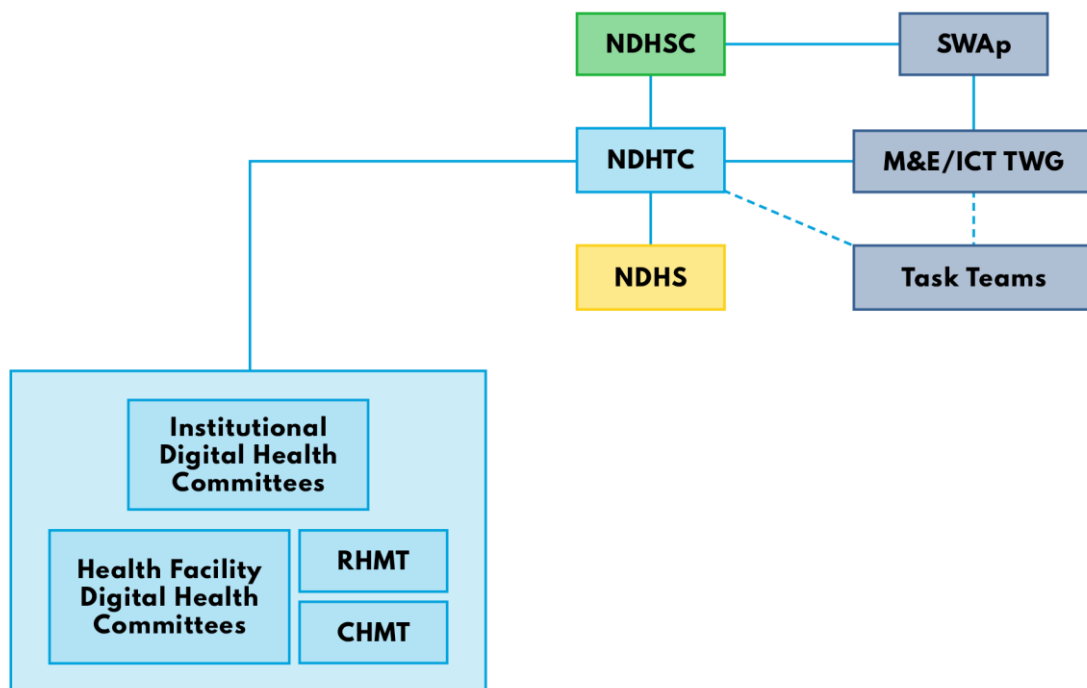


Figure 3. Digital Health Governance Structure

#### 4.1.1 National Digital Health Steering Committee

The NDHSC is an important organ for ensuring successful implementation of the Digital Health Strategy.

The main roles of the NDHSC shall include the following:

- Provides leadership and strategic guidance to all digital health initiatives in the health sector to ensure that they are well aligned with the National Digital Health Strategy and the Health Policy and Health Sector Strategic Plan priorities.
- Oversees the implementation of the Digital Health Strategy
- Guides engagement of stakeholders in the implementation of the Digital Health Strategy
- Provides a system-level perspective and technical guidance on digital health initiatives
- Mobilizes resources for strategic investment in digital health initiatives across the health sector
- Reviews and approves digital health initiatives



- Oversees compliance with digital health standards and guidelines
- Establishes and oversees standards and guidelines to govern issues of ownership, compliance, privacy, confidentiality, and security in the digital health ecosystem
- Monitors and evaluates the implementation of digital health initiatives.

### *Membership*

The committee will be composed of not more than 20 voting members and will consist of one representative from the following institutions: representatives of MDAs; public, private and faith-based health facilities; the private sector; research and training institutions; and development and implementing partners. Additional members may be co-opted at the discretion of the NDHSC and not limited to listed members in Appendix 2.

### *Leadership*

The NDHSC will be chaired by the Permanent Secretary for Health at MoHCDGEC and co-chaired by Deputy Permanent Secretary responsible for Health at PORALG. The Director of ICT at MoHCDGEC shall serve as the Secretary of the committee.

### *Accountability and Reporting*

- The NDHSC shall meet on quarterly basis
- The NDHSC shall submit reports to the Technical Committee Sector-wide Approach (TC-SWAp) Meeting.

## **4.1.2 National Digital Health Secretariat**

The National Digital Health Secretariat (NDHS) will be responsible for day-to-day operations of the digital health strategy implementation. They will also be responsible for organizing meetings of the NDHSC and NDHSE as well as compiling and circulating various reports of the Digital Health Strategy implementation.

### *Membership*

The NDHS shall comprise Directors of ICT and M&E of both MoHCDGEC and PORALG and Assistant Directors from different departments as well as representatives from MDAs, training institutions and implementing partners. It also comprise Coordinator of Digital Health at MoHCDGEC, Coordinator of Digital Health at PORALG and appointed officers from ICT and M&E both at MoHCDGEC and PORALG.

### *Leadership*

The NDHS shall be chaired by the Director of ICT of the MoHCDGEC and co-chaired by the Director of ICT at the PORALG. The Digital Health Coordinator at MoHCDGEC shall serve as the Secretary of the NDHTC

### *Roles and Responsibilities*

The roles and responsibilities of the NDHS shall include:

- Coordinates the implementation of the Digital Health Strategy to promote collaboration and prevent duplication of efforts and resources
- Develops costed annual action plans for digital health activities
- Ensures proper use of allocated resources for implementing digital health initiatives
- Develops and enforces compliance with digital health standards and guidelines
- Implements digital health initiatives in accordance with national policies, regulations, guidelines and standards
- Implements digital health capacity building initiatives
- Provides technical support, mentorship and supportive supervision of digital health activities
- Coordinates and engages stakeholders in the implementation of the Digital Health Strategy
- Promotes the Digital Health Strategy among stakeholders
- Supervises institutional and health facility digital health committees
- In consultation with the NDHSC may establish task teams to implement specific digital health tasks
- Conducts monitoring and evaluation of the Digital Health Strategy implementation

### *Accountability and Reporting*

- The NDHTC shall meet on monthly basis
- The NDHTC shall submit reports to the NDHSC
- The NDHTC will share proceedings from NDHSC to M&E/ICT TWG under TC-SWAp

#### **4.1.3 National Digital Health Stakeholders Engagement (NDHSE)**

The National Digital Health Technical Committee (NDHTC) shall be responsible for day-to-day operations of the Digital Health Strategy implementation.

### *Membership*

The NDHTC shall comprise Directors of ICT and M&E of both MoHCDGEC and PORALG and Assistant Directors from different departments as well as representatives from MDAs, training institutions, Developing and implementing partners.

### *Leadership*

The NDHTC shall be chaired by the Director of ICT of the MoHCDGEC and co-chaired by the Director of ICT at the PORALG. The Digital Health Coordinator at MoHCDGEC shall serve as the Secretary of the NDHTC.

### *Roles and Responsibilities*

The roles and responsibilities of the NDHTC shall include:

- Provide progress on the implementation of the Digital Health Strategy to promote collaboration and prevent duplication of efforts and resources
- Contribute on the development of a costed annual action plans for digital health activities
- Advocate proper use of allocated resources for implementing digital health initiatives
- Review and enforces compliance with digital health standards and guidelines
- Implements digital health initiatives in accordance with national policies, regulations, guidelines and standards
- Implements digital health capacity building initiatives
- Provides technical support, mentorship and supportive supervision of digital health activities
- Coordinates and engages stakeholders in the implementation of the Digital Health Strategy
- Promotes the Digital Health Strategy among stakeholders

### *Accountability and Reporting*

- The NDHSE shall meet on monthly basis
- The NDHSE shall submit reports to the NDHS
- The NDHSE will share proceedings from NDHSC to M&E/ICT TWG under TC-SWAp

## 4.2 Regional Health Management Team

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The NDHTC will cascade the implementation of the Digital Health Strategy to Regional Health Management Teams (RHMTs). RHMTs will be responsible for overall coordination of digital health initiatives at regional level.

*The roles of RHMTs shall include:*

- Oversees the implementation of digital health initiatives
- Enforces compliance with digital health standards and guidelines
- Provides technical support to CHMTs on the implementation of digital health initiatives
- Coordinates stakeholders in the implementation of digital health initiatives
- Conducts supportive supervision and mentorship on the implementation of the Digital Health Strategy
- Submits monthly reports to the MoHCDGEC and PORALG
- Conducts monitoring and evaluation of the Digital Health Strategy implementation

## 4.3 Council Health Management Team

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RHMTs will cascade the implementation of the Digital Health Strategy to Council Health Management Teams (CHMTs). CHMTs will be responsible for overall coordination of digital health initiatives at district level.

*The roles of CHMTs shall include:*

- Appoint Council Digital Health Coordinator
- Implements digital health activities
- Enforces compliance with digital health standards and guidelines
- Provides technical support to health facilities
- Coordinates stakeholders in the implementation of digital health initiatives
- Conducts mentorship and supportive supervision of digital health activities
- Submits monthly reports to the RHMTs
- Conducts monitoring and evaluation of the Digital Health Strategy implementation.

## 4.4 Institutional Digital Health Committees

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Ministerial Departments and Agencies as well as training institutions under MoHCDGEC shall establish Institutional Digital Health Committees which shall be responsible for overall coordination of digital health activities at institutional level. The Committee shall be chaired by the Head of the Institution and the Secretary of the Committee shall be Head of ICT Department in the Institution.

*The roles of Committee shall include:*

- Develops annual action plans for digital health activities
- Implements digital health initiatives
- Mobilizes resources for implementing digital health initiatives
- Enforces compliance with digital health standards and guidelines
- Implements digital health capacity building initiatives
- Provides technical support and supportive supervision of digital health activities
- Submits monthly reports to the MoHCDGEC
- Conducts monitoring and evaluation of the Digital Health Strategy implementation.

## 4.5 Health Facility Digital Health Committees

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Health facilities shall establish Digital Health Committees which shall be responsible for overall coordination of digital health activities at facility level. The Health Facility Digital Health Committees shall be chaired by the Health Facility In-Charge and the Secretary of the Committee shall be Head of ICT or appointed focal person.

*The roles of Committee shall include:*

- Create awareness on digital health in health facilities
- Develops facility annual action plans for digital health activities
- Mobilizes resources for implementing digital health initiatives
- Implements digital health initiatives
- Enforces compliance with digital health standards and guidelines
- Implements digital health capacity building initiatives
- Conducts mentorship and supportive supervision of digital health activities

- Submits monthly reports on the implementation of Digital Health Strategy to the respective authorities (MoHCDGEC, PORALG, RHMT, CHMT)
- Conducts monitoring and evaluation of the digital health activities.

# 5. Resource Mobilization Framework

Successful implementation of digital health initiatives requires mobilisation of adequate resources at all levels of the health system from the national to the health facility level. Adequate financial, computing and human resources need to be mobilised through various strategies.

## 5.1 Financial Resources

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Financial resources required for the implementation of this Strategy will be mobilized at national and health facility levels through the following strategies:

- Budgeting and allocation of funds for implementation of digital health initiatives
- Strengthening cooperation with development and implementing partners
- Writing proposals for grants and soft loans
- Strengthening Public Private Partnership (PPP) including Service Agreements
- Utilizing health facility own sources and other resources

## 5.2 Human Resources

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The Government in collaboration with partners will ensure adequate skilled personnel including ICT and M&E personnel required for the implementation, monitoring and evaluation of this Strategy are availed through various strategies, including the following:

- Recruiting and ensuring equitable distribution of skilled ICT personnel
- Secondment of staff to public and private health facilities
- Developing memorandum of understanding (MoU) between institutions to support the staffing of the implementation of digital health initiatives
- Using task sharing approach to address shortages of ICT personnel
- Seeking technical support from key stakeholders.

### 5.3 Computing Infrastructure

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The MoHCDGEC will collaborate with relevant government authorities and other stakeholders to ensure availability of adequate and reliable computing infrastructure that are foundational for a successful implementation of this Strategy. The strategies for strengthening computing infrastructure will include:

- Improving availability and distribution of electricity from the national grid
- Improving health facility electrification
- Improving internet connectivity in health facilities and institutions
- Strengthening the use of existing Government ICT resources e.g. national data centre
- Strengthening collaboration with telecommunication companies and mobile network operators (MNOs).



## 6. Change and Adoption

Implementation of this Digital Health Strategy will require comprehensive change management strategies. Organisation cultural change management is a fundamental driver of successful implementation and adoption of digital health solutions. Evidence indicates that key factors influencing the achievement of sustainable change and adoption are mostly organisational rather than technical factors. Therefore, sound change management approaches are essential to the realisation of a bigger picture value and benefits of the Digital Health Strategy. These will entail managerial support at all levels to ensure the uptake of digital health applications and integration into clinical workflows and administrative operations.

*The change and adoption will be achieved through the following strategies:*

- Create awareness among health managers and practitioners on digitalisation of health services
- Provide adequate training on the use of digital health solutions
- Create champions and communities of practice for promoting the use of digital health solutions and data use
- Conduct mentorship and supportive supervision of digital health activities at all levels
- Use skilled personnel with experience and expertise in system implementation and change management practices
- Develop and enforce change management plan for managing phasing out from manual systems to digital solutions
- Assess compliance assessment to standards and guidelines on the implementation of digital health systems
- Implement change management mechanisms to ensure transition from one system to another or between versions of systems, and that changes in business processes do not negatively affect service provision
- Collaborate with training institutions to integrate digital health and data use aspects into in pre service and in-service health training curricula
- Make implementation of the Digital Health Strategy as permanent agenda of all meetings at all levels of the health system

- Implement evaluation and rating of digital health solutions at all levels
- Improve documentation of digital health systems e.g. systems requirements specifications (SRS), user acceptance testing (UAT) reports, system technical manuals, user manuals and standard operating procedures (SOPs)
- Improve structured user support and user feedback mechanisms
- Collaborate with research and training institutions in the development of digital health solutions
- Strengthen national, regional and international collaborations as a vehicle for capacity building on emerging digital health innovations
- Strengthen different Communities of Practice (CoPs) for digital health.

# 7. Research, Innovation and Development in Digital Health

The health sector is among the most data-intensive sectors and there is an increasing availability of large volumes of health data from more sources than ever before. It is therefore very important to explore innovative approaches that enhance effective management and efficient use of big data and emerging technologies for sustainable, scalable and value-based transformation of health services delivery; and hence the wider health system transformational change.

Emerging technologies such as Internet of Things (IoT), wearables and sensors, blockchain, virtual reality, Artificial Intelligence (AI) including machine learning, and big data analytics have potential capacities to facilitate actionable insights that will enhance attainment of UHC, data quality, and effectiveness and efficiency in health services delivery.

The MoHCDGEC 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 evidence-based and cost-effective application of digital health technologies.

*The Ministry in collaboration with universities and research institutions will:*

1. Conduct research and innovation activities to improve adoption of digital technologies in the health sector
2. Facilitate the translation of research evidence and information into policy and practice
3. Conduct operational and implementation research on digital health to inform decision-making, policy and practice
4. Conduct research on emerging technologies to inform use in the health sector
5. Promote establishment of Digital Health incubation centres.

# 8. Monitoring and Evaluation

The goal of monitoring and evaluation (M&E) is to ensure that the Digital Health Strategy 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, the M&E is instituted as a strategic review mechanism to monitor progress and assess outcomes in accordance with the strategic priorities and expectations.

The M&E will be participatory involving stakeholders in the implementation of the Digital Health Strategy. A comprehensive M&E plan will be developed to guide monitoring and evaluation of the Strategy in accordance with the M&E Roadmap for the Digital Health Strategy implementation (section 8.3). The National Digital Health Steering Committee (NDHSC), in collaboration with other digital health committees at different levels, will be responsible to monitor and evaluate the implementation of this Strategy.

## 8.1 Monitoring

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Monitoring refers to the tracking of the progress of implementing the Digital Health Strategy. Monitoring of the Strategy will involve continuous data collection at all levels of the health system. The NDHSC will be responsible for the overall monitoring of the Strategy implementation.

*In order to monitor the implementation of this Strategy the NDHSC shall:*

- Review digital health action plans in line with the strategic priorities and initiatives of this Strategy.
- Prepare and distribute monitoring and reporting guidelines to all levels of the health system. The guidelines will include the format of data collection instruments, indicators, flow of information, reporting formats and reporting schedules
- Collect information relating to monitoring of structural, process and outcome indicators that reflect the implementation of this Strategy
- Disseminate the monitoring reports of the Strategy implementation to all levels of the health system and other stakeholders.
- Develop and implement M&E capacity initiatives to ensure high quality outcomes

## 8.2 Evaluation

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Evaluation is a critical and objective appraisal of the overall Digital Health Strategy implementation. The evaluation will focus on performance and achievement of outputs, outcomes and impact. There shall be two main evaluation phases; the first one is at middle of implementation of the strategy (mid-term evaluation) and the second evaluation at the end of the fifth year (end-line evaluation). The NDHSC shall conduct both the mid-term and end-line evaluation.

*The NDHSC will establish the following:*

- Define structural, process and outcome indicators that provide informative and actionable insight into the Digital Health Strategy implementation performance and adoption of digital health as well as the tangible results for the health sector and non-health sector stakeholders.
- Identify baseline for all types of indicators from output to outcomes to allow effective evaluation of progress over the duration of the plan
- Collect information relating to evaluation of structural, process and outcome indicators that reflect the implementation of this Strategy
- Disseminate the evaluation reports of the Strategy implementation to all levels of the health system and other stakeholders.



**THE UNITED REPUBLIC OF TANZANIA**

Ministry of Health, Community Development, Gender, Elderly and Children

# **M&E Roadmap for the Digital Health Strategy Implementation**



### 8.3 M&E Roadmap for the Digital Health Strategy implementation

Strategic Priority	Strategic Initiatives	Indicator	Target
1 Strengthen digital health governance and leadership to facilitate better coordination and implementation of digital health initiatives	1.1 Strengthen the governance structures to enable effective coordination, management oversight and implementation of digital health initiatives across of the health sector	(i) Presence of governance structures for coordination and management of digital health strategy implementation (ii) Number of meetings held (iii) Number of digital health initiatives reviewed and approved	All health system levels have functional digital health governance structures by December 2019.
	1.2 Develop a costed action plan for the Digital Health Strategy implementation	Digital Health Strategy costed action plan present	Costed Digital Health Strategy implementation action plan in place by July 2019
	1.3 Develop the resource mobilization plan to ensure successful implementation of the Strategy	Availability of resource mobilization plan for implementation of the Strategy	Availability of the resource mobilization plan for implementation of the Strategy by July 2019
	1.4 Strengthen legal and regulatory framework to ensure client safety, data security, confidentiality and privacy.	Presence of legislation, regulations and guidelines for ensuring client safety, health data security, confidentiality and privacy	Availability of legislation, regulations and guidelines for ensuring client safety, health data security, confidentiality and privacy by December 2021
	1.5 Develop change management plan	Change management plan in place	Change management plan developed and implemented by December 2020
	1.6 Implement digital health initiatives inventory and digital library	Availability of digital health initiatives inventory and digital library	Functional digital health initiatives inventory and digital library by December 2021

Strategic Priority	Strategic Initiatives	Indicator	Target
<b>2</b> Improve efficiency, patient safety, quality and continuity of care through digitalisation of health service delivery in a holistic manner	<b>2.1</b> Digitalise health care services at health facility levels	Presence of digitalised health care services in health facilities	Health facilities have digitalised health care services by June 2024 <ul style="list-style-type: none"> <li>• All hospitals</li> <li>• 80% of health centres and dispensaries</li> </ul>
	<b>2.2</b> Implement standardised ePrescription	(i) Presence of standardised ePrescription (ii) Proportion of health facilities using standardised ePrescription	Standardised ePrescription in use by June 2022
	<b>2.3</b> Implement standardised insurance eClaim	(i) Presence of standardised insurance eClaim (ii) Proportion of health facilities and insurance providers using standardised insurance eClaim (iii) Proportion of insurance providers using standardised insurance eClaim	Standardised insurance eClaim utilized by all health facilities and insurance providers by Dec 2020
	<b>2.4</b> Implement integrated eReferral solutions	(i) Presence of integrated eReferral solutions (ii) Proportion of referrals in health facilities done through integrated eReferral solutions	All referrals in facilities are done through integrated eReferral solutions by December 2021
	<b>2.5</b> Digitalise community-based health services	(i) Presence of digitalised community-based health services (ii) Proportion of community-based health services delivered through digital solutions	Digitalised community-based health services are in place by December 2021
	<b>2.6</b> Implement digital platform for managing clients' feedback on the quality of services received at the health facilities.	(i) Presence of digital platform for managing clients' feedback on the quality of services received at all health facilities (ii) Percentage of health facilities using digital platform for managing clients' feedback on the quality of services	Functional digital platform for managing clients' feedback on the quality of services received at the health facilities present by December 2024.



Strategic Priority	Strategic Initiatives	Indicator	Target
<b>3</b> Improve health workforce competency and equitable access to specialised health care using telehealth	<b>3.1</b> Develop guidelines to streamline implementations and operationalization of telehealth services	(iii) Guidelines to streamline implementations and operationalization of telehealth services developed (iv) Proportion of national, zonal, regional and district hospitals using guidelines to streamline implementations and operationalization of telehealth services	Guidelines to streamline implementations and operationalization of telehealth services utilised by national, zonal, regional and district hospitals by December 2020
	<b>3.2</b> Strengthen ICT infrastructure to support delivery of telehealth services	Proportion of facilities with required ICT infrastructure to support delivery of telehealth services	70% of all health facilities have required ICT infrastructure to support delivery of telehealth services available by June 2024
	<b>3.3</b> Implement telemedicine services	Proportion of hospitals and health centres with telemedicine services	Telemedicine services available at 70% of health facilities by June 2024
	<b>3.4</b> Implement digital platforms for health professional peer networking	(i) Presence of digital platforms for health professional peer networking (ii) Proportion of health workers using the health professional peer network	Digital platforms for health professional peer networking operational by December 2020
	<b>3.5</b> Implement digital learning and knowledge management platforms for continuous professional development	(i) Presence of digital learning and knowledge management platforms for continuous professional development (ii) Number of courses that are delivered through the digital learning platform to different cadres of the health workforce (iii) Proportion of health workers enrolled for courses on digital learning platforms (iv) Proportion of health workers who completed at least one course delivered through the digital learning platform	Digital learning and knowledge management platforms for continuous professional development operational by December 2021

Strategic Priority	Strategic Initiatives	Indicator	Target
4 Promote healthy behaviour through access to health information, education and information	<p><b>4.1</b> Develop guidelines for effective use of interactive digital platforms for health information, education and communication</p> <p>Implement interactive digital platforms for health information, education and communication</p>	<p>(i) Guidelines for effective use of interactive digital platforms for health information, education and communication developed</p> <p>(ii) Availability of interactive digital platforms for health information, education and communication</p> <p>(iii) Proportion of mobile phones and internet subscribers using interactive digital platforms for health information, education and communication</p>	<p>Guidelines for effective use of interactive digital platforms for health information, education and communication developed by December 2020</p> <p>50% of mobile phones and internet subscribers use interactive digital platforms for health information, education and communication by December 2020</p>
5 Enhance seamless and secure information exchange	<p><b>5.1</b> Finalize and institutionalize Tanzania Health Enterprise Architecture</p>	<p>(i) Presence of Tanzania Health Enterprise Architecture</p> <p>(ii) Proportion of digital health solutions whose development is guided by the Health Enterprise Architecture</p>	<p>The development of all digital health solutions is guided by the Health Enterprise Architecture by June 2024</p>
	<p><b>5.2</b> Strengthen use of data, application and technology standards e.g. ICD 10, HL 7, DICOM, LOINC, and service codes</p>	<p>Percentage of health facilities using data, application and technology standards</p>	<p>Health facilities are using data, application and technology standards by June 2024</p> <ul style="list-style-type: none"> <li>• All hospitals</li> <li>• 80% of health centres and dispensaries</li> </ul>
	<p><b>5.3</b> Implement terminology services for standardised health terminologies, codes, data elements and value sets</p>	<p>Percentage of health facilities using standardised health terminologies, codes, data elements and value sets</p>	<p>Health facilities are using standardised health terminologies, codes, data elements and value sets by June 2024</p> <ul style="list-style-type: none"> <li>• All hospitals</li> <li>• 80% of health centres and dispensaries</li> </ul>

Strategic Priority	Strategic Initiatives	Indicator	Target
	5.4 Strengthen interoperability across different systems within health and other sectors	Proportions of interoperable digital health solutions within health and other sectors	90% of all digital health solutions are interoperable by June 2022
	5.5 Implement client registry	Presence of functional client registry	Client registry functional by December 2019
	5.6 Implement health worker registry	Presence of functional health worker registry	Health worker registry functional by June 2022
	5.7 Strengthen the health facility and health commodities registries	(i) Presence of requirements for improving health facility registry (HFR) (ii) Presence of improved HFR (iii) Presence of requirements for improving health commodities registries (iv) Presence of improved health commodities registries	Improved health facility registry functional by June 2022  Improved health commodities registries functional by June 2022
	5.8 Implement shared client health records	(i) Proportion of health providers using shared client health records (ii) Proportion of health facilities using shared client health records	Shared health records established in all digitalised health facilities by June 2024
	5.9 Strengthen standards and guidelines for secure data storage, processing, information exchange, and dissemination	Percentage of health facilities using standards and guidelines for secure data storage, processing, information exchange, and dissemination	All health facilities use standards and guidelines for secure data storage, processing, information exchange, and dissemination by June 2024

Strategic Priority	Strategic Initiatives	Indicator	Target
6 Improve data use for evidence-based actions at all levels of the health system	6.1 Implement digital solutions for facility supervision	(i) Number of digital solutions for facility supervision developed (ii) Percentage of facility supervisions conducted using digital solutions	All health facilities are supervised using digital solutions in the health service delivery system by June 2024
	6.2 Strengthen continuous professional development programmes on data use for health workers	(iii) Presence of a training package for data use for health workers (iv) Proportion of health facilities with health workers who are competent in data use	All health facilities utilise data for evidence-based actions and dissemination by June 2024
	6.3 Incorporate data use aspects in pre-service and in-service curricula	Percentage of health training institutions implementing curricula with data use aspects	All health training institution adopt curriculum with data use aspects by June 2021
	6.4 Strengthen the national health data warehouse	Percentage of hospitals and institutions that provide data to the data warehouse	90% of public and private hospitals and institutions provide data to the data warehouse by June 2023
	6.5 Improve health management information system including indicators and data analytics	(i) Presence of requirements for improving the health management information system (HMIS) (ii) Presence of improved HMIS	Improved HMIS functional by June 2021
7 Improve supply chain management of health commodities at all levels of the health system	7.1 Strengthen logistics management information systems	(i) Proportion of health facilities using eLMIS that is linked to other information systems (ii) Number of systems integrated with eLMIS	An improved eLMIS utilised at all levels by June 2022
	7.2 Implement digital solution for tracing and tracking of health commodities	Proportion of health facilities and institutions using digital solution for tracing and tracking of health commodities	MSD, TFDA and all hospitals implement digital solution for tracing and tracking of health commodities by June 2021

Strategic Priority	Strategic Initiatives	Indicator	Target
	<b>7.3</b> Integrate the national product registry of medicines, medical supplies and medical devices with other systems	(i) The national product registry for medicines, medical supplies and medical devices integrated with other systems (ii) Proportion of systems integrated with the national product registry for medicines, medical supplies and medical devices	The national product registry of medicines, medical supplies and medical devices that is integrated with other systems implemented by the year December 2023
	<b>7.4</b> Strengthen adverse drug reactions reporting system for medicines, medical devices and cosmetics	(i) Proportion of health facilities at all levels with digital reporting systems for adverse drug reactions (ii) Number of adverse reactions resulting from use of medicines, medical devices and cosmetics reported by each health facility at all levels	A client friendly digital solution for reporting adverse reactions resulting from use of medicines, medical devices and cosmetics implemented by December 2021
<b>8</b> Improve management of human resources at all levels of the health system	<b>8.1</b> Strengthen human resources for health (HRH) management information systems	(i) Presence of HRH management information systems that are integrated with other systems (ii) Proportion of health facilities using integrated HRH management information system	100% of health facilities using integrated HRH management information system by June 2022
	<b>8.2</b> Improve digital solutions for management and monitoring of HRH production and absorption	(i) Presence of digital solution that enables tracking of health graduates (ii) Number of HRH of different cadres tracked from training institutions (iii) Number of HRH of different cadres tracked from employers	A digital solution for tracking health graduates implemented by June 2023
	<b>8.3</b> Integrate the health worker registry with existing human resource systems (including LAWSON, HRHIS, health worker regulatory board databases, TIIS) through interoperability layer	(i) Health workers' registry integrated to existing HR systems (ii) Proportion of institutions that utilize health worker registry that is integrated with existing human resource systems (including LAWSON, HRHIS, health worker regulatory board databases, TIIS).	A health worker registry that is interoperable with existing human resource systems (including LAWSON, HRHIS, health worker regulatory board databases, TIIS) implemented by June 2023

Strategic Priority	Strategic Initiatives	Indicator	Target
	<b>8.4</b> Implement biometric attendance registers at health facilities and institutions	Proportions of training institutions and health facilities that implement biometric attendance register	90% of training institutions and health facilities implement biometric attendance register by June 2023
<b>9</b> Improve management of financial resources	<b>9.1</b> Improve digital solutions for planning, budgeting, revenue collection, budgeting, accounting, auditing, and reporting at all levels	Proportion of councils using PlanRep software that is integrated with other information systems For (i) Planning (ii) Budgeting (iii) Revenue collection (iv) Accounting (v) Auditing (vi) Reporting	PlanRep software that is integrated with other information systems implemented by June 2023
	<b>9.2</b> Integrate electronic revenue collection systems in all public health facilities and institutions with the Government ePayment Gateway (GePG)	Proportions of public health facilities and training institutions using revenue collection systems that are integrated with GePG	All public health facilities and training institutions using revenue collection systems that are integrated with GePG by June 2022
	<b>9.3</b> Strengthen digital solutions for health insurance management	Proportions of health facilities utilizing digital solutions for efficient health insurance management	All health facilities utilizing digital solutions for efficient health insurance management by June 2021
<b>10</b> Strengthen disease prevention, surveillance, detection, reporting, response and control at all levels of the health system	<b>10.1</b> Strengthen the disease surveillance and response system	Presence of interoperable digital solution to support disease surveillance and response	Interoperable digital solution for supporting disease surveillance and response functional by December 2022
	<b>10.2</b> Strengthen digital solutions for promotion of safe water, sanitation, hygiene and food safety services	WASH and HMIS systems integrated	The WASH information is available in the HMIS system by June 2022

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# Appendices

## Appendix 1: Stakeholders' Engagement in the Development of the Strategy

A wide range of stakeholders, including individuals and institutions and multi-disciplinary experts, contributed in the development of this Strategy in order to ensure it is aligned to the national priorities and shared goals of different stakeholders. The Ministry expresses special appreciations to different stakeholders who were engaged throughout the process of developing this Strategy. Appendix 1 provides a list of individual names and organisations that contributed to this work during consultative meetings.

S/N	Name	TITLE	INSTITUTION
	Prof. Mohamad Kambi Bakari	Chief Medical Officer	MoHCDGEC
	Tumainiel Macha	Ass. Director M&E	MoHCDGEC
	Erick Kitali	DICT	PORALG
	Dr. Anna Nswilla	Ass. Director Health Services	PORALG
	Arnold Matoyo	Ass. DICT	POPSM
	Silvanus Ilomo	Acting Head, ICT	MoHCDGEC
	Hermes Rulagirwa	Former Head, ICT	MoHCDGEC
	Walter Ndesanjo	ICTO	MoHCDGEC
	Mark Tanda	ICTO	PORALG
	Alexander Sanga	DICT	NHIF
	Enock Mhehe	M&E	MoHCDGEC
	Dr. Liggyle Vumilia	Coordinator, Telehealth	MoHCDGEC
	Goodluck Moshi	ICTO	eGA
	Dr. Said Jafari	Lecturer	IFM
	Esther Msechu	ICTO	MoHCDGEC
	Jackson Shayo	ICTO	MoHCDGEC
	Modou Gaye	DICT	MNH
	Melchior Baltazary	SICTO	PORALG
	Yasinta Kijuu	PST	PORALG
	Dr. Boniface	Senior Medical Officer	PORALG
	Mark Tanda	ICTO	PORALG
	Sultana Seiff	ICT Officer	MOH
	Dr. Felix Sukums	Lead Consultant / Lecturer	MUHAS
	Dr. Respickius Casmir	Senior Lecturer	CBE
	Dr. Saidi Jafari	Lecturer	IFM
	Dr. Tumaini Nyamhanga	Senior Lecturer	MUHAS
	Dr. Nathanael Sirili	Lecturer	MUHAS
	Dr. Gasto Frumence	Senior Lecturer	MUHAS



S/N	Name	TITLE	INSTITUTION
1	Langson Nzoyo	ICTO	MoHCDGEC
2	Sosthenes Bamhuge	SICT	MoHCDGEC
3	Dr. John Kaswija	Medical Specialist	ZHRC-LZHTI, MoHCDGEC
4	Dr. Nzava	Registrar	Medical Council of Tanganyika
5	Dr. Henry Mwanyika	Regional DH Director	PATH
6	Jacqueline Patrick	Former Director, DUP	PATH
7	Elaine Barker	Senior Programme Officer	PATH
8	Emma Nicodemus	PC	MoHCDGEC/PATH
9	Eden Mathew	DHS	PORALG/PATH
10	Pascal Pastory	DICT	MSD
11	Neema Ringo	Senior Programme Officer	PATH
12	David Karunda	Programme Officer	PATH
13	Dr. Yasinta Kisiwe	Senior Officer, HPS	MoHCDGEC
14	Ambele Mwafula	Head of ICT	TFDA
15	Edwin Nyella	HIS Advisor	MoHCDGEC
16	Velda Aloyce	Health Secretary, CMO	MoHCDGEC
17	Bakari	ICTO	NHIF
18	Levina Kimaro	Planning Officer	MoHCDGEC
19	Zabron Abel	Business Development & Digital Health Manager	TTCIH - Ifakara
20	Patrick Muro	Head, ICT	MNH

## Appendix 2: Members of National Digital Health Committees

### 1. National Digital Health Steering Committee (NDHSC) Members

S/N	Designation	Institution	Role
1	Permanent Secretary	MoHCDGEC	Chairperson
2	Deputy Permanent Secretary	PORALG	Co-Chairperson
3	Chief Medical Officer	MoHCDGEC	Member
4	Director of ICT	MoHCDGEC	Secretary
5	Director of Policy and Planning	MoHCDGEC	Member
6	Chief Accountant	MoHCDGEC	Member
7	Director of Administration, Human Resource Management	MoHCDGEC	Member
8	Director of Legal Unit	MoHCDGEC	Member
9	Chair of DPG Health	DPG Health	Member
10	Chief Executive Officer	eGA	Member
11	Director General	TCRA	Member
12	Director of ICT	MoWTC	Member
13	Director of ICT	PORALG	Member

S/N	Designation	Institution	Role
14	Chair of RMOs	PORALG	Member
15	Chair of DMOs	PORALG	Member
16	Representative	APHTA	Member
17	Representative	CSSC	Member
18	Representative	BAKWATA	Member
<b>Co-opted members</b>			
1	Director of Curative Services	MoHCDGEC	Member
2	Director of Preventive Services	MoHCDGEC	Member
3	Director of Human Resource Development	MoHCDGEC	Member
4	Chief Pharmacist	MoHCDGEC	Member
5	Director of Nursing Services	MoHCDGEC	Member
6	Assistant Director M&E	MoHCDGEC	Member
7	Director of Health, Social Welfare and Nutrition Services	PORALG	Member
8	Director General	NHIF	Member
9	Director General	TFDA	Member
10	Director General	MSD	Member
11	Chief Executive Officer	TTCL	Member
12	Chief Executive Officer	NIDA	Member
13	Chief Executive Officer	RITA	Member

## 2. National Digital Health Technical Committee (NDHTC) Members

S/N	Designation	Institution	Role
1	Director of ICT	MoHCDGEC	Chairperson
2	Director of ICT	PORALG	Co-Chairperson
3	Coordinator of Digital Health	MoHCDGEC	Secretary
4	Director of Legal Unit	MoHCDGEC	Member
5	Director of ICT Services Provision	eGA	Member
6	Director of ICT	MOFP	Member
7	Assistant Director of Curative Services	MoHCDGEC	Member
8	Assistant Director of Preventive Services	MoHCDGEC	Member
9	Assistant Director of Health Promotion Services	MoHCDGEC	Member
10	Assistant Director of Health Services	PORALG	Member
11	Assistant Director of Administration, Human Resource Management	MoHCDGEC	Member
12	Representative	TTCL	Member
13	Representative	COSTECH	Member
14	Representative	NIMR	Member
15	Representative	Implementing partners	Member
16	Representative	training institutions	Member

### 3. National Digital Health Secretariat (NDHS) Members

S/N	Designation	Institution	Role
1	Coordinator of Digital Health	MoHCDGEC	Chairperson
2	Coordinator of Digital Health	PORALG	Co-Chairperson
3	Appointed staff from ICT	MoHCDGEC	Secretary
4	Appointed staff from M&E	MoHCDGEC	Member
5	Appointed staff from ICT	PORALG	Member
6	Representative	Implementing partners	Member