

REVORMATION REVOLUTION



FIVE YEAR PROGRESS REPORT

CONTENTS

BACKGROUND INFORMATION
CONNECTED WOREDA STRATEGY
DATA
DATA QUALITY
GOVERNANCE
HEALTH INFORMATION TECHNOLOGY SYSTEMS & SERVICES
eHEALTH ARCHITECTURE
HEALTH INFORMATION TECHNOLOGY SYSTEM STANDARDS & INTEROPERABILITY
ELECTRONIC REGULATORY INFORMATION SYSTEM
HEALTH MANAGEMENT INFORMATION SYSTEM
ELECTRONIC COMMUNITY HEALTH INFORMATION SYSTEM
MASTER FACILITY REGISTRY
ELECTRONIC MEDICAL RECORDS SYSTEM
HUMAN RESOURCE INFORMATION SYSTEM
PUBLIC HEALTH EMERGENCY MANAGEMENT SYSTEM
Ethiopia's Digital Health Response to COVID-19
HEALTHNET
SUPPLY CHAIN SYSTEMS
GUIDELINES AND PROTOCOLS
CAPACITY BUILDING
LESSONS LEARNED
FUTURE PRIORITIES

BACKGROUND INFORMATION

The Information Revolution (IR) led by Ethiopia's Ministry of Health (MOH) was one of four key transformation agendas in the first Health Sector Transformation Plan (HSTP). The IR agenda was launched in response to increasing demands for health information and opportunities to leverage advancements in information and communications technology (ICT). To advance the IR objectives, the MOH developed a national IR Roadmap (2016-2020) identifying two pillars of focus with actionable and measurable interventions: (1) enhance the culture of information use for decision making, and (2) implementation and scale-up of prioritized health information systems (HIS) and tools The IR agenda continues to be a major priority in HSTP-2 to bring fundamental cultural changes and accelerate the process of data use within the health sector.



This is a summary of the IR Roadmap Booklet highlighting key accomplishments and learnings from the last five years, as well as recommendations for the next five years. More detailed information is available in the IR Roadmap Booklet. Information provided in the IR Roadmap Booklet and this summary IR Progress Report is intended to be used by the federal government, donors, partners and other stakeholders supporting the health sector.

CONNECTED WOREDA STRATEGY



The Connected Woreda Strategy is Ethiopia's program to support and implement the IR agenda and HTSP priorities at the woreda level. The program aims to:

- Improve the quality and transformation of health information at all levels.
- Improve the culture of using health information for decision at all levels.
- Strengthen HIS infrastructure through improved connectivity and digitization of health information system tools.
- Strengthen IR implementation and expansion to all regions.

A woreda that has established a data use culture and is taking advantage of digital tools at 90% of the facilities within the woreda are credited as Model Facilities.

CONNECTED WOREDA – IMPLEMENTATION PHASES

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	EMERGING FACILITY	CANDIDATE FACILITY	MODEL FACILITY				
	BINB						
		Typical	Profile				
	 Facilities working to improve core Measure & Evaluation (M&E) infrastructure and practices across the board Score less than 65% on assessment criteria 	 Facilities have basic M&E infrastructure in place, but have room to improve in data quality, and administration and clinic data use. Score between 65% and 90% on assessment criteria 	 Highest-performing facilities Score over 90% on assessment criteria Can access and share data offline (e.g., paper, flash drive) 	 Model Facilities Can access and share data 			
Interventions Focus by Assessment Category							
M&E Systems & Capacity	 Capacity building to strengthen HIS infrastructure and supportive supervisions 	 Targeted support for lower-performing facilities. (Assumes M&E infrastructure is mostly in place at this level.) 	 Document Model Facility best practices Provide a site to test, demonstrate and diffuse data-use best practices 	 Same as Model Facility May demonstrate how digital tools complement processes at Model Facility levels Maxingludo 			
Data Quality	 Capacity building for data completeness and timeliness, and performance of Lot Quality Assurance Sampling (LQAS) 	 Targeted support for lower-performing facilities. (Assumes most facilities are meeting data quality standards at this level.) 	 May demonstrates now digital tools complement processes at Model Facility levels, such as: » IVR/SMS for monthly/ PHEM reporting » HMIS dochboards 	 May include demonstrations of tools such as Electronic Medical Records (EMR) Fully functional HealthNet 			
Administrative Data Use	 Capacity building for PMT processes and information products presentation and dissemination 	 Adds: Capacity assessments Tailored training materials (job aids) Other support (e.g., 	 Finite dashboards eCHIS and DHIS2 data exchanges Digitalization 	۶۶۶			
Clinic Data Use	 Data monitoring tools such as charts/reports to support service delivery performance 	person-to-person sharing, support for data analytics) • Testing data use incentives	 Range: Intermittent data connectivity and electricity → full connectivity across the woreda Health Extension Workers (HEW) basic literacy and numeracy 				
raphic acronyms	DHIS2District Health InformationeCHISElectronic CommunityHMISHealth Management IIVRInteractive Voice RespPHEMPublic Health EmergeSMSShort Message Service	ation Software 2 y Health Information System nformation System onse ncy Management e	 Woreda Health Office (WoH capabilities to replace pape HEWs use standard process processes may not function Minimum training requirem workers and administrators 	IO) has digital reporting er submissions ses (i.e., non-standard n correctly with eCHIS) nents met by relevant health s			



Health and health-related data in Ethiopia are gathered through different institutions and processes, including surveys and surveillance systems to improve evidence-based decisions making at all levels. Over the last five years, updated and new survey and surveillance data were collected in alignment with the IR agenda.



DATA QUALITY



Improving data quality and promoting the culture of information use are the center of the IR agenda. The following graphic provides information on the quality assurance.

Data Quality Assurance – Timeline

		Year 1 2016	Year 2 2017	Year 3 2018	Year 4 2019	Year 5 2020
	Five Years HSTP					
Bas	sline & endline assessments	PRISM				PRISM
Woreda Based Planning and Annual Health Sector Review Meetings						
Ar	nnual assessment (MOH/RHB)		Annual DQR	Annual DQR	Annual DQR	
Q	uarterly assessment by RHBs	Routine DQA				
	onthly supervision by WoHO	Supportive Supervision	Supportive Supervision	Supportive Supervision	Supportive Supervision	Supportive Supervision
	Monthly self assessment by health facilities	LQAS	LQAS	LQAS	LQAS	LQAS
Graphic acronyms• Annual Data Quality review (DQR)• Performance of Routine Information System Management (P• Data Quality Assessment (DQA)• Regional Health Bureaus(RHBs)				anagement (PRISM		



DEVELOPING

Regulation

OSTERING HIS Coordination and

Partnerships

HIS Legislation and

- Woreda Health Office (WoHO)



PROMOTING

DEVELOPING

HIS Policy and

Strategy

HIS Accountability

and Transparency



HIS governance encompasses national-level coordination of investments and strategic planning activities. The MOH endorsed a HIS governance framework two years ago to further define and document HIS governance functions, principles, and structures in a consultative process with stakeholders.



HIS governance framework approved



LAUNCHED

an HIS Steering Committee led by the Minister and national technical working groups (TWGs) established

Digitalization TWGs Designed to support the digitalization pillar of the IR **Data Use Cultural Transformation TWGs** Designed to support the data use cultural transformation pillar of the IR

HIS Governance TWGs

Follow up, monitoring and flagging of the existence of the various HIS governance functions

HEALTH INFORMATION TECHNOLOGY SYSTEMS & SERVICES

eHEALTH ARCHITECTURE



The eHealth Architecture is a blueprint for Ethiopia's health information needs, software and hardware requirements to coordinate IT choices, ensuring appropriate resource utilization, and facilitating access and integration of data. The MOH made progress over the last five years developing and refining the eHealth Architecture blueprint and making investments in the components.

Shared Services	Institution-Based HIS & Data Sources	Population-Based HIS & Data Sources	Analytics & Business Intelligence	
Shared Health Record				LEGEND:
Client Registry (EMPI)	Facility Surveys (SPA+)		Analytics and Bl	Development not starte
eHIRIS	IDSR / ePHEM Health Insurance / eHNIIS	CRVS		Under Development
Master Facility Registry	elmis/hcmis eris	Surveys	Data Warehouse	Functional Application
Health Data Dictionary	ehmis/dhis 2 📕 hgis 🦷	Census	EHDAP	
ţ	\bigcirc	$\widehat{\mathbf{t}}$	ţ	f External Systems
Authentic	Interoperability Service ation • Encryption • Routing • Transformation • Qu	euing • Validation • Translat	ion	IFMIS
	¢			Agriculture
	Point of Service HIS			Metrology
Nutrition	eLIS Surveillance IVR	EMR	Patient Portal	Education
eCHIS				
eH	ealth Architecture Governance, Principles	, Processes and Standard	ls	

- MFR system customization completed
- Data about health facilities collected from different sources and being reconciled
- A plan to generate an authoritative list of all health facilities by the end of the current fiscal year
- National Health Data Dictionary (NHDD) is up and running and National Classification of Diseases (NCoD) is loaded; indicators are loaded into NHDD.
- A mobile app to access the data dictionary
- Develop client registry and shared health records in the later years of the project

Interoperability Services

- Data exchange between different systems being demonstrated
- Additional priority use cases have been identified and planned to be implemented
- eHealth Architecture (eHA) and interoperability academy established at Mekelle University

eHealth Architecture

- Conduct eHA maturity assessment
- Develop a roadmap for national eHA implementation
- Strengthen development and adoption of national data and interoperability standards





5



HEALTH INFORMATION TECHNOLOGY SYSTEM STANDARDS & INTEROPERABILITY

HIS and ICT standards promote collection, exchange, use and reuse of health data across unaffiliated organizations and technologies, reducing fragmentation. The MOH advanced guidelines and protocols supporting HIS standards over the past five years to advance interoperability of health data.





the NHDD as the authoritative source for indicators and HIS standards





ESTABLISHED TWGs

to develop EMR standards (i.e., minimum data sets, functionalities, technical requirements)

ERS ELECTRONIC REGULATORY INFORMATION SYSTEM





Planned Activities:

- Upgrade eRIS to address new requirements and new modules
- Implement i-Import integration with electronic single window
- Finalize the development and deployment inspection module in eRIS with automatic synchronization to i-License and i-Register
- Implement i-License (health facilities) in 100 woreda level offices to register all public and private facilities

eRIS is the umbrella system at Ethiopia Food and Drug Administration (EFDA) comprised of multiple sub-systems which work together:



HEALTH MANAGEMENT INFORMATION SYSTEM (HMIS)

An HMIS supports routine collection, aggregation, analysis, presentation and utilization of health and health related data for evidence-based decisions by health workers, managers, policy makers and others. Since launching the IR Roadmap, Ethiopia deployed the electronic DHIS2 to support HMIS activities.



ELECTRONIC COMMUNITY HEALTH INFORMATION SYSTEM (eCHIS)



The eCHIS is a mobile platform that assists in the management of health extension programs through the collection and use of demographic data, health services delivery information and service utilization. Over the last five years, the MOH expanded eCHIS functionality and the number of implementation sites.



9

MASTER FACILITY REGISTRY (MFR)



The MFR is a platform for collecting, storing and sharing authoritative information on health facilities in the country. The MFR data can be used by public and private sector stakeholders to align their systems and programs.



10



updated EMR software to maintain patient records of People Living with HIV (PLHIV) taking antiretroviral medications

HUMAN RESOURCE INFORMATION SYSTEM (HRIS)

An HRIS enables users to manage human capital and track the health workforce. In recognition of the need to better track and manage the health workforce, the MOH made strides in planning for an electronic HRIS.



Planned activities:

- Complete the development of the human resource administration, development, and licensure modules
- Implement HRIS at MOH, agencies, RHBs, zonal health departments (ZHDs), WoHOs and HFs



PLANNING FOR DEPLOYMENT OF IHRIS SOFTWARE AT THE NATIONAL AND SUB-NATIONAL LEVELS

PUBLIC HEALTH EMERGENCY MANAGEMENT SYSTEM (PHEM)

The MOH deployed the country's PHEM in 2018 to capture and analyze public health emergency data.





Ethiopia's Digital Health Response to COVID-19

Across the globe, digital health has been brought to the forefront as a crucial tool to combat the COVID-19 pandemic. In Ethiopia, critical digital tools were developed and implemented to mitigate the effects of the pandemic:

Critical Item Availability



Hand sanitizer quality control:

a system to enable the EFDA to monitor and control hand sanitizer quality

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Expedited product registration:

Simplified process to expedite licensing and registration of COVID-19 supplies



Surveillance and Tracking

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National COVID-19 surveillance and tracking system:

supports the enrollment and tracking of suspected cases; captures symptoms, demographics, risk factors, and exposures; creates lab requests; links confirmed cases with contacts; and monitors patient outcomes



Surveillance follow-up app:

an application which builds on the case surveillance and tracking system of COVID-19 and facilitates registration and follow-up of suspects and contacts of confirmed cases who will be followed for 14 days



Toll-free recording app:

an app which records and stores data from individuals who call 8335 and 994 short codes to report their COVID-19 status and/or concerns



Data analytics and visualization: a dashboard for EPHI and MOH to monitor the COVID-19 situation in the country



Port-of-entry health declaration for COVID-19 case surveillance program:

an application that travelers use to record personal identification information including phone number; travel history; illness symptoms; and their place of residence



Health facilities reporting app:

an application used by health workers to report suspected cases at health facilities to the rapid response teams

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Community house-to-house screening app:

a mobile application for Health Extension Workers that helps in data collection and serves as job aid for nationwide door-todoor COVID-19 screening campaigns



Health Communication and Education



WhatsApp helpline:

to support users on health queries or concerns and direct them to accurate information sources



Rumor and suspected cases reporting and investigation application:

developed for community members selfreporting when they have COVID-19 symptoms



The MOH has been working with Ethio Telecom to provide internet connection to all health facilities and health administration units across the country via HealthNet, a Virtual Private Network (VPN) service. HealthNet allows these sites to access digital tools such as DHIS2 to timely enter data and submit reports.



Key benefits of HealthNet



Improve timeliness of reports



Improve accuracy and completeness of health data



Data access during emergency internet shut-down



Timely feedback to hospitals, health centers and woreda offices and improved data quality and use



Use by multiple systems



13

Future uses of improved network connectivity via HealthNet



Ethiopia deployed and enhanced a suite of interoperable ICT systems for managing health system supply chain information in support of the IR agenda.



GUIDELINES AND PROTOCOLS



Through additional supportive policies, laws, regulations, and guidelines, the MOH enhanced the enabling environment for health information systems to operate.



CAPACITY BUILDING



Ethiopia launched several capacity building programs to enhance the knowledge and skills of the health workforce to increase use of health information for decision making.





ST. PETER'S COMPREHENSIVE HOSPITAL LAUNCHED A NATIONAL DIGITAL HEALTH AND INNOVATION CENTER



DHIS2 CAPACITY BUILDING

trainings at the national and sub-national levels



across 6 universities participated in an implementation research and capacity building workshop in 2019, to ARTICIPANTS identify priority learning questions.



Began offering pre-service health informatics programs using the nationally harmonized, Ministry of Education approved bachelor's level health informatics curriculum.









15





a research grant to document learnings from IR initiatives



SONS

The following key lessons were learned through the implementation of the IR agenda between 2016-2020:

Engaging stakeholders at different levels of the health

system increased buy-in for the IR agenda, and

mobilized resources to advance key priorities.

Investing in capacity building programs to enhance
workforce knowledge and skills improved data use
practices.
Prioritizing data for decision making, maximized the
use of limited human and financial resources.
Integrating the transformation agenda into the
health outcomes.
Enhancing data and ICT system governance and
national leadership improved coordination and
collaboration across stakeholders and led to more



effective implementation of the IR agenda.

FUTURE PRIORITIES

Accomplishments and lessons from the past five years have helped shape future priorities. Looking forward, the IR strategic objectives outlined in HTSP 2 are as follows:

- $\rightarrow\,$ Ensure existence and functionality of the HIS/digital health governance's structure
- → Establish learning and knowledge management system at national and subnational levels
- → Improve confidence on the quality of the data generated through routine sources by instituting sustained and comprehensive implementation of data quality assurance techniques at all levels in the health system
- → Create awareness and build capacity of health workers on data quality and information use through continuous training. Mentorship, and coaching
- → Strengthen initiatives to improve the culture of use of data for action at point of service delivery and administrative levels
- → Create model Woredas and hospitals on improved data quality and information use
- → Advance data analytics approaches and practices from the routine descriptive and exploratory analytics to big data, predictive data modeling, data mining, and machine learning to respond to the growing demand to generate evidences to solve complex public health problems
- → Generation and translation of evidence to policy and action by triangulating data from routine, survey, surveillance, and research
- → Advance the eHealth Architecture and interoperability framework
- $\rightarrow\,$ Develop standards and guidelines for selection, development and use of digital health solutions
- → Strengthen digitization of routine and non-routine data collection, management, analysis and use
- → Develop digital solutions for health worker decision support on prioritized health services
- \rightarrow Digitize digital health interventions for clients that improve client-provider interaction and increase health literacy
- → Establish eLearning systems for the health workforce on Continuing Professionals Development (CPD) programme for pre-service and inservice training and education
- ightarrow Digitize and implement an individual level health data system
- ightarrow Strengthen ICT infrastructure at all levels of the health system
- ightarrow Establish a national health data warehouse

The MOH in collaboration with other health sector stakeholders will work to coordinate, collaborate, invest in

and advance these key

priorities.

17

INFORMATION REVOLUTION FIVE YEAR PROGRESS REPORT

Disclaimer:

This Booklet is made possible by the support of the American people through the United States Agency for International Development (USAID). The contents are the sole responsibility of the Ministry of Health of Ethiopia and do not necessarily reflect the views of USAID or the United States Government.