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MINISTRY OF HEALTH - ETHIOPIA

YEAR II **ANNUAL** **REPORT**

DIGITAL HEALTH ACTIVITY (DHA)

OCTOBER 1, 2020–SEPTEMBER 30, 2021





DIGITAL HEALTH ACTIVITY (DHA) YEAR II

ANNUAL REPORT

Photo caption: Health Extension Worker from the Daro Health Post (Oromia Region) delivering health service using the electronic Community Health Information System (eCHIS).

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Photo: Health Extension Worker in Ifa Jalala Health Post, Oromia Region, using the eCHIS

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Acronyms

AAD	average absolute deviation	HRL	human resources licensure
CPD	continuous professional development	HSC	health sciences college
DHA	Digital Health Activity	HSTP II	Health Sector Transformation Plan-II
DHBp	Digital Health Blueprint	iHRIS	integrated human resources information system
DHIS2	District Health Information Software 2	IR	Information Revolution
eAPTS	Electronic Auditable Pharmacy Transactions and Services	IVR	interactive voice response
eCHIS	Electronic Community Health Information System	JSI	John Snow, Inc.
EFDA	Ethiopian Food and Drug Administration	KPI	Key Performance Indicator
eHA	Electronic Health Architecture	LLIN	long-lasting insecticidal net
EHR	electronic health record	MDR-TB	multidrug-resistant tuberculosis
eLMIS	electronic logistics management information system	MFR	Master Facility Registry
EMR	electronic medical record	PMT	performance monitoring team
EPHI	Ethiopian Public Health Institute	RDQA	routine data quality assessment
EPI	Expanded Program on Immunization	RHB	regional health bureau
EPSA	Ethiopian Pharmaceutical Supply Agency	RMNCH	reproductive, maternal, newborn, and child health
eRIS	electronic regulatory information system	RRF	reporting and requisition form
ESW	electronic single window	SOCI	Stages of Continuous Improvement
HC	health center	SOP	standard operating procedure
HEP	Health Extension Program	TB	tuberculosis
HEW	health extension worker	TBGH	Tirunesh Beijing General Hospital
HITD	Health Information Technology Directorate	TIC	treatment initiation center
HIT	health information technician	TOT	training of trainer
HMIS	health management information system	USAID	United States Agency for International Development
HRA	Human Resources Administration		
HRIS	Human Resources Information System		



About DHA

WHO WE ARE

The Digital Health Activity (DHA) is a five-year (October 2019–September 2024), USAID-funded Activity implemented by John Snow, Inc. (JSI). DHA helps Ethiopia achieve its Information Revolution (IR) Roadmap, a critical component of the Health Sector Transformation Plan (HSTP).

WHAT WE DO

DHA is helping the government of Ethiopia build a sustainable, resilient, and interoperable health information system (HIS) that ensures the entire health sector has the data, analytics, and skills necessary to improve the health and well-being of all Ethiopians. DHA's three areas of support are:

WHERE WE WORK

DHA implementation covers the 11 regions and the two city administrations in Ethiopia. The Activity provides focused support in 100 woredas across the country (Figure 1).

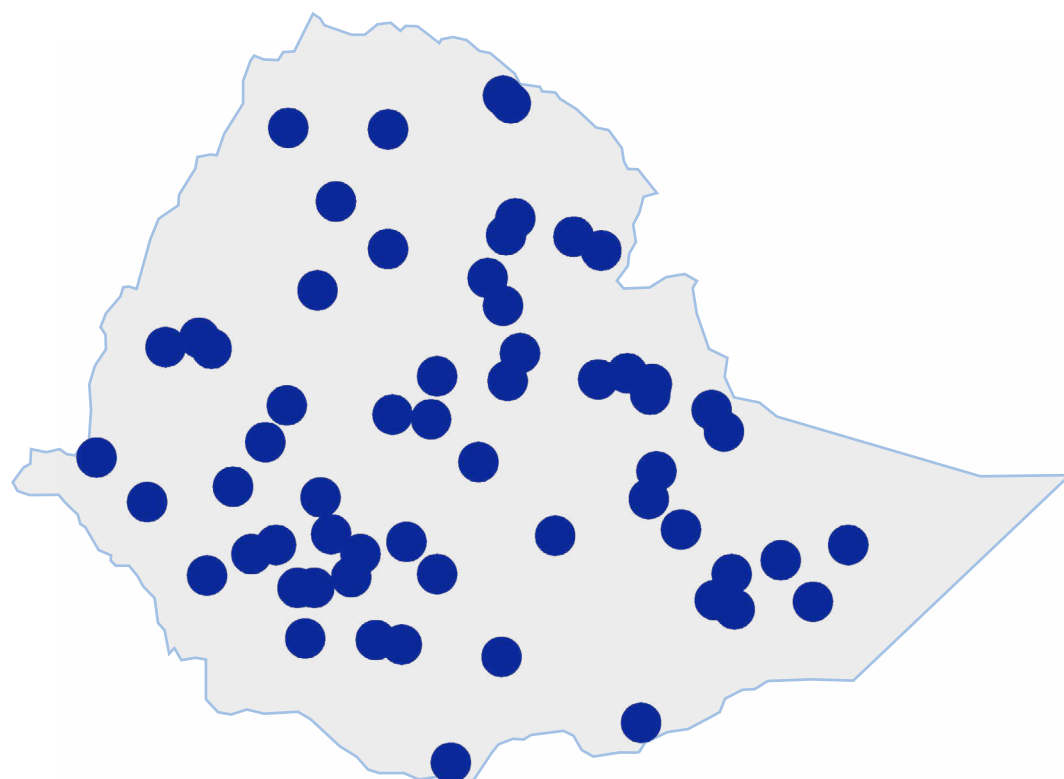


Figure 1. DHA implementation areas



DIGITIZATION: The process of converting information into a computer-readable format. DHA supports the co-creation of feasible solutions to digitize, integrate and scale up priority digital health tools including HIS.



DATA USE: The development of a culture of data use at all levels of the health system so that data is used to make decisions in health planning, performance management, and service delivery.



GOVERNANCE AND CAPACITY BUILDING: The adoption of best practices and policies in digital health interventions, data use, data system architecture, and information technology infrastructure. It also includes strengthening health science colleges (HSCs) and universities to ensure the availability of digital skills within the health system to improve service quality and increase use of data for decision making.

Message from the Chief of Party

It is a pleasure to share with you the major achievements of the Digital Health Activity (DHA) in its second year of implementation (October, 2020 to September, 2021). The USAID funded DHA is designed in support of the information revolution (IR) agenda of the ministry of health (MOH) to address the challenges of accessing quality data for decision making within the health system. To this effect, DHA has been supporting the MOH in digitization, data use, and governance of the health information system (HIS). The DHA team is building on JSI's prior experience in supporting the HIS. Our dedicated technical staff harness the power of partnership with talented local and international experts to achieve results.

Our second year implementation was marked by achievements on many fronts. The quality, reach, and utilization of many subsystems have improved. The Activity has built the capacity of institutions to effectively use different subsystems. Significant changes have been observed in generating and using quality data for decision-making at all levels of the health system. Efforts have been made to foster an enabling policy environment to support the implementation of digital health activities.

“

Our second year implementation was marked by achievements on many fronts. The quality, reach, and utilization of many subsystems have improved. ”

“

DHA has been supporting the MOH in digitization, data use, and governance of the health information system (HIS). ”

”

Despite marked achievements, the COVID-19 pandemic and the conflict in different regions of the country posed significant challenges during the year. DHA responded by supporting the development of a suite of digital tools for COVID-19 vaccine management and response. It has also been actively involved in the quick development and deployment of digital tools which support the response and recovery of conflict affected parts of the country.

Country ownership and sustainability have been the cornerstones of all our interventions from design and development of digital tools to the last mile deployment and support interventions. To this effect, DHA has engaged with universities, health science colleges and youth social enterprises to build their capacity and ensure continuation of support which outlives DHA.

While we celebrate our achievements, I would like to take this opportunity to thank USAID, MOH, regional health bureaus (RHBs), Ethiopian Food and Drug Administration (EFDA), Ethiopian Pharmaceutical Supply Agency (EPSA), and Ethiopian Public Health Institute (EPHI) for their continued partnership and support. I would also like to thank Data Use Partnership (DUP) for the unreserved support and collaboration. Our subcontractors (Dimagi, Websprx, Intrahealth, and OrbitHealth) and the DHA staff deserve my gratitude for their diligence and creativity. We are committed to engaging more with MOH, RHBs, federal agencies, and other stakeholders to overcome challenges and achieve even greater results in the years to come.

“

Country ownership and sustainability have been the cornerstones of all our interventions from design and development of digital tools to the last mile deployment and support interventions. ”

Loko Abraham (MD)
Chief of Party, Digital Health Activity

Overview of DHA's Achievements

This report summarizes activities implemented by DHA during its second year (October 2020–September 2021). During this period, DHA implemented a wide range of activities reaching communities, health workers, health administrative units, public and private health facilities, and higher learning institutions.

With DHA support, various digital tools were designed, developed, piloted, deployed, operationalized and maintained. In the reporting year, the Activity supported, in accordance with the World Health Organization's classification of digital health interventions: 2 provider oriented tools in over 1200 health facilities, 7 manager oriented tools in 25 health institutions, 3 data service oriented tools in up to 4500 facilities, and 6 client oriented tools in six institutions.

To increase adoption of digital health technologies within the health system, DHA provided subsystem-specific maintenance support, end-user training, and gap-filling material support. Through off-site and on-the-job training, the Activity trained close to 10,000 individuals, improving their digital skills and enhancing their ability to produce and use high-quality data for decision making. DHA conducted post-training follow-up support, supportive supervision, and mentoring to identify gaps and provide need-based material and technical support to the institutions.

“Through off-site and on-the-job training, the Activity trained close to 10,000 individuals, improving their digital skills and enhancing their ability to produce and use high-quality data for decision making.”

To enable subsystems to share data and support proper use, the Activity has been ensuring interoperability during tool development and deployment by identifying use cases. Once systems were developed and deployed, DHA supported the migration of legacy data to create a single database of records, thereby availing historical data for program management decisions, clinical follow up of patients, and research. Feedback has been continuously collected and used to refine tools to meet users' current and future needs. Beyond improving data quality and use among DHA-supported institutions, these activities improve processes and enhance service quality and patient outcomes.

“DHA supported the migration of legacy data to create a single database of records, thereby availing historical data for program management decisions, clinical follow up of patients, and research.”

DHA supported 334 health facilities in all regions of Ethiopia under the Connected Woreda Program. This support helped 27 percent (90) facilities move from a lower to a higher category along the connected woreda pathway, demonstrating underlying improvements in infrastructure and data quality and use.



DHA SUPPORTED 334 health facilities in all regions of Ethiopia under the Connected Woreda Program.

To create government ownership and sustain current and future gains, DHA supported 11 HSCs and two universities and supported the establishment of 13 youth enterprises. These institutions are expected to replace DHA's support and thereby maintenance of positive changes beyond the life of the Activity.

Without policy guidance, HIS interventions are not fully effective. DHA has supported the development, endorsement, and operationalization of three HIS governance documents; nine more are in development. These documents provide policy and technical guidance for the implementation of digital health interventions in Ethiopia.



DHA SUPPORTED 11 HSCs and two universities and supported the establishment of 13 youth enterprises.

“DHA has supported the development, endorsement, and operationalization of three HIS governance documents; nine more are in development.”



Supporting the Digitization of the Health System in Ethiopia

Attaining the health-related Sustainable Development Goals and ensuring universal health coverage requires innovative digital health approaches. Digital technology strengthens national health systems by increasing the availability, quality, and usability of health information and health care services. Ethiopia identified digitalization of the health system as one of its priorities in its IR Roadmap, an important

component of the first and the second health sector transformation plans (HSTPs I & II).

DHA has supported Ethiopia's vision of digitizing the health system since 2019. The Activity has been supporting the following systems during this reporting year:

Electronic community health information system (eCHIS)



The eCHIS is a mobile-based application that health extension workers (HEWs) use to implement the flagship Health Extension Program (HEP). The eCHIS not only helps capture, analyze, transmit, and report data generated from HEP implementation, but also improves the standard and quality of care provided by the HEWs.

During this reporting year, DHA completed the development of all agrarian HEP modules. The development and deployment of the eCHIS modules followed a phased manner. DHA supported the deployment of the reproductive maternal, newborn, and child health (RMNCH) module, with the exception of the child health module, which is being piloted, for more than 5,200 eCHIS users in 1,275 health posts in 97 agrarian woredas. The tuberculosis (TB), malaria, and leprosy modules were deployed in 178 health posts in seven woredas for almost 500 eCHIS users.

To ensure eCHIS use following training, DHA conducted site-level supervisions and provided gap-filling support including tablet procurement and distribution. The training and supervision helped HEWs to use eCHIS in routine service delivery and to register more than 541,000 households. The integrated community case management module was piloted; piloting and deployment of the

remaining HEP modules will continue throughout DHA.

DHA enabled the eCHIS application to electronically send and receive referral information, push notifications to health providers and patients, produce reports and dashboards, and monitor disease and adverse treatment outcomes of individual patients. In partnership with Dimagi, DHA helped improve the application's response time, optimized the speed and user experience. The application's build up time also improved from 30 to 4 minutes. These features improve the continuum of care, quality of chronic care, treatment adherence, and patient outcomes, and are also expected to increase system maturity and use.



In partnership with Dimagi, DHA helped improve the application's response time, optimized the speed and user experience. The application's build up time also improved from 30 to 4 minutes.



DHA completed the development of all agrarian HEP modules.



eCHIS implemented in
1,275
health posts



5,200

eCHIS users trained on the RMNCH module



More than

541,000

households registered using eCHIS

Electronic medical records (EMRs)



The EMR system automates the manual patient management system. DHA, with its consortium partner, OrbitHealth, developed and implemented EMRs in selected health facilities during the year. At Tirunesh Beijing Hospital (TBGH), DHA provided material (e.g., tablets, desktops, printers, servers)

and technical support (staff training and installation of local area network) to implement EMRs. The EMR system was launched in the presence of State Minister of Health Alemtsehay Paulos and USAID's Deputy Mission Director Sinu Kurian.



Photo: EMR launch ceremony at Tirunesh Beijing General Hospital.

In Addis Ababa Burn Emergency and Trauma (AaBET) hospital, EMR implementation was prioritized in the registration, emergency triage, and outpatient departments. By expanding the EMR system to other departments in the remaining Activity years, the hospital will become fully digital. DHA also scaled up the EMR system to three health centers, where health workers quickly adopted the system. In these facilities, the migration of almost 900,000 individual records from the legacy system enabled health service providers to easily access historical patient records for better follow up.



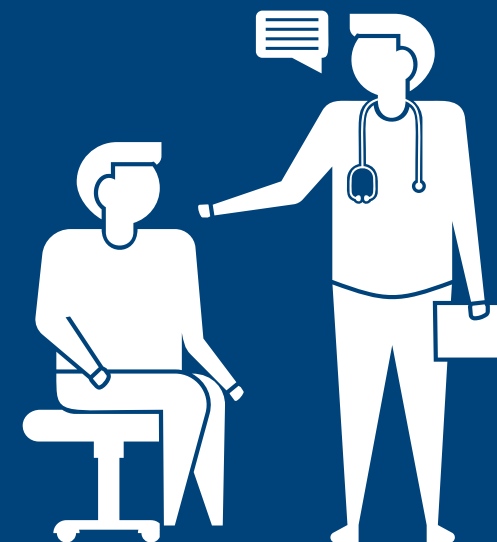
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The EMR system was launched in the presence of State Minister of Health Alemtsehay Paulos and USAID's Deputy Mission Director Sinu Kurian.

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Early results from the EMR deployment demonstrate improvements in health care provider's capacity to provide standardized care, gather comprehensive patient history, conduct complete physical examinations, access patient records, and retrieve records for analysis and medical-legal issues.

Clients are also experiencing faster triaging and intra-facility referrals as well as standardized care. Institutional leaders are able to measure staff productivity and analyze service indicators in real time.

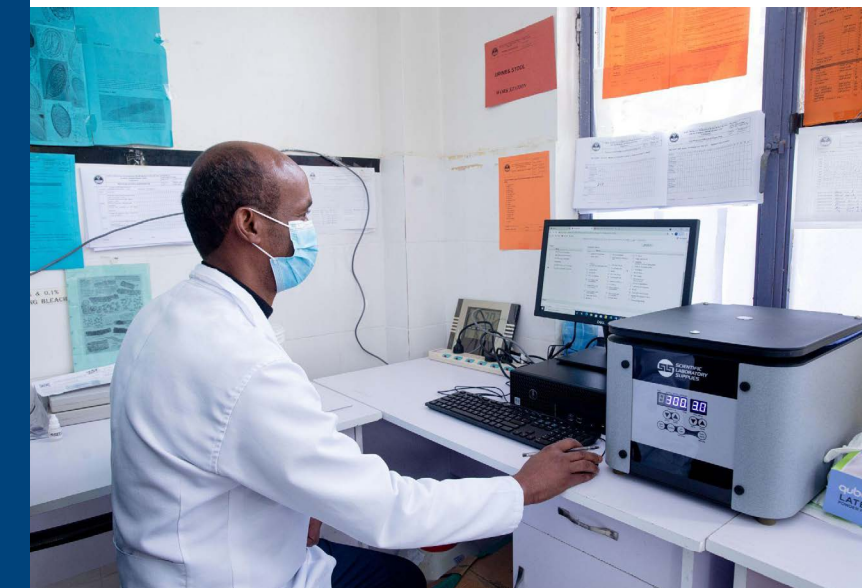
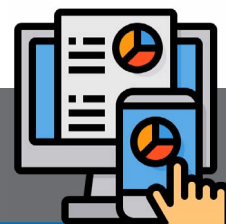


Photo: EMR implementation at Ferensay Health Center.

District Health Information Software 2 (DHIS2)



The DHIS2 is a digital tool for collection, validation, storage, analysis and communication of health programs data. In Ethiopia, an offline and web-based version of DHIS2 has been implemented in almost all public health facilities as a major platform of the national health management information system (HMIS). During the reporting year, DHA conducted close to 1,200 site visits and provided on-the-job training to over 1,600 system users. The supervision and training focused on improving user capacity to analyze, visualize, use, and report data using DHIS2. The capacity building efforts also helped ensure system functionality, efficiency, and use.

“In Ethiopia, an offline and web-based version of DHIS2 has been implemented in almost all public health facilities”



DHA customized DHIS2 to capture and track longitudinal individual level data for multidrug-resistant tuberculosis (MDR-TB) patients. The application, called MDR-TB tracker, has offline data collection capability and provides summary dashboards and reports for individual patient monitoring and follow up. The tracker is used at 67 MDR-TB treatment initiation centers (TICs) nationally. During the year, DHA provided end-user training for staff in all TICs, made infrastructure upgrades in selected TICs, and supported the migration of historical patient data.

“The tracker improved quality of reporting for programmatic management of MDR-TB, reduced lost-to-follow up patients, and increased real-time access to data for early course correction.”

The marked improvement in TIC data quality checks is attributable to the MDR-TB tracker (Figure 2).

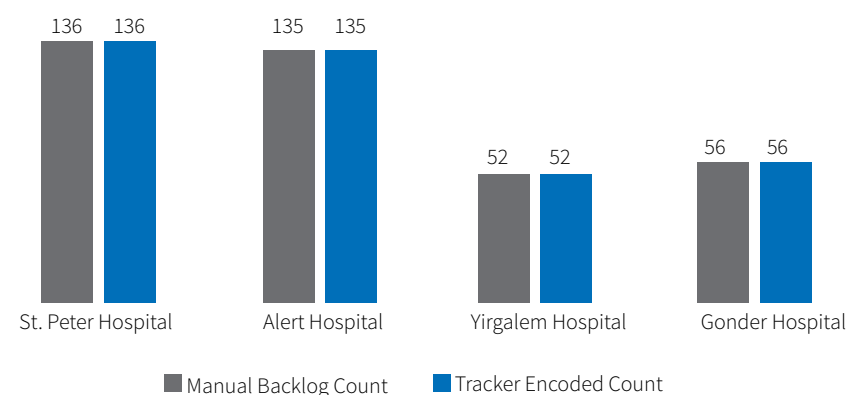
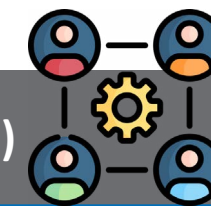


Figure 2: Comparison of MDR-TB Tracker-Reported Data to Backlog Source Documents (Verification) by Learning Site, 2021

Integrated human resource information system (iHRIS)

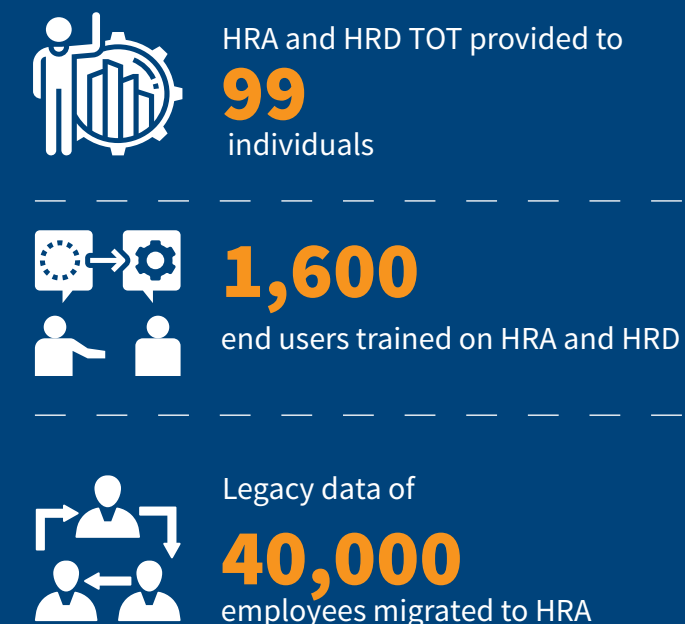


The iHRIS collects, stores, and shares information about an organization's employees. It helps to implement the core human resource functions, which include planning, recruitment, placement, performance management, learning, and development.

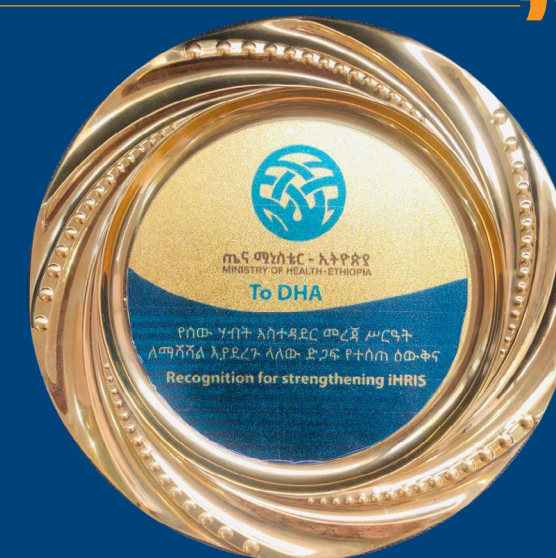
“DHA identified, adopted, and customized the iHRIS, and in partnership with IntraHealth, supported the development of the human resource administration (HRA) module. The Activity also developed the human resource development (HRD) and human resource licensure (HRL) modules based on MOH requirements.”

The HRA module helps track employees' performance and leave management and provides reports and dashboards. The HRD module tracks details of an employee's professional growth and development issues such as training and continuous professional development (CPD). The HRL module enables health professionals to renew, request, and receive professional licenses and good-standing letters. The modules are designed to protect employee confidentiality and security, and privacy of sensitive information.

During the reporting year, DHA piloted all the HRA and HRD subsystems at the MOH, EFDA, and Addis Ababa City Administration Health Bureau. DHA provided training of trainers (TOT) to 99 individuals who helped cascade the training to over 1,600 end users. The legacy data of over 40,000 employees were also migrated to the HRA subsystem. The HRL subsystem has also been made ready for piloting.



“DHA received an award from MOH in recognition of its effort to better health human resource management in Ethiopia.”



Recognition plaque from MOH for DHA's contribution to strengthening iHRIS.

Electronic logistic management information system (eLMIS)



eLMIS helps ensure the availability of the right quantity and quality of essential health commodities at the right time at all levels of the health system. The eLMIS aggregates, analyzes, validates, and displays data that can be used to make logistic decisions to ensure a smooth supply chain.

Vitas

The EPSA uses Vitas, a software, to track procurement and distribution of pharmaceuticals and to manage movement and storage of commodities at its center and regional hubs. During the reporting year, DHA added important features in Vitas that strengthened warehouse security; reduced wastage rates from around 3 to nearly 0 percent; and accelerated the process of item receipt, warehouse operations, distribution, financial transactions, and fleet management. To ensure continued functionality of the system, DHA provided maintenance support at the EPSA center and its regional hubs and resolved 95 percent of 230 issues identified.

DHA added important features in Vitas that strengthened warehouse security; reduced wastage rates from around 3 to nearly 0 percent; and accelerated the process of item receipt, warehouse operations, distribution, financial transactions, and fleet management.



Photo: EPSA Addis Ababa Branch.

Moreover, the Activity developed an online ordering capability for private health facilities and trained more than 300 individuals from private and public health facilities including EPSA. As a result, close to 2,000 requests are being processed at EPSA. Similarly, DHA automated the purchase order (PO) tracking system, which tracks all transactions from raising POs to closure of contracts. This provides better visibility for pipeline stock. The Activity also provided refresher training to 533 individuals on PO tracking in the reporting year.

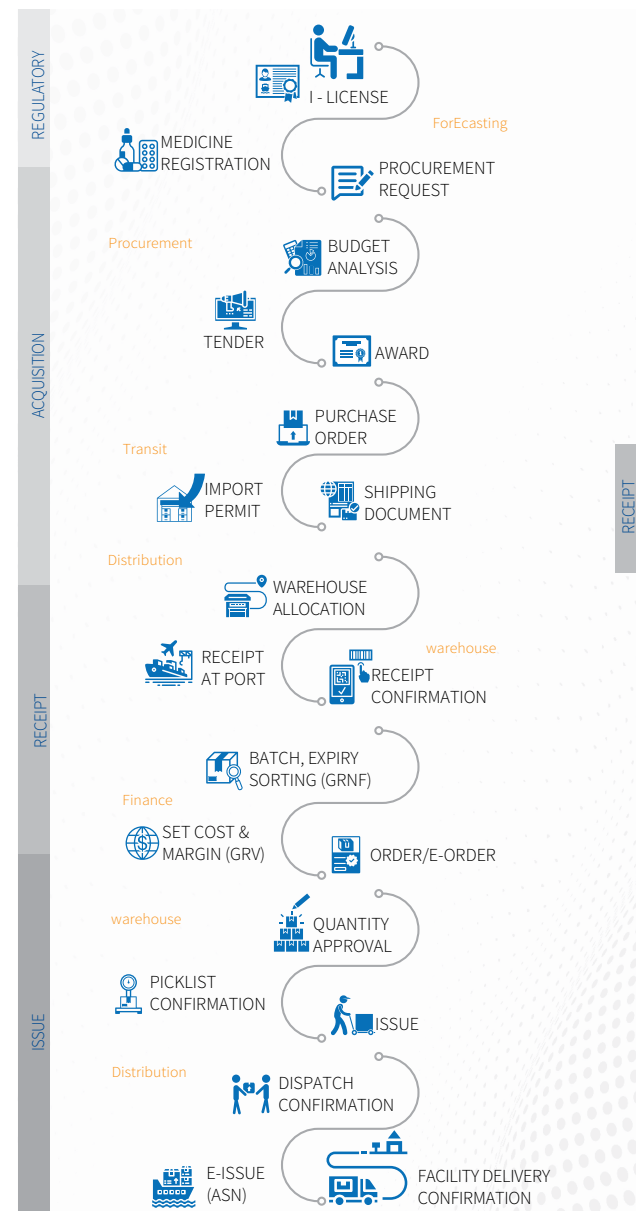


Figure 3: Ethiopian Pharmaceuticals Fund and Supply Agency (PFSA) Process Flow

Dagu

At the health center and hospital levels, Dagu software is used for inventory management to create end-to-end visibility of the last-mile supply chain system. During the year, DHA supported updates (Dagu 1.0 to 2.0 and later to Dagu 2.1) and scaled up the latest version of Dagu in 568 health facilities. Over 750 sites using older and newer versions of Dagu received technical support to remedy database and system problems. The activity also provided on the job training to over 1,100 users.

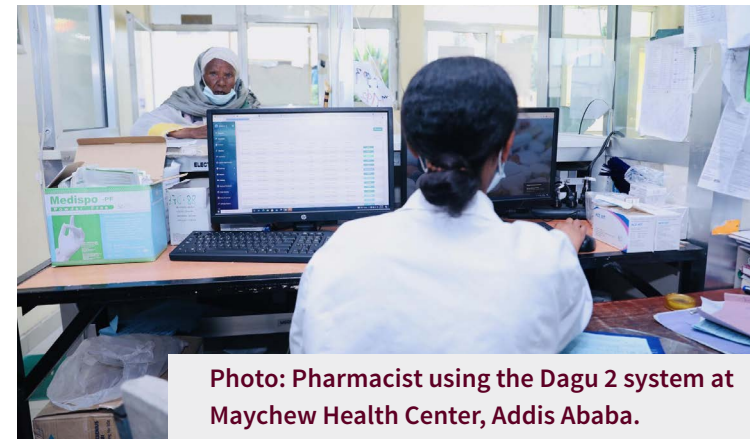


Photo: Pharmacist using the Dagu 2 system at Maychew Health Center, Addis Ababa.

An important update in Dagu 2.1 is its ability to electronically synchronize the reporting and requesting form (RRF) with Vitas. The RRF is used for reporting commodity consumption data and for requesting refill from EPSA's nearest hub to maintain the right stock at the facility level. For health facilities without connectivity, DHA introduced offline RRF synchronization capability. The Activity promoted the use of the electronic RRF and supported health facilities to regularly sync their RRF, which reduced the turnaround time from around 7 days to just an hour, contributing to uninterrupted service delivery without artificial stockouts (Figure 4).

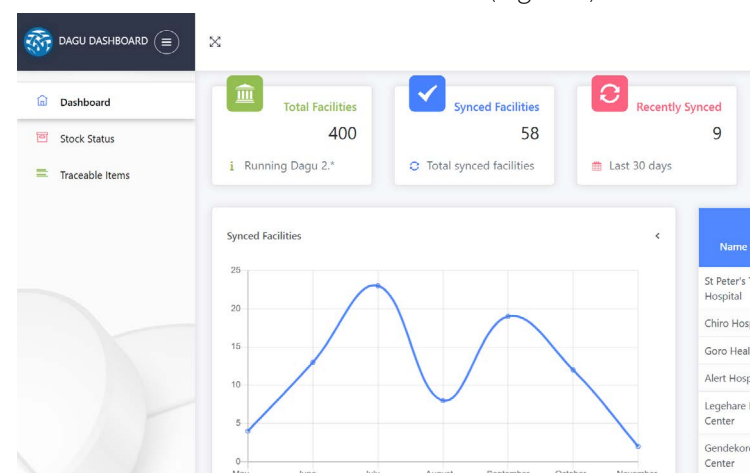


Figure 4: Sample Daggu Dashboard with the number of RRF-Synchronized Facilities over Time



DHA SUPPORTED DAGU VERSION UPDATES
from version 1.0 to 2.0 and later to 2.1.



Dagu technical support provided to over **750** sites



Over **1100** end users trained on Daggu



Scaled up Daggu in **568** facilities

The Activity promoted the use of the electronic RRF and supported health facilities to regularly sync their RRF, which reduced the turnaround time from around 7 days to just an hour

To ensure government ownership of the Daggu software, DHA supported the revitalization of the national technical working group. In collaboration with MOH, DHA also trained 402 individuals of which 169 received TOT. Post-training follow up, mentorship, and on the job training was given to 420 people who were trained during the first Activity year.



eAPTs deployed in
17
facilities

Electronic Auditable Pharmacy Transaction Services (eAPTS) is an application that automates the transactions at the dispensing units of health facilities. The application is capable of exchanging data with Dagu software, allowing stock visibility at a facility store and dispensing unit. DHA developed, piloted, and deployed eAPTS in its first two years. During this reporting year, DHA deployed the application in 17 facilities after enhancing the system based on user feedback from learning sites. To promote the application, DHA provided on-the-job training to 178 end users during the reporting period.

Dagu 2.1 and eAPTS implementation created central visibility into the stock status of 400 health facilities; enhanced accountability at the dispensary level; facilitated fast and smooth transactions; improved health commodity availability; and decreased wastage. According to the pharmaceutical supply chain head of Addis Ababa City Administration Health Bureau, more than \$300,000 worth of stock that would have expired was saved because of the extensive deployment of Dagu 2.1 and eAPTS in Addis Ababa.



178
end users trained
on eAPTS



According to the pharmaceutical supply chain head of Addis Ababa City Administration Health Bureau, more than

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worth of stock that would have expired was saved because of the extensive deployment of Dagu 2.1 and eAPTS in Addis Ababa.



mBrana

DHA has been supporting mBrana, another eLMIS application that provides last-mile visibility of vaccines and long-lasting insecticidal nets (LLINs) transaction and distribution. With the advent of the COVID-19 pandemic, greater visibility into vaccine transaction has become critical. This year, DHA made enhancements to the application and the dashboard to improve its performance and usability, deployed mBrana to 540 health facilities, organized sensitization workshop to 129 regional and zonal focal persons of expanded program of immunization (EPI), and provided on-the-job training for each woreda EPI focal person.

Using the mBrana mobile application and interactive voice response (IVR) system, DHA facilitated the distribution and tracking of 2.9 million LLINs in woredas and households in the Harari and Somali Regions and the Dire Dawa city administration.

Fanos is a dashboard that summarizes and visualizes data from Vitas. DHA provided training for over 80 Fanos users, resulting in a 22 percent increase beyond the target during the reporting year.



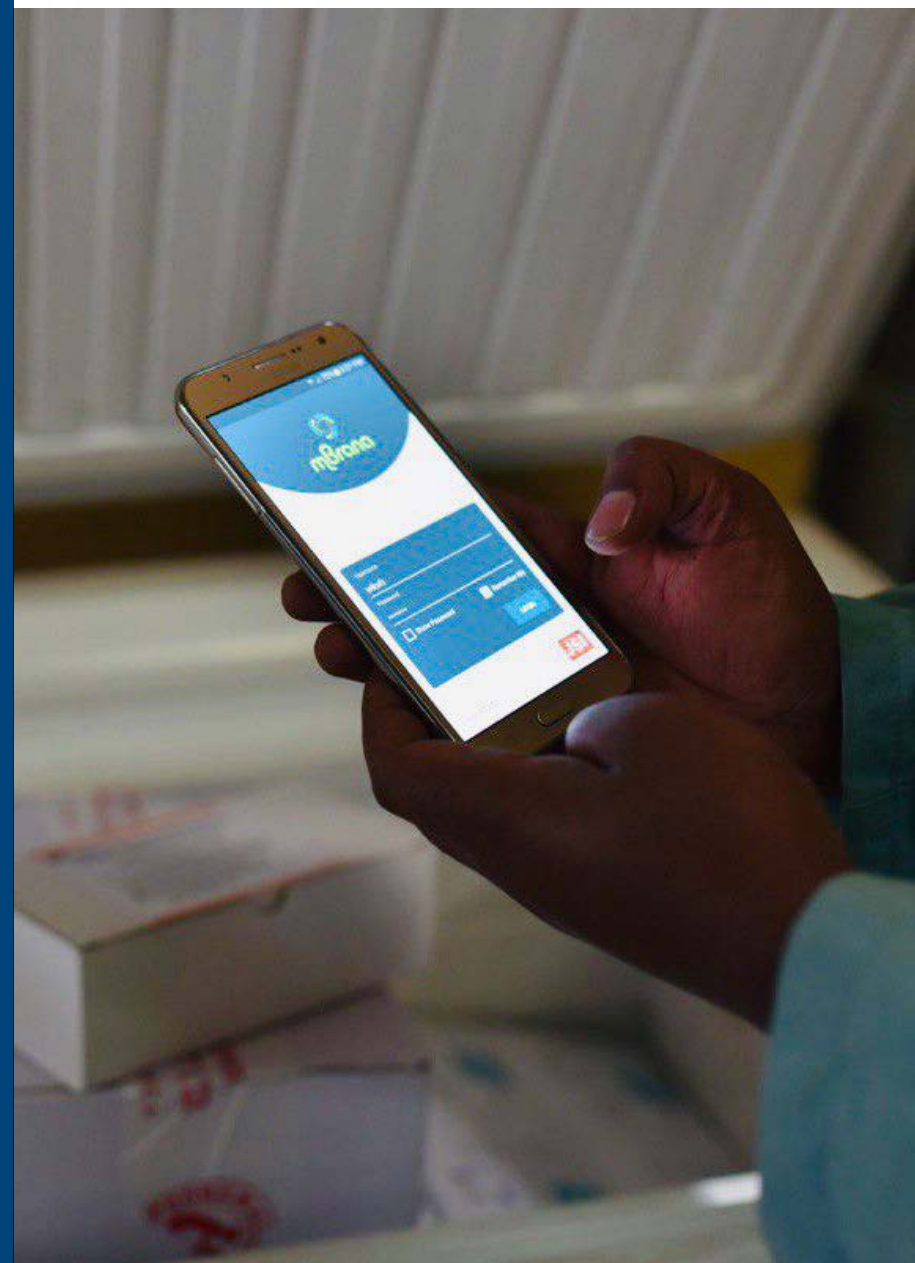
mBrana deployed in
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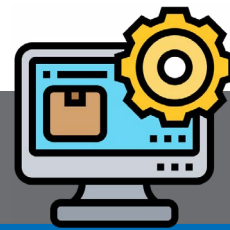
129
regional and zonal EPI
focal persons trained



DHA facilitated the distribution and tracking of 2.9 million long-lasting insecticidal nets in woredas and households in the Harari and Somali Regions and the Dire Dawa city administration.



Electronic regulatory information system (eRIS)



The eRIS is a set of systems used by the Ethiopian Food and Drug Administration (EFDA) in its mission of ensuring the safety, efficacy, and quality of health-related products and services within the country. DHA has supported EFDA in the design, development,

and operationalization of the following application for licensing, registration, import, port clearance, inspection, and pharmacovigilance of medical products (Figure 5):

System Overview of the National Regulatory and Traceability Information System

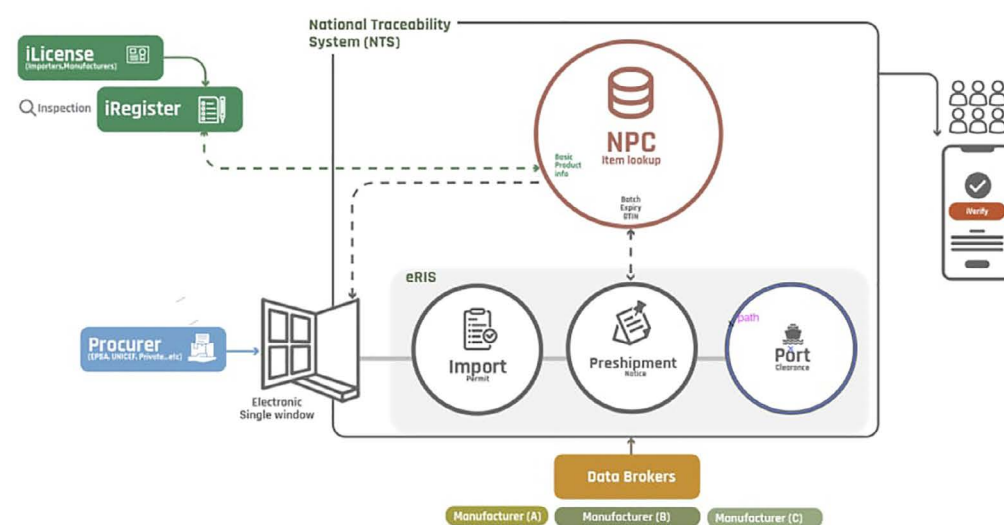


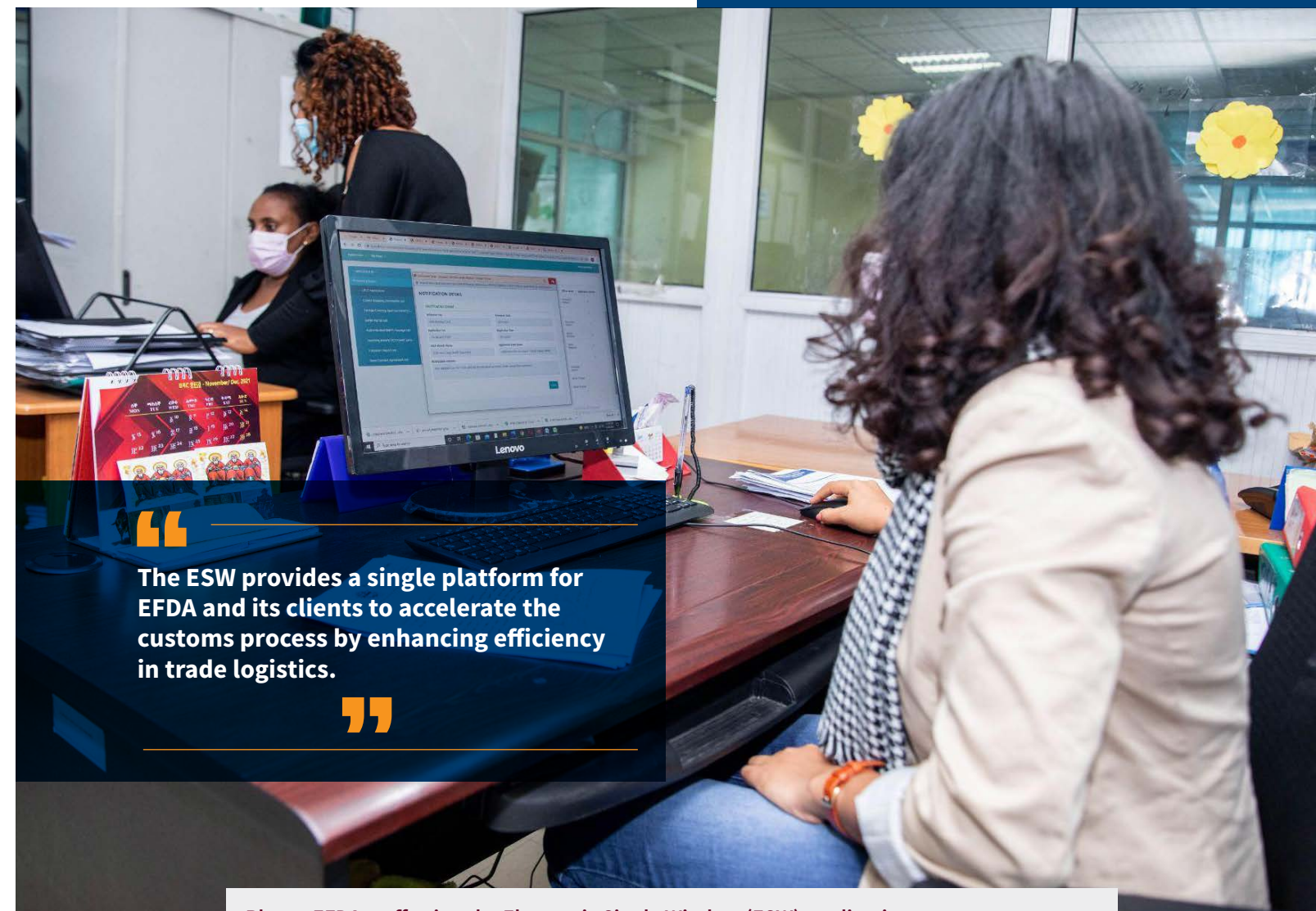
Figure 5. System overview of the national regulatory and traceability information system

Electronic single window (ESW)

DHA supported the development of the ESW application in line with the government's direction for traders and importers to use a single window service. The ESW provides a single platform for EFDA and its clients to accelerate the customs process by enhancing efficiency in trade logistics. DHA supported the integration of the eRIS and ESW, which greatly simplified import and export activities. Since the eRIS-ESW integration, 343 importers have processed close to 1,700 import permits.



343
importers have processed close to
1,700
import permits.



The ESW provides a single platform for EFDA and its clients to accelerate the customs process by enhancing efficiency in trade logistics.

Photo: EFDA staff using the Electronic Single Window (ESW) application process requests

i-Clearance

After EFDA approves a product and it is imported, it conducts physical product assessment and inspection before releasing the product to the market. The release of the product is handled by i-Clearance, which allows EFDA to track and verify it before it arrives in the country. This reduces the time that would have been taken to verify the product after arrival in the country. DHA trained 130 individuals including 30 port inspectors on the use of the application and made i-Clearance ready for deployment and completed the first phase integration with ESW.



130

individual trained on i-Clearance.

i-Verify

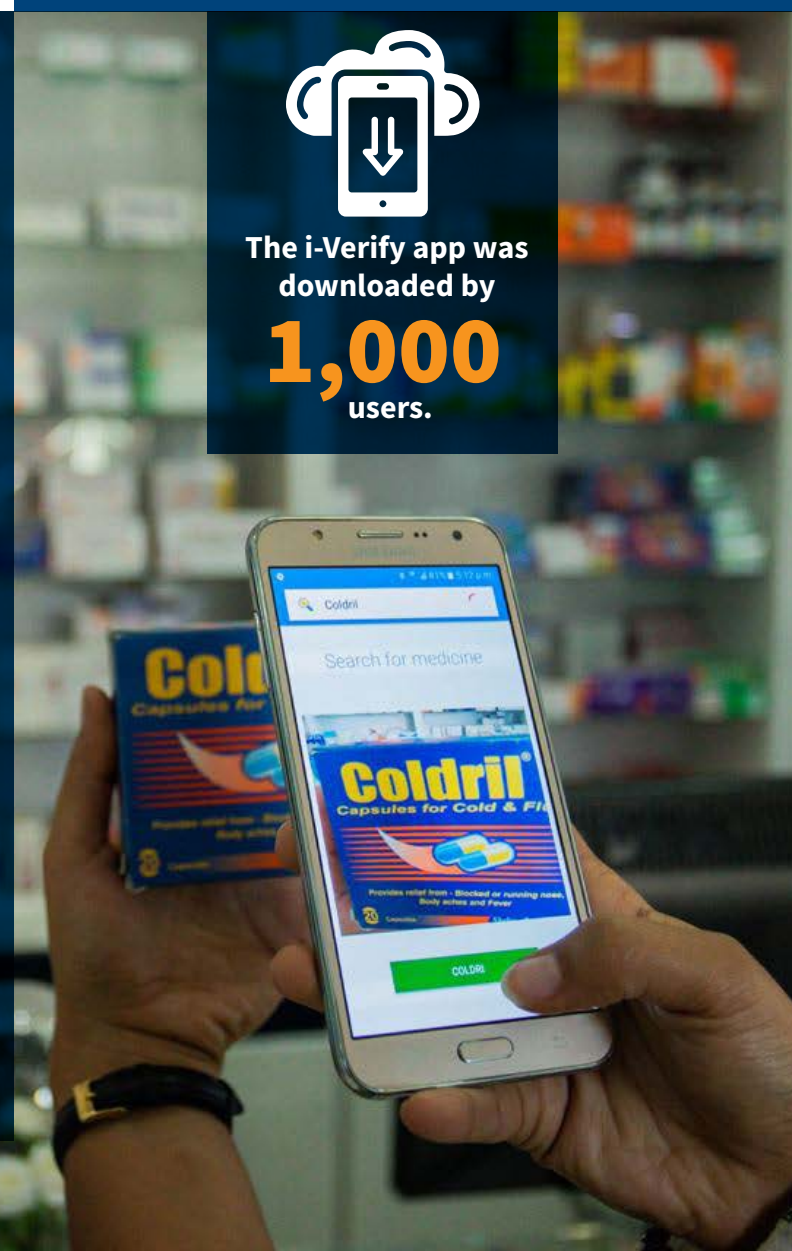
Supply chain actors use the i-Verify application to verify the authenticity of medical products at any point in the supply chain. It is used to report unauthorized, defected, and counterfeit products in the market. During the year, DHA supported the optimization of the i-Verify application to detect counterfeit products including fake COVID-19 vaccine. The i-Verify app was downloaded by 1,000 users from Google Play Store. Similarly, the development of an inspection module for pre- and post-licensing inspection is complete and the module is being tested.



The i-Verify app was
downloaded by
1,000
users.



EFDA is close to becoming paperless. Director General of EFDA Mrs. Heran Gerba said that the eRIS applications are improving the organization's transparency, accountability, performance management, virtual work environment, and efficiency.



Digital health maturity assessment



In addition to the development and deployment of digital health tools, it is important to demonstrate their improved ability to meet current and future needs. This cannot be done without measurement. During the reporting year, DHA, in collaboration with Mekelle University, supported MOH to conduct a baseline maturity assessment of the HIS using the Stages of Continuous Improvement (SOCI) tool,

which has 5 major domains, 13 components, and 39 subcomponents. The results of the assessment illustrated gaps between the current and desired HIS maturity levels. They also yielded low and varying scores across the five SOCI domains (Figure 6). Based on the results, the MOH set targets to improve the HIS maturity level by 2024 (Figure 7).



During the reporting year, DHA, in collaboration with Mekelle University, supported MOH to conduct a baseline maturity assessment of the HIS using the Stages of Continuous Improvement (SOCI) tool

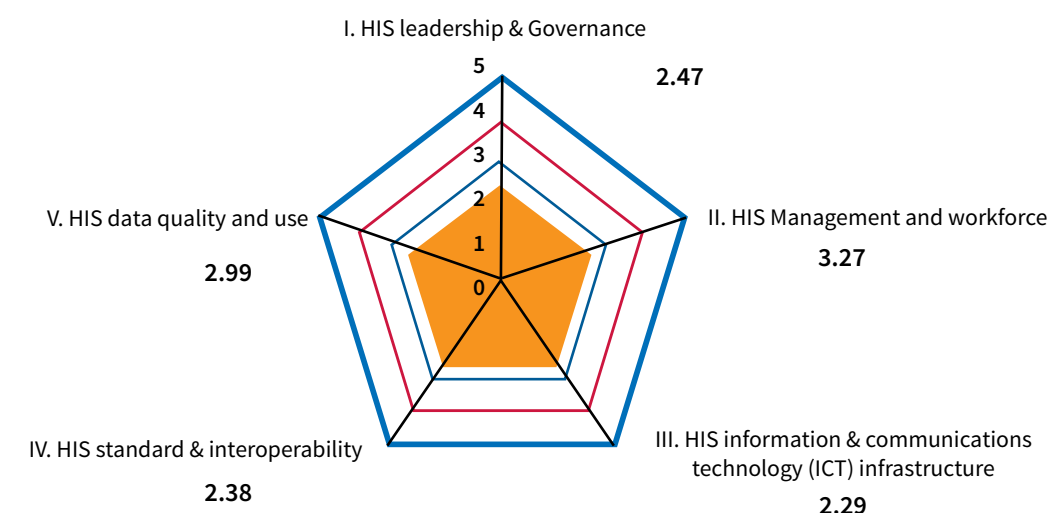


Figure 6. HIS Maturity Assessment Scores across the 5 SOCI Domains

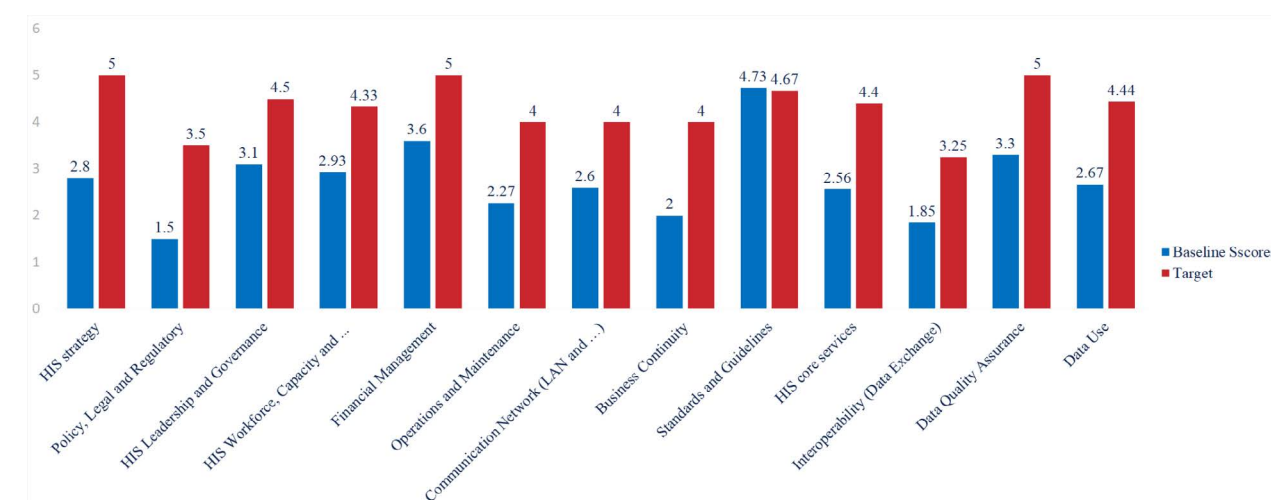
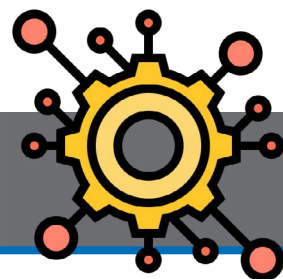


Figure 7. HIS Maturity Assessment Results and 2024 Targets for the 13 SOCI Components

Interoperability



DHA has been working to ensure automated data sharing among digital tools to improve access to comprehensive patient data and improve service quality. Through integration of systems, digital tools can be made interoperable. DHA completed point-to-point integration between the EMR and eAPTS systems and deployed it at TBGH.

“**To build the capacity of future leaders in interoperability, DHA, in collaboration with Mekelle University, organized and conducted a Hackathon for 11 recent graduates and final-year students.**”

Master Facility Registry (MFR)

The MFR is a shared service platform for all subsystems in the Ethiopia Electronic Health Architecture (eHA). The eHA supports the acquisition, exchange, and use of health data with shared services such as the MFR. The MFR provides location and service inventory data of health facilities in the country.

“**During the reporting year, DHA completed the development of the second version of the MFR, which is compliant with global interoperability standards and resolves problems related to system performance and usability.**”

To create government ownership, the Activity provided training to eight staff at the Health Information Technology Directorate (HITD) of the MOH. In addition, system administrator training was given to 13 MOH staff to ensure the availability of support during implementation. DHA supported the cleaning and reconciliation of data from over 18,000 public health facilities.



Data cleaning and reconciliation done for
18,000
public health facilities.

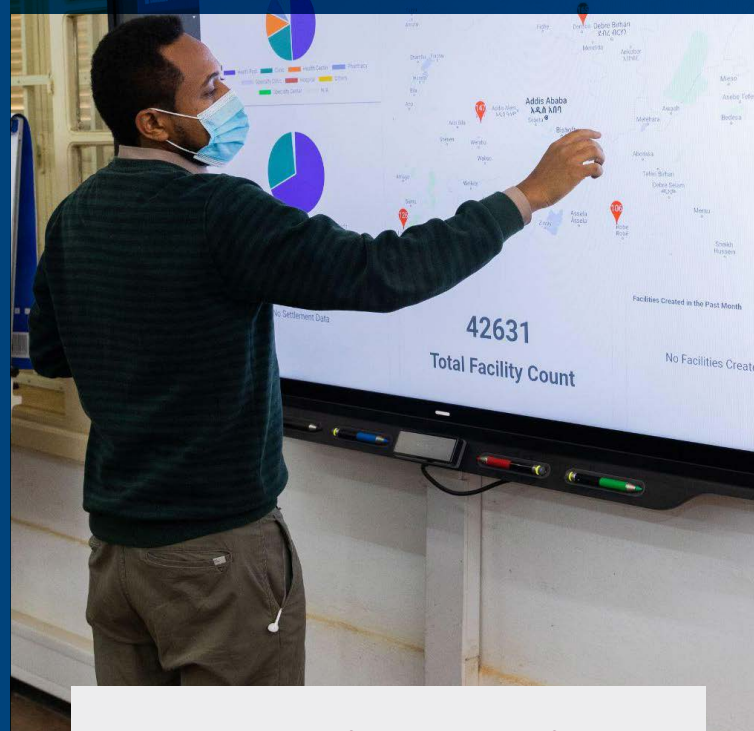


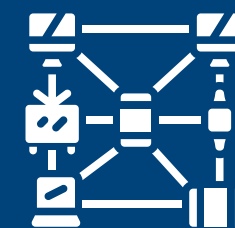
Photo: DHA staff using the MFR platform

Improving connectivity and infrastructure at health facilities



Availability of critical infrastructure and internet connectivity is important for the effective functioning of digital tools.

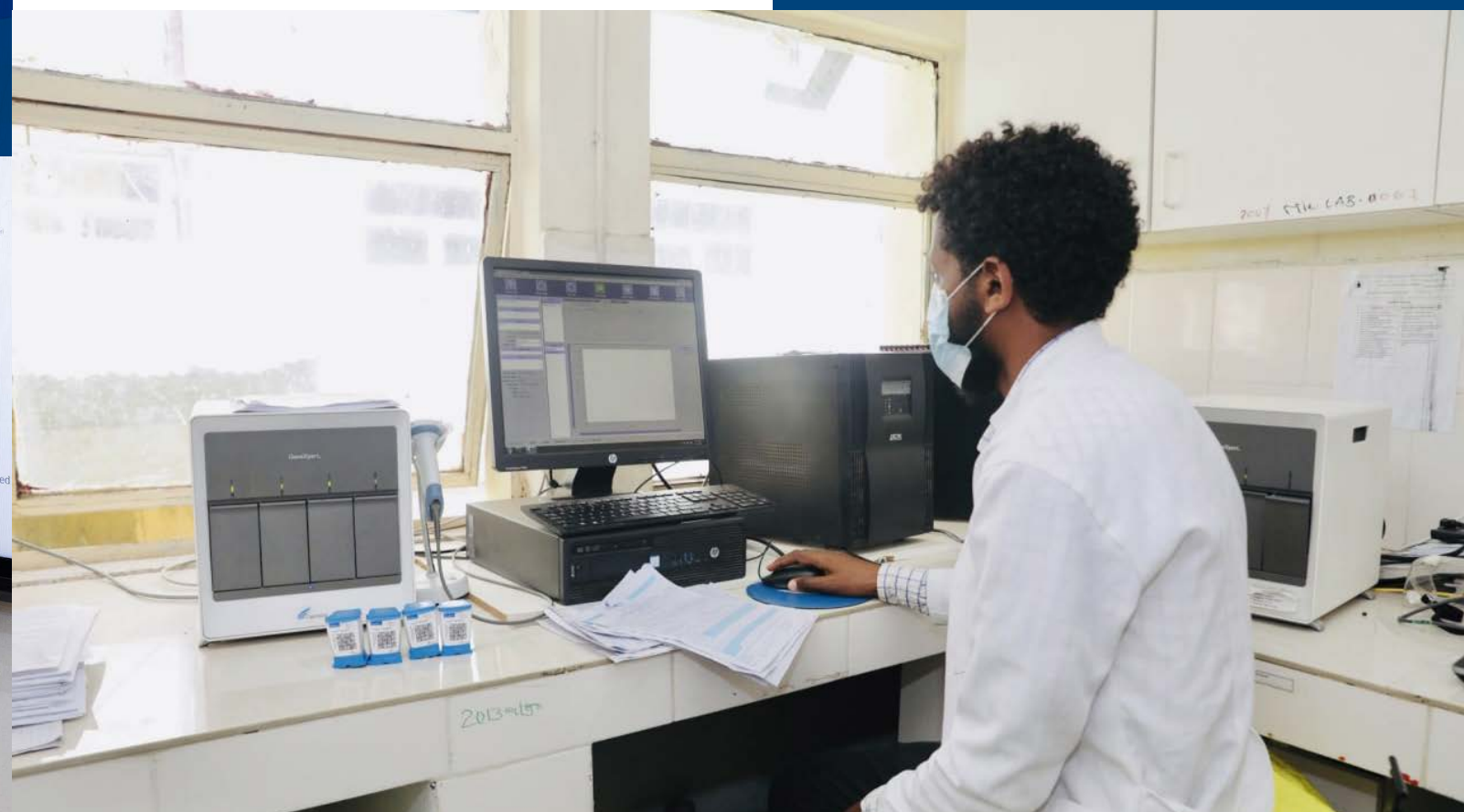
DHA has been supporting the expansion and scale up of the HealthNet infrastructure to improve connectivity within and between health facilities. HealthNet provides a virtual network for health facilities to report HMIS data. The expansion within health facilities enabled 38 GeneXpert devices, used for diagnosis of TB, to connect to HealthNet. GxAlert, a dashboard at Ethiopian Public Health Institute (EPHI), enables virtual and remote monitoring of GeneXpert device functionality and facility TB program management. This is believed to hugely assist in the management of the TB program at the national level. Similarly, the HealthNet expansion within facility stores improved stock management by enabling electronic reporting and requisition of stocks using the Dagu software. A remote tool was used to monitor HealthNet functionality.



38

GeneXpert devices
connected to HealthNet.

“**DHA has been supporting the expansion and scale up of the HealthNet infrastructure to improve connectivity within and between health facilities.**”



Promoting use of data for decision making.

Data are generated at every transaction point within the health system. When captured accurately and analyzed timely, data improve service quality and health outcomes. However, data use has been compromised by poor quality. DHA has promoted a culture of data use at the facility and higher health administrative levels by supporting:

Strategic planning and performance measurement



DHA supported the development and finalization of the HSTP II, MOH's five-year strategic plan. DHA helped articulate the health information and digital health sections, organized the final plan revision workshop, and assisted in copy editing, translation, and graphic design.

The HSTP II introduced programs and changes in national priorities. This called for revisions to HMIS indicators including recording and reporting tools, which DHA provided technical and logistic support. DHA also provided logistic support in the distribution of recording and reporting tools in Oromia and Southern Nations, Nationalities, and Peoples Regions.

“DHA helped articulate the health information and digital health sections, organized the final plan revision workshop, and assisted in copy editing, translation, and graphic design of the HSTP II document.”



Data quality improvement

Improving data quality is a key step to promoting data use. DHA supported RHBs and zonal health departments to conduct periodic desk reviews to improve the quality of HMIS reports. In addition, the Activity developed and shared HMIS analytics dashboards with MOH every quarter. The dashboard triangulated data from additional sources, such as COVID-19 surveillance and health commodity supply chain systems. DHA, by organizing a workshop with 25 surveillance data experts, developed a surveillance data quality assurance guideline for EPHI.

“DHA, by organizing a workshop with 25 surveillance data experts, developed a surveillance data quality assurance guideline for EPHI.”

DHA supported woredas to conduct quarterly routine data quality assessments (RDQAs). Three rounds of RDQAs were conducted among health facilities during the year. In the first, 47 woredas conducted the RDQAs at three hospitals and 171 health centers. In the second, 57 woredas conducted RDQAs in 209 health centers and three hospitals. In third, 311 health facilities were assessed. Across the three RDQA rounds, five common HMIS indicators—skilled birth attendance; pentavalent 3 coverage under one-year of age; percentage of people living with HIV who know their status; TB case detection, all forms; and malaria positivity rate—were assessed in all relevant regions. The verification factors (VFs), the percentage of recounted values against reported values, were calculated. A VF value between 90 and 110 percent is considered an acceptable data quality level. A value over 110 percent is considered under-reporting, and below 90 percent over-reporting. Addis Ababa, Amhara, Beneshangul Gumuz, Sidama, and Southern Nations, Nationalities, and Peoples Regions had acceptable data quality levels in all the RDQAs. The aggregate national level RDQA result for the selected indicators was also within acceptable range (Figure 8).



Addis Ababa, Amhara, Beneshangul Gumuz, Sidama, and SNNPR had acceptable data quality levels in 3 successive RDQAs.

“DHA has been making efforts to use other measures, like the average absolute deviation (AAD), in conjunction with the average VF.”

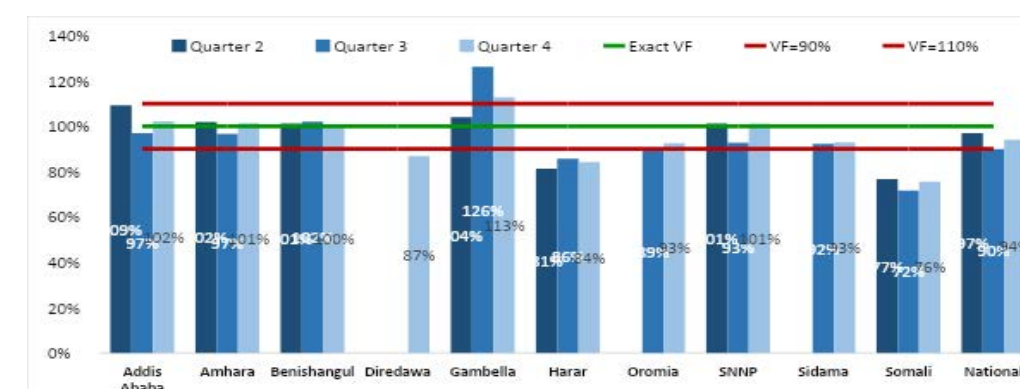


Figure 8. Percentage of Facilities with an Acceptable Average Verification Factor for 5 Selected Indicators during the Third Round Assessment (n=311)

The VF is averaged across the selected indicators, health facilities, and regions. Hence, there is a tendency for over- and under-reported values to cancel out each other when averaged. Therefore, the averaged figure doesn't necessarily reveal the data quality level of an individual indicator or health facility. DHA has been making efforts to use other measures, like the average absolute deviation (AAD), in conjunction with the VF average. The AAD takes the average of the absolute value of the

difference between the calculated VF and 100% (the highest attainable data quality). AAD value below 10 percent shows acceptable data quality level. A progressively dwindling AAD value also shows a growing similarity in data quality levels among health institutions and improving data quality level. The AAD value for the three round assessments was 22, 26, and 27, respectively, with variations across regions.

Private health facility reporting through the national HMIS



HMIS reporting of private facilities has been generally poor and resulted in underreporting of the country's health coverage, disease burden, and outcomes. In response, DHA trained 84 staff from high-load private health facilities on DHIS2 recording, reporting, and data use. Because of the combined efforts of regional health bureau (RHBs) and DHA, the number of DHIS2 reporting private facilities increased by 21 percent (3,678 to 4,454) during the year. Similarly, reporting rate and reporting timeliness improved from 25.3 to 30.6 percent and, 14.9 to 20.9 percent, respectively. This gives decision makers a timely and more holistic picture of the health system in the country.



84
staff from private facilities
trained on DHIS2



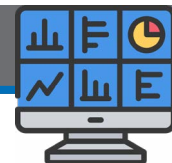
Private facilities reporting
through DHIS2 increased by
21
percent



Private health facilities
reporting rate increased from
25.5 to 30.6
percent

Private facilities report
timeliness increased from
14.9 to 20.9
percent

Developing and sharing analytics dashboards



DHA has been trying to maximize data use opportunities by supporting review meetings, building the capacity of individuals and health institutions, and providing analytic outputs. Accordingly, the Activity provided technical and logistic support for MOH's annual review meeting. Similar support was provided to regions and woredas to conduct review meetings. These meetings helped monitor progress and make course corrections during the year.

DHA also helped EPSA revise and automate its key performance indicators. Each week, DHA shared selected indicators on the Fanos dashboard with MOH and USAID. The dashboards helped monitor the availability of products in EPSA hubs

and warehouses. By promoting use of the Fanos dashboard, the average monthly active users reached 147, a 63 percent change from last year. In addition, DHA continued to regularly review indicators and develop dashboards on data from the eRIS application to support EFDA's use of evidence for decision-making.



Each week, DHA shared selected indicators on the Fanos dashboard with MOH and USAID.



DHA also trained close to 2,000 performance monitoring team (PMT) members, drawn from 300 woredas across regions, on information use and data quality. The training enhanced participants' skills in using DHIS2 and applying key data quality procedures, and advanced their understanding of the role of the PMT. In addition, DHA delivered advanced data analytics training to Somali and Sidama RHB staff.

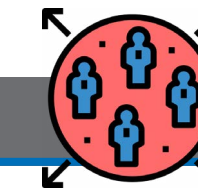


Average monthly Fanos dashboard users reached **147, a 67 percent** change from last year.



2000 PMT members from **300** woredas trained on information use and data quality

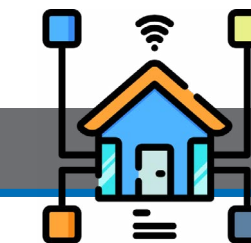
Site-level capacity-building support



DHA provided technical and logistics support for supportive supervisions. The Activity automated the checklist, which improved the quality of supervision and documentation. Supervision findings were used to provide oral and written feedback and to plan site

specific gap-filling interventions. The supportive supervision helped monitor the functionality and use of specific digital tools and close data quality and use gaps and provide onsite capacity building support.

Supporting the Connected Woreda Program



This program measures health institution capacity to generate and share high-quality data through the use of electronic HIS in four incremental pathways: emerging, candidate, model, and connected. A connected health institution, the ultimate goal of the Connected Woreda Program, is capable of accessing and digitally sharing data online.

DHA assessed health institutions to establish a baseline and, in collaboration with RHBs, used the results to design and implement tailored interventions in 89 woredas and 263 health facilities across regions. Interventions included building the data management capacity of individuals and health institutions; implementation support of digital tools; RDQAs; mentorship; supportive supervision; and gap-filling material support.

The interventions targeted improvements in the three components of the connected woreda strategy: HIS capacity and infrastructure, data quality, and information use.

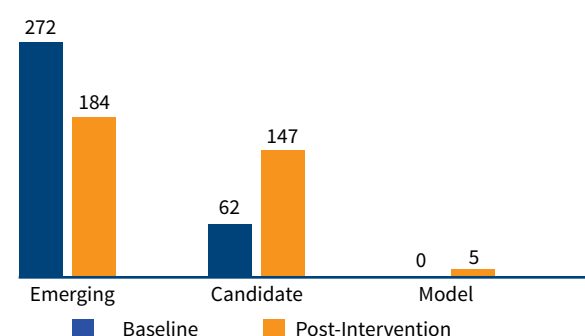


DHA assessed health institutions to establish a baseline and, in collaboration with RHBs, used the results to design and implement tailored interventions in 89 woredas and 263 health facilities across regions.



To measure success of these interventions, the Activity conducted a 9-month post-intervention assessment. Eleven woredas were not measured due to security reasons. The result of the assessment showed that of the 334 health facilities included in the baseline survey, 81 percent (272) were emerging and the remaining were candidate facilities. There was no model or connected facility at baseline. At post- intervention, the number of emerging facilities decreased by 67 percent and the number of candidate facilities more than doubled. Five facilities became model (Figure 9).

Figure 9. IR Woreda and Health Center Grading at Baseline and 9 Months Post-intervention



This represents a significant forward shift in the number of DHA supported facilities toward the goal of the connected woreda program.

Supporting hospitals to become IR models

Like the Connected Woreda Program interventions, DHA has supported 23 hospitals. Fourteen hospitals were included at baseline and 9 months post-intervention. At baseline, 10 facilities were emerging and 4 facilities were candidate. At 9 months post-intervention, 6 of the 10 emerging hospital at baseline became candidates. Despite positive changes in assessment score, the four candidate facilities at baseline did not shift forward from one category to the next. Overall, there was a 45 percent average improvement in the assessment score between baseline and 9-months post, with significant variation between hospitals in the different regions.



At post- intervention, the number of emerging facilities decreased by 67 percent and the number of candidate facilities more than doubled. Five facilities became model



6 out of 10
hospitals became candidate.

A 45 percent average
improvement in assessment score of
hospitals between baseline & nine month
post intervention.

Publishing and sharing analytics dashboards

DHA created several new dashboards and shared them with stakeholders to promote use of data for decision making. The dashboards summarized data from the HMIS, LMIS, and COVID-19 response. To support Ethiopia's COVID-19 response, DHA made the dashboards more insightful by triangulating data from multiple sources. The dashboards were shared through email, Telegram, and WhatsApp groups, and during monthly meetings with USAID implementing partners and health office staff (Figure 10).

To support Ethiopia's COVID-19 response, DHA made the dashboards more insightful by triangulating data from multiple sources.

National COVID-19 Positivity rate, Ethiopia, March 15, 2020 to September 5, 2021

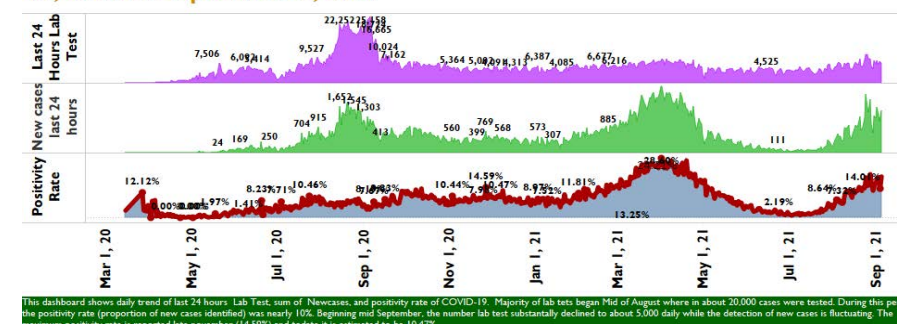


Figure 10. Sample Dashboard: Trends in National COVID-19 Positivity Rates (March 1, 2020–September 5, 2021)

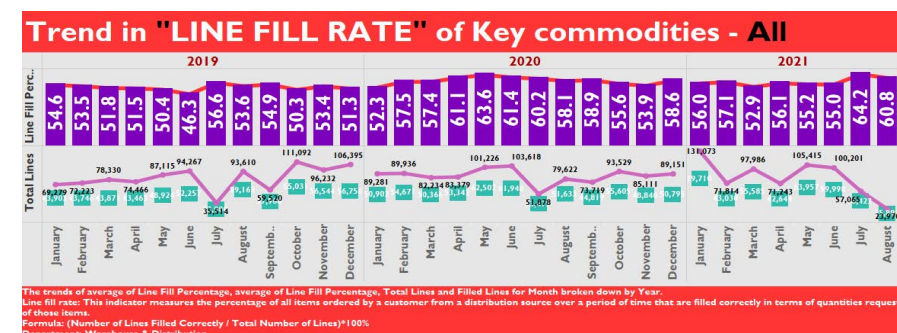


Figure 11. Sample Dashboard: Trends in Line Fill Rates (January 2019–August 2021)

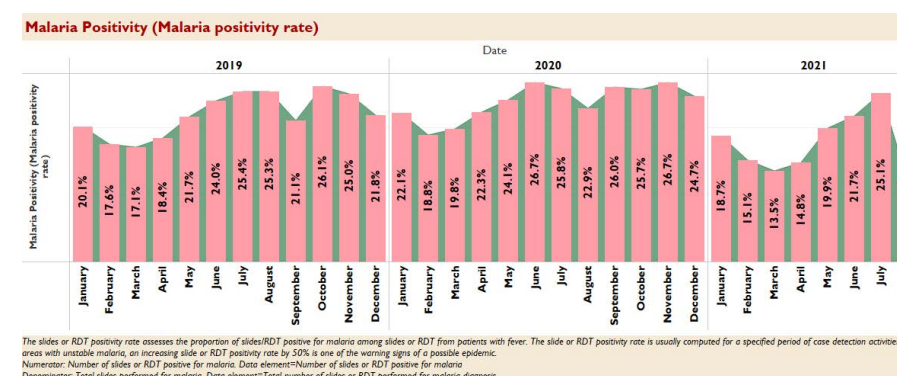


Figure 12. Sample Dashboard: Trends in Malaria Positivity Rates (January 2019–August 2021)

Creating Enabling Environment to Implement and Sustain Digital Health Interventions

The World Health Organization's Global Strategy on Digital Health (2020–2025) in its second objective indicates developing countries' need to develop strategies to help them own, adapt, and strengthen their digital health interventions per their national contexts. Important strategy components suggested include leadership, governance, and legislations.

DHA has been working closely with the MOH, agencies, stakeholders, and HIS implementing partners to develop policies, strategies, manuals, and standard operating procedures (SOPs) to support the implementation and sustainability of digital health interventions in Ethiopia. In this reporting year, the Activity supported the development of the following documents:

Digital Health Blueprint (DHBp)

The DHBp was created to guide the MOH, RHBs, agencies, funders, implementing partners, the private sector, and academia in the implementation of digital health in the coming 10 years in Ethiopia. It is designed to bring quality, affordability, equity, and technology enabled health service delivery by 2030.

During the DHBp launch ceremony, Minister of Health Dr. Lia Tadesse said,

The blueprint provides guidance for the implementation of priority digital health technologies in an evolutionary and sustainable manner in support of the health system transformation agenda.

The full document is available at https://drive.google.com/drive/folders/1CmpE1wuKOHmbfgPmml_sl1C80u60fFpv



National Standard for the Electronic Health Record (EHR) System

The implementation of EMR applications in Ethiopia has been nascent, fragmented, and siloed. Over the past few years, the MOH has explored EMR platforms developed and implemented by private, public, and other health service delivery institutions in the country. Most EMR systems automate only some aspects of health services and cannot exchange patient data with other e-health systems. Neither do they meet the growing need for individual-level data for long-term patient follow-up. Data collected in such systems lacked uniformity as there is typically no requirement at the national level to enforce EMR system compliance. The national EHR standard was developed and endorsed in response to these gaps, and DHA supported the process. The standard defines the core functions and modules as well as the minimum dataset of an EHR system that includes key modules like interoperability, security, ownership, and system implementation requirements. The EHR standard supports all service delivery outlets to produce the desired outcomes.

The full document is available at https://drive.google.com/drive/folders/1CmpE1wuKOHmbfgPmml_sl1C80u60fFpv



eCHIS SOP and Implementation Manual

DHA supported MOH in the development of eCHIS SOP and implementation manual. The implementation manual is believed to create a common framework that guides the implementation of eCHIS.

The full document is available at https://drive.google.com/drive/folders/1CmpE1wuKOHmbfgPmml_sl1C80u60fFpv



SOPs for digital health systems

DHA supported the MOH, EPSA, and EFDA to develop SOPs for i-License, i-Register, and Vitas. The i-License SOP describes the procedures for data management and ensuring that all data are collected, verified, and analyzed appropriately. The i-Register SOP enables EFDA authorities and applicants to conduct market authorization requests and approval processes online. Vitas SOP guides the management of upstream and downstream supply

chains including Vitas, Dagu, Fanos, and mBran. It also directs staff in conducting routine operations with the aim of achieving efficiency, quality, and uniformity while reducing miscommunication and lack of compliance with industry standards and regulations.

The full documents are available at:
<https://drive.google.com/file/d/1uruzGglBcRy8iryb5UTsyBb7HPIN6ZxF/view?usp=sharing>
<https://drive.google.com/file/d/1cD6aD4uKrKDBH U3FySevkDKWCYEJ6imd/view?usp=sharing>
https://drive.google.com/file/d/1xVzdAAouL9isBxDAL4VqazbACyB0cC_f/view?usp=sharing



Policies, guidelines, and strategy for MOH's Innovation Lab

The MOH established the Digital Health Innovation and Research Lab at Saint Peter Specialized Hospital to support digital transformation within the health sector in Ethiopia. DHA supported the development of creative strategy, administrative guideline, archiving and documentation policies, available at:

https://drive.google.com/drive/folders/1CmpE1wuKOHmbfgPmml_sl1C80u60fFpv,
https://drive.google.com/file/d/1qz_MA81yDBNau-fd4mpupfCN4OwVdipk/view?usp=sharing
https://drive.google.com/drive/folders/1CmpE1wuKOHmbfgPmml_sl1C80u60fFpv



Building Institutional Capacity to Sustainably Support Digital Health Interventions

DHA has been helping MOH, HSCs, universities, and other institutions increase capacity to improve the quality and sustainability of digital health interventions in Ethiopia.

Building HSC capacity

Regional HSCs train health information technicians to support the implementation of the HMIS by collecting, analyzing, managing, and transmitting health data for decision making. DHA, in collaboration with MOH and the Federal Technical and Vocational Education and Training (FTVET) agency, supported the revision and approval of the health information technician assessment tool and curriculum, which covers DHIS2, Dagu, eCHIS, EMR, and mBranza systems. The HSCs use the revised curriculum to enroll new health information technician students; the assessment tool helps certify health information technicians after completion of training. To build the capacity of the HSCs, DHA trained 24 instructors who helped cascade the training to 309 graduating health information technician students at Arbaminch, Menelik II, Harar, and Hossana HSCs.

By supporting eLearning and blended learning approaches, DHA has been working to improve access and quality of HIS training to last-mile health workers. These approaches broaden training delivery options, minimize cost, and reduce service interruptions at trainees' workplaces. DHA, in partnership with MOH, HSCs, and TVET, completed the development of a blended learning approach for pre- and in-service training.



DHA trained 24 instructors who helped cascade the training to 309 graduating health information technician students at Arbaminch, Menelik II, Harar, and Hossana HSCs.

DHA also completed development and hosted the eLearning for DHIS2, Dagu, and eCHIS, and supported development of the Moodle Learning Management Module to track the deployment, enrollment, and training of the eLearning approach. By April, 2021, 34 instructors had received TOT through the blended learning approach; and by September 2021, 372 learners enrolled in the eLearning approach. In areas where connectivity is a challenge, DHA supported the development of an offline version of the training.



TOT provided to 34 instructors on blended learning approach

372 learners enrolled in the eLearning approach

Building MOH's capacity for eLearning

DHA, in collaboration with other HIS partners, supported the development of a module on HIS core concepts to give health workers the knowledge and skills to implement the national HIS. Following testing, the module will be used for in-and pre-service training. The Activity also supported the development of eCHIS eLearning module. Both the HIS core concept module and the eCHIS module are uploaded on the learning management system and will be tested and released in the coming Activity year.

The Activity also supported nine HSCs to provide eLearning for in-service training of HITs on DHIS2 and Dagu 2. Accordingly, 33 HITs and 85 HITs from Harar and Menilik II HSCs were trained on Dagu 2 and DHIS2, respectively.



In addition, 24 health information technicians in Addis Ababa received in-person HIS training with DHA's support. A range of capacity-building training was also provided to health information technicians working in DHA-supported woredas. This included Dagu 2 TOT and cascade training on eCHIS, DHIS2, integrated data quality, and information use. Besides supporting the eLearning program, DHA supported MOH in reviewing the Dagu 2.0 face-to-face training materials that are being used for TOT and rollout training.

24 health information technicians in Addis Ababa received in-person HIS training with DHA's support.

Supporting universities to become centers of excellence for specific subsystems



DHA has been supporting Jimma University to become an eCHIS center of excellence (COE) with material support to establish a fully functional laboratory for eCHIS development and training. The university selected a learning woreda, Tifrata, and conducted an assessment to establish a baseline. In collaboration with the Jimma University, TOT was provided to 22 instructors. The Activity also provided high-level eCHIS technical training to nine instructors at the university. Following the TOT, 51 HEWs, 5 midwife nurses, 5 HEW focal persons, and 4 health information technicians were trained in the learning woreda; to which the university has provided tablets and power banks and is conducting intensive mentorship in the learning woreda to increase the use of the eCHIS.

DHA provided capacity development support to help Mekelle University become a COE in eHA and interoperability. Before a conflict broke out in the northern part of Ethiopia, the university supported the development of the Ethiopian DHBp; established

an eHA and interoperability academy (OpenHIE Academy) at the university; created electronic courses on architecture, standards, interoperability, and mediators; and supported the MOH to conduct the HIS interoperability maturity assessment to inform development of the eHA roadmap. The Mekelle University team has also facilitated a face-to-face training on interoperability and customized data exchange mediators for 20 MOH developers, implementing partners, and local universities.

In collaboration with the Jimma University, TOT was provided to 22 instructors. DHA also provided high-level eCHIS technical training to nine instructors at the university. Following the TOT, 51 HEWs, 5 midwife nurses, 5 HEW focal persons, and 4 health information technicians were trained.

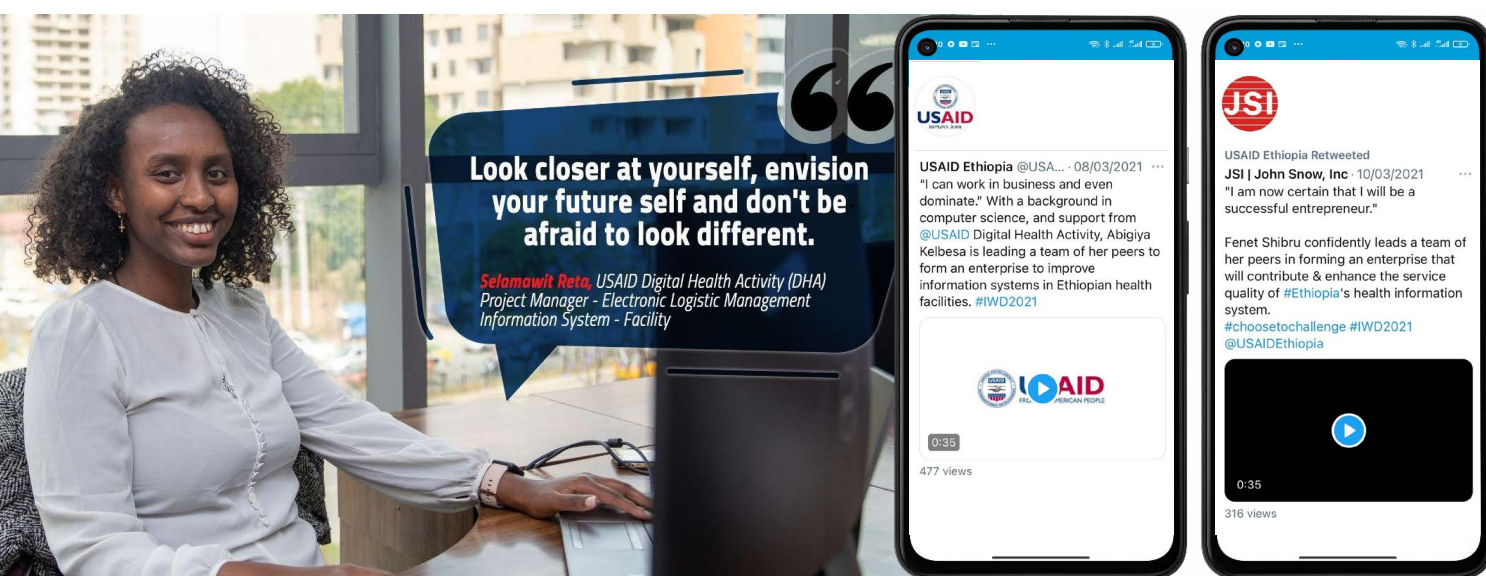
Mainstreaming gender within the HIS

There are disparities between men and women in health service uptake and burden of diseases in many developing countries, including Ethiopia. The HIS should provide data for decision makers to help narrow these disparities. This requires the HIS to go beyond age and sex disaggregation and a few gender-specific indicators to ensuring fair participation of women in the collection, transmission, interpretation, and use of data that affect their health. Within the context of digital health, it is also important to ensure women equal access to use and benefit from digital health interventions. Cognizant of this fact, DHA conducted gender analysis in its first year. Based on the result of the analysis, DHA increased participation of women in leadership positions within its organizational structure and those of the youth enterprises it helped establish. At the end of the reporting period, women held 32 percent of DHA leadership positions, and 62 percent of the youth enterprise leadership positions. This helps ensure inclusion of gender perspectives in the planning, implementation, and decision making processes during the development and use of digital health technologies and HIS

products. In addition, to better understand gender mainstreaming in HIS, DHA, in collaboration with MOH, is conducting an assessment and will use its results to make recommendations that will be used to make improvements.

DHA also participated in a session for the Information and Communications Technologies for Development and a Global Digital Health Forum 2020 panel discussion on gender in digital health in the Ethiopian context. Both sessions included the sharing of valuable insights that the Activity will use in its future gender mainstreaming plans.

Similarly, the Activity leveraged the Women's Month theme of "Choose to Challenge" on March 8 to promote and encourage female participation in the health-tech industry. Activities included a social media campaign highlighting the experiences of DHA's female staff, including youth grantees. Short videos and photos were shared on JSI and USAID social media platforms, with an emphasis on encouraging messages to inspire the next generation of women in the tech industry.



32

percent of the leadership positions within DHA are assumed by women



62

percent of the youth enterprises are women led.

Emergency Response

Significant damage to infrastructure has occurred due to the ongoing conflict in the northern part of Ethiopia. This seriously affected the availability of health data for the management of health programs. DHA has been using interactive voice response (IVR), as a short-term alternative to acquire data to assist in the emergency response in conflict-affected areas. The Activity, with the Tigray RHB, trained 180 staff, and reduced the reporting frequency and

the number of reportable indicators. Despite these remedial actions, national report completeness and timeliness rates are significantly affected. For instance, the national report completeness and timeliness are 87 percent and 67 percent, respectively. These figures jump to 96 percent and 72 percent when facilities from conflict affected areas are excluded from the analysis (Figure 13).

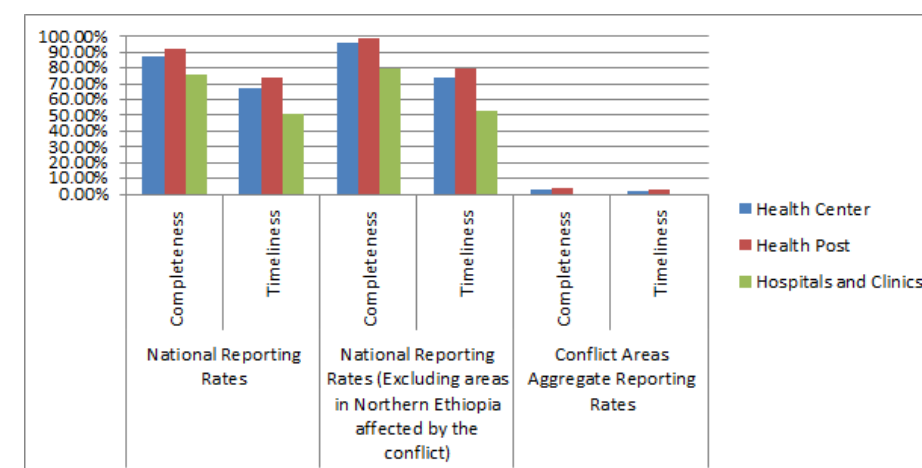


Figure 13. Effect of the Conflict in Northern Ethiopia on HMIS Reporting Rates



DHA supported the development and ongoing maintenance of a suite of digital tools for COVID-19 surveillance and tracking.



These included a port-of-entry health declaration system and application for home-based isolation and care. The health declaration system helps to record personal information including phone numbers, travel history, health symptoms, and geo-location of Ethiopian residents while the application is used to follow up on home-based patients.



To ensure that the COVID-19 vaccination program is equitable and targeted appropriately, a client tracker system has been piloted and is ready for scale-up by DHA.



Success Stories

“
We found the application
very easy to use”

**eCHIS helps health
extension workers to do
their job better.**

At the heart of the Ethiopian Health System, we find HEWs: female, trained, government employed health workers who provide basic health services in their communities. Serving thousands of people in their localities, close to 40,000 HEWs implement 17 packages of the HEP at the health post level and through home visits.

Before, HEWs would capture, track, and report data about their work using a paper-based community health information system (CHIS). As Genet Yosef, HEW at the Jera Dawuma Health Post said, “When a patient comes, we ask for a name and village to locate the family folder. After providing the services, we document it and add an appointment (if any). Oftentimes, locating the correct files would be a great challenge.” Genet went on to explain how the family folders were prone to damage.

The family folder is a card used to record patient or client medical information. To overcome the challenges related to data quality and use, and as part of the HIS digitization effort, DHA introduced the electronic CHIS (eCHIS). Genet and her colleague

Anchinesh Aemro attended two training sessions on eCHIS organized by DHA one before and the other after receiving tablets.

Upon returning to health post, the HEWs started registration of households under their catchment area. Anchinesh said that “The training we received was sufficient, and we found the application very easy to use.” The HEWs completed the registration of all households under their health post using eCHIS. They also started using the eCHIS to provide routine services at the health post. DHA provided continuous supportive supervision, which enabled it to become one of the few model health posts in eCHIS implementation. So far, DHA has supported the deployment of eCHIS in over 2,200 health posts across the country.

The tablet is handy and a source of prestige for HEWs. “We now carry the tablet with us when we do our house-to-house visits, which is much better than carrying the family folders. We are happy using the tablet during service delivery.”

“
We now carry the tablet with us when
we do our house-to-house visits, which
is much better than carrying the family
folders. We are happy using the tablet
during service delivery.”

Improving Delivery Time in the Pharmaceutical Supply Chain: The Effect of the Electronic Report and Requisition Form (RRF)

The availability of medicine is vital to the provision of health care, and the supply chain is the backbone of that availability. It is EPSA’s job to ensure that the supply chain is well-functioning. A major component of this is proper inventory management.

To streamline processes within the pharmaceutical supply chain system, DHA introduced an electronic Report and Requisition Form (RRF). The electronic RRF is an online system used by health facilities to report consumption of drugs and other medical supplies and to request resupply from EPSA. The online RRF is integrated into Dagu 2.0, which DHA has implemented in 568 health facilities across the country and plans to implement in all health facilities by the end of the Activity period.

The RRF is used to order essential items for everyday use by health facilities, so faster delivery of the RRF means faster and more accurate delivery of these medicines.

Previously, health facility staff had to hand-deliver RRFs over long distances to EPSA hubs. This delayed receipt of much-needed medicines and compromised health care workers’ ability to provide timely and good-quality care. Oliyad Habte, store manager at Meda Welabu University Goba Referral Hospital, said, “Before the electronic RRF, we had to share the form as a screenshot or have it physically delivered. This created major delays, which crippled us from delivering proper care services.”

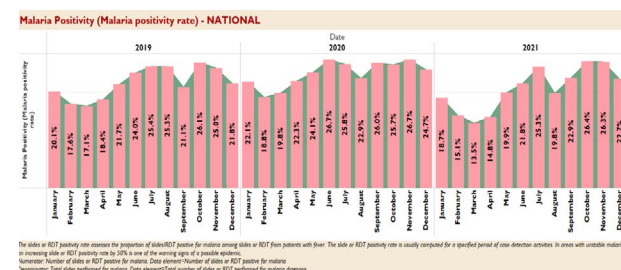
Now, the electronic RRF has enabled health facilities to process their orders remotely through a website, reducing delivery time from an average of 5–7 days to just a few hours. “The online RRF has simplified our job by speeding up the reporting time and minimizing data errors. We hope to see the utilization of the system grow,” said Oliyad.

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Health data dashboards: A picture of actionable insights

As Mr. Nuradin Assaid, a planning, monitoring, and evaluation coordinator at the Benishangul Regional Health Bureau put it, “When data is made available in the form of visuals, it helps us make informed decisions.”

To encourage better data use practices at all levels of the health system, DHA has produced a variety of health data dashboards. The dashboards, which contain data-driven, interactive visualizations from the routine health information system and periodic surveys, provide essential information for decision makers across the health sector on issues such as COVID-19, the Connected Woreda Program, Data Quality Assessment, Malaria, and TB. among others.,

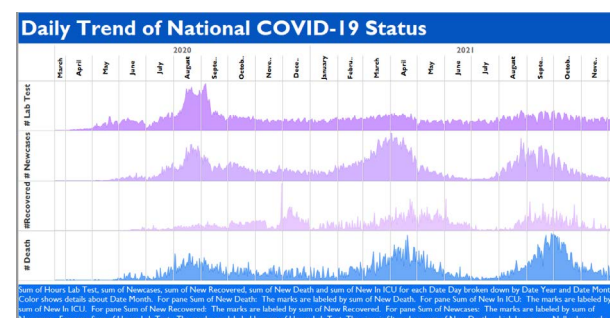


The dashboards were initially produced using Tableau, the interactive data visualization software. According to Nuradin, “The Tableau software is simple to navigate and offers visualizations that can be used to identify patterns and make analysis.” All of the dashboards are available online and are updated weekly to semi-annually, depending on the data source.

“In the right hands, medical data is priceless.”¹

¹ Eclinical Works. (2020, March 8). Interoperability: Putting Data in the Right Hands. EclinicalWorks. <https://blog.eclinicalworks.com/interoperability-putting-data-in-the-right-hands>.

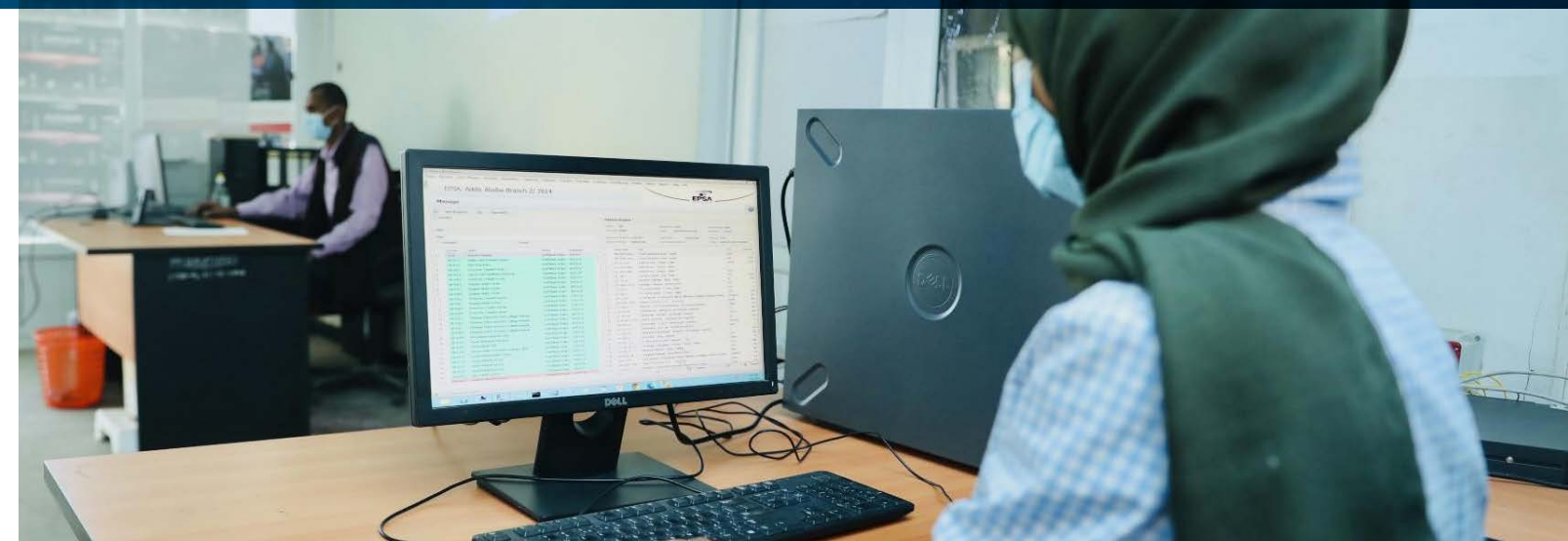
“In the right hands, medical data is priceless.” DHA sent an introductory email to inform selected stakeholders and decision makers about the dashboards and gave them access to Tableau.



The data are shared weekly through the WhatsApp and Telegram apps with a broader audience, including RHBs heads and MOH officials, who can share the messages with their colleagues.

Since the launch of the dashboards in May 2021, Telegram channel subscribers has reached 289, with an average of 240 views per message. Nuradin said that “As soon as the data is updated, I download it and do my own analysis. After that, I share it with other regional Telegram groups, including the national HIS Telegram group.”

“Since the launch of the dashboards in May 2021, Telegram channel subscribers has reached 289, with an average of 240 views per message.”



Ordering supply requests online: saving staff time and supporting COVID-19 prevention

EPSA is responsible for 80 percent of the health commodities distributed in the country, with nearly 16,000 service delivery points (hospitals, health centers, and health posts). Requesting health commodity resupply has been one of the most challenging and time-consuming EPSA processes, especially when compared with other distribution activities. The sluggish process of resupply created a bottleneck in the health commodity supply chain, wasting customers’ time and increasing workload for EPSA officers, which resulted in a slow requisition process and erroneous data entry.

Zenebech Mole, a requisition officer at EPSA’s Addis Ababa hub, said it took her an average of one hour to fill and submit a single order. Furthermore, she feared contracting COVID-19 due to close and repeated contact with customers (e.g., staff from private hospitals, clinics, pharmacies, and drug stores). On the other side, facilities would complain about EPSA’s slow and complicated requisition process.

To overcome this problem and increase EPSA efficiency, DHA supported the development of an online ordering system. The system has been rolled out to private facilities that place EPSA orders. Placing orders remotely through a web application eliminates the time spent filling out order forms and

saves EPSA staff time. It also substantially reduces customer waiting time and protects individuals from COVID-19 by eliminating unnecessary human interactions.

DHA has trained staff in 102 private facilities and 184 public facilities, as well as 31 EPSA employees—including Zenebech—to use the online ordering system. As of September 30, 2021, 283 private health facilities had used the online system to submit orders to EPSA and 1,981 requests had been processed.

Zenebech and other EPSA requisition officers say they now have sufficient time to check and process orders from health facilities. As Atsedemariam Aschenaki, a frequent customer, said, “I come here every two weeks and before I would have to dedicate a full day to finalize my request. With the introduction of this online ordering system, I fill out the forms and I won’t have to spend more than 30 minutes here.”

“DHA has trained staff in 102 private facilities and 184 public facilities, as well as 31 EPSA employees—including Zenebech—to use the online ordering system.”

DIGITAL HEALTH ACTIVITY (DHA) YEAR II

ANNUAL REPORT



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photo caption: Health extension workers at the Jera Dawuma health post, SNNP Region, providing service to patients using the eCHS.