



USAID
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DIGITAL HEALTH ACTIVITY

ANNUAL REPORT

YEAR IV

OCTOBER 1, 2022–SEPTEMBER 30, 2023





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Message from the Chief of Party



Dr. Loko Abraham, outgoing Chief of Party, and Naod Wendrad, incoming Chief of Party of the Digital Health Activity

Ethiopia has prioritized bringing its health sector into a modern age of digitization, independence, transparency, and efficiency, and we have been honored by another year devoted to advancing that work.

In 2023, the USAID-funded Digital Health Activity (DHA) has enhanced implementation of numerous digital health systems to improve health outcomes for Ethiopians. This includes electronic medical records (EMRs), the health care supply network (through the electronic logistics management information system, eLMIS), the digital tools that community health workers have to support their clients (through the Electronic Community Health Information System, eCHIS), among others, to strengthen the country's health care system. These mechanisms have catalyzed systemic change, while ensuring inclusivity for diverse populations. In 2023, DHA provided more direct technical assistance and problem-solving support to prioritized interventions and worked closely with health facilities and Ethiopia's Ministry of Health (MOH) to create ownership and sustainability. DHA supported MOH's national strategy for mainstreaming gender within digital health and health information systems (HIS). Recovery of the HIS in health institutions affected by conflict in the northern part of Ethiopia was a major focus.

In the coming year, DHA will continue to document and disseminate successes and best practices in our system implementation.

Over the last year, DHA has enhanced its initial activities related to digitization by bolstering the capacity of health facilities and government organizations to support digitization activities. We made a concerted effort to encourage and facilitate ownership of new and existing digital products to ensure sustainability of these investments. DHA achievements rely heavily on the leadership of the government of Ethiopia and Activity's strong relationship and contributions of our implementing partners and generous support and guidance of USAID. We work closely with the MOH, Regional Health Bureaus (RHBs), Ethiopian Food and Drug Administration (EFDA), Ethiopian Pharmaceutical Supplies Services (EPSS), and the Ethiopian Public Health Institute (EPHI).

For these partners in our mission, we are grateful and look forward to continued, evolving, and trusted collaboration. Our shared commitment gives us confidence that our remaining year will be as fruitful as the first four years.

Addis Ababa, January 2024



DHA Interventions, Footprint and Team

Since October 2019, DHA and Ethiopia's MOH have jointly implemented various interventions at national, regional, and health facility levels to reach an *Information Revolution* in the country. In making gains toward digitizing the entire health system, DHA has provided guidance on digital architecture, governance, and interoperability; tools to strengthen automations in the health sector; capacity strengthening at multiple levels of the health system; stronger data use to better inform and support health services; and emergency response.

Our Approach

Digitalization



DHA is working nationally to create digitized and integrated HIS, enabling health care providers to deliver standardized and data-driven services. We support the design, development and deployment of close to 20 digital health products in support of Ethiopia's electronic health architecture.

Data Use



DHA supports cultivation of evidence-based decision making through building the capacity of health service providers, health managers, and policymakers during planning, service provision, monitoring, resource allocation, and policy making. In addition, The Activity builds the capacity of health institutions to use digital health technology to enhance their data collection, analytic and visualization capabilities to ensure the use of quality assured data for decision making.

Governance and Capacity Strengthening



DHA supports the health system in establishing and operationalizing proper HIS governance through development of policies, guidelines, and standard operating procedures. We support expanded use of digital health tools and enhanced data use culture by embedding our interventions within curriculums in higher learning institutions and supporting them to become centers of excellence.

Emergency Response



DHA supports conflict-affected areas to restore and rehabilitate their health information system damaged during conflicts. The restoration work included designing and deploying an interim solution for electronic emergency reporting, human capacity building, reconstructing record rooms, installing infrastructure and supplying hardware.

Highlights of 2023

Our commitment centered on empowering health care facilities and health organizations to seamlessly digitize their day-to-day operations and enhance HIS. DHA's 2023 project year marked a pivotal step toward advancing health institutions along the information revolution pathway, creating over 150 model health institutions and modernizing and streamlining the health care infrastructure, fostering efficiency, and ensuring use of digital health technology contributes to quality health service delivery and improved health outcomes.

Strengthening Community Health through Digitization: the Electronic Community Health Information System

The Electronic Community Health Information System (eCHIS) is a community-based digital health tool, used primarily by health extension workers (HEWs), frontline community health workers, enabling immediate access to counseling guides, reporting requirements, and on-site patient data. eCHIS is a tablet-based system containing the health extension program packages in several modules. It allows digital data capturing and reporting of community health work, enabling greater efficiency and support for primary health care workers in Ethiopia. eCHIS provides HEWs with the ability to recall patient history, giving this primary healthcare workforce longitudinal client health data at their fingertips.

By the end of 2023, eCHIS was deployed to nearly 3,000 health posts through DHA. Of these health posts, 25 have become paperless, with another 20 in Banja woreda soon to follow, creating a model for other woredas to follow saving time and money. In the past year, one significant achievement was the successful launch of the eCHIS in new areas.



eCHIS is now being used in over **7,800** health posts, **35%** of which are supported through DHA.



Of our supported health posts, **25** are now paperless.



DHA created platforms to track integrated refresher training to ensure greater support to health workers using eCHIS.



We successfully piloted tracking the distribution of long-lasting insecticide treated nets (LLINs) in more than **9,000** households in Anchar woreda using eCHIS.

In Practice: Anchar Woreda Now Paperless

Daro Health Post in Anchar woreda, Oromia Region, has embraced a paperless approach in its health services. USAID's DHA played a crucial role in this transition by providing training, mentorship, and ongoing support in implementing eCHIS. Daro Health Post's success has positioned it as a model in Ethiopia's "information revolution," building greater transparency, agility, and effectiveness into the national health system. HEWs initially faced challenges using manual data collection practices. The manual process was burdensome, leading to fatigue and data quality issues.

Mulu Terefe, a HEW at Daro, remembers the challenge of collecting data manually.

"I had to carry folders, cards, and tally sheets during home visits and outreach services, which was a lot of work and time-consuming," Terefe says. "eCHIS makes my life easier. It is easy to access data for reporting and easier for me to recall how we treated patients in the past and how I should counsel and manage their conditions moving forward."

Hailu Ketema, the woreda health office head, emphasized the importance of dedication and collaboration for sustaining these improvements. "The initiative requires continuous technical and financial support to sustain current gains," Ketema says. "Strong collaboration is needed, ongoing, with the public and other stakeholders."

Daro Health Post's success has positioned it as a model in Ethiopia's "information revolution,"

The Electronic Medical Record System: Digitizing Health Facility Service Delivery

The EMR is a digital tool that improves health care quality and patient outcomes. It enables health facilities to track all patient data digitally. This capability has reduced paperwork and created greater efficiency in health site management and reduced patient waiting time for health care services. DHA backs the integration of EMR with additional services like pharmacy supply and the District Health Information Software 2 (DHIS2) to facilitate seamless data exchange between multiple systems. DHA also supported the transition to paper-free service delivery in EMR sites, aligning with the national initiative for streamlined systems.

DHA has been working with the MOH in implementing the EMR system to address its barriers to system effectiveness identified in the *Bottleneck Focused Reform* agenda. The EMR offers immediate access to health record data and enables easy triage, longitudinal care and more effective, patient-centered health service delivery. DHA has successfully implemented the EMR system at 11 health facilities, with 5 of them became paperless. The MOH, universities, and other health facilities have adopted the implementation, resulting in the scaling up of the system at an additional 23 locations. Currently, the Bahmni EMR system has been implemented at a total of 34 health facilities. Haramaya University has been chosen and supported to become a center of excellence. To ensure ongoing ownership, mentorship, and sustainability of EMR. Early results from a study conducted by DHA demonstrate a reduction in in-hospital mortality, particularly in postoperative mortality associated with EMR implementation at Tirunesh Beijing Hospital.



A total 34 health facilities have implemented EMR, with direct and indirect support from DHA.

In Practice: The Impact of EMR at Tirunesh Beijing Hospital

“Previously, handling paper records caused long queues and delays in locating patient health history,” says Alemgena Werku, a staff member in the record room of Tirunesh Beijing Hospital. “Since the EMR started, the relief brought by the system helps us retrieve patient records and transfer them to doctors in just a few minutes.”

The hospital experienced a significant improvement in efficiency due to implementing the EMR system. Yesunesh Tekola, a regular visitor, shares her experience. “When they started using computers, their management of patients improved,” Yesunesh stated. “There were no ups and downs in finding our history, no waiting for them to figure out who we were. No repeating our information”

Tirunesh Beijing Hospital, supported by the DHA, went paperless, using the EMR system to manage patient information and laboratory services. The hospital is one of 11 health facilities benefiting from DHA’s support in EMR implementation, marking a step toward more coordinated and efficient patient care.

Medical Director Dr. Samson Gudu acknowledges the positive effect of EMR use. “The system serves as a valuable tool in addressing various challenges,” he says. “Its impact could be significantly heightened through integrating interoperability with other hospitals, fostering seamless referrals, which requires coordinated efforts.”



Greater Agility and Efficiency in the National Supply Chain

DHA uses various systems to heighten end-to-end visibility, efficiency and agility and reduce medical supply wastage and stock out. We have furthered the reach and use of the national electronic logistics management information system (eLMIS). We also foster more localized approaches to enhance inventory flow and interoperability to enable these systems to speak to each other, allowing health facilities to forecast their needs with accuracy and to serve client needs completely, without stock outs or excess costs. These include localized upstream (Vitas and Fanos) and downstream (Dagu and mBrana) supply chain digital innovations.



Dagu

Dagu is an inventory management tool that tracks the receipt and issue of pharmaceutical products at facility level warehouses. The tool provides alerts for product expiry and potential stockouts, which allows for better inventory management, reducing wastage and costs. The system also enables product transfer between other implementing facilities, optimizing stock supply responsiveness.

Dagu is now operational in 1,254 health facilities across the country. DHA has been refining the platform based on user feedback to help facilities improve their implementation and use. The progress in optimizing Daggu has fostered streamlined processes, and improved data management for health facilities, while reducing wastage and enhanced visibility.

Dagu 2.1 usage impact on decreasing wastage rates in selected facilities from Amhara Region

	2013 E.C	2014 E.C	2015 E.C
Debrebirhan Hospital	2.6	2.1	1.3
Debresina Hospital	2.01	1.8	0.99
Armani Health Center	3.45	2.11	1.23
Shewarobit Hospital	4.5	2.8	1.78
Lemi Health Center		1.98	0.88



Dagu by the numbers



Dagu deployed in
1,254 health facilities



>\$500k worth of drug saved from
wastage in Addis Ababa alone



Drug wastage rate reduced
<2% in Addis Ababa



Drug stockout reduced by
>30% in Addis Ababa

In Practice: An Electronic Pharmaceutical Logistics System Expands Transparency, Reduces Cost

The introduction of Dagu, a logistics management tool supported by DHA, has significantly improved pharmaceutical operations at Dechatu Health Center in Ethiopia. This real-time system facilitates communication between pharmacy storage and health providers, enhancing daily transaction efficiency overall.

“Dagu provides a chain to control the entry and exit of pharmaceutical products through the store, allowing us to track the status from delivery to dispatch,” says Michael Desta, pharmaceutical store manager at Dechatu Health Center, who has managed the store at Dechatu for the last two years. “Previously, inventory checks could take pharmacy stock managers 10 days. Our checks now take only two days.”

Wondirad Legese, director at Dechatu Health Center, describes the effect of Dagu, “It helped us reduce process time and identify medicines close to expiry,” he says. “It’s enabled us to make decisions regarding utilization and transfer of medicines to other health facilities. We saw medical product wastage in abundance in previous years, but this system has reduced the wastage rate to less than one percent.”



“Previously, inventory checks could take pharmacy stock managers 10 days. Our checks now take only two days.”

Michael Desta, pharmaceutical store manager at Dechatu Health Center

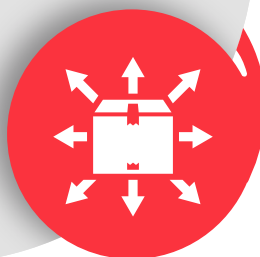
mBrana

mBrana is a smartphone application that helps track vaccine and insecticide treated nets supplies and distribution at the woreda level. DHA has achieved significant milestones in developing and supporting the system, delivering a robust and user-friendly solution meeting the diverse needs of DHA stakeholders and clients.



DHA provided technical support to **148** woredas in mBrana implementation

Distribution of **3+ million** LLINs was fully tracked using mBrana



Building a Culture of Data Use in Ethiopia's Health Sector

DHA helps health service providers, health managers, and policy makers use data for planning, service delivery, monitoring, performance management and policy level, and decision making. It aims to enhance decision makers' skills in evidence-based choices and aid in implementing the information revolution.

To date, DHA assisted 611 health institutions in moving along the information revolution pathways leading to the creation of more than 150 model health institutions (institutions with high data quality and infrastructure supporting better decision making capabilities enhancing the delivery of quality of health care).

With support from DHA, the upgraded DHIS2 has been cascaded to 200 woredas. These along with tools like eCHIS and EMR, have addressed consistent challenges, such as incomplete data collection, and have supported evidence-based decision making.



**The upgraded DHIS2
has been cascaded
to 200 woredas.**

Responded to Needs of Conflict-Affected Settings

In the Tigray Region, DHA has actively supported recovery of infrastructure destroyed during civil conflict, focusing on key health facilities and district health offices. A total 50 major facilities, representing one-third of the total client load in Tigray, have resumed reporting through the health management information system (HMIS) and Dagu system because of this support. DHA's support was extended to revive and resume the operation of the eCHIS in Adiarkay, Meket, and Dehana woredas.



In Practice: Conflict-Affected Hospital Restructured through DHA Support: The Case of Ayder Hospital

Ayder Hospital housed over 1.1 million patient cards in a state of complete disarray from regional instability. The waiting room filled while health workers chased down health records, often moving forward with patient care without patient data or context.

When security stabilized, DHA supported the hospital in restructuring and streamlining patient records in the post-conflict Ayder Hospital. Restructuring involved relocating inactive patient cards to the archive, creating space for new cards, and organizing misplaced cards. This initiative reduced congestion, improved tracking efficiency, and facilitated quicker access to patient records.

Dr. Kibrom Gebreslassie, chief executive director of Ayder Hospital, credits DHA with helping the facility get back to practice. “We recognized the importance of efficient patient card management and invested the necessary resources to improve the chart room’s functionality,” he notes. “We thank DHA for their support in restoring our hospital following the war. Successful completion of the restructuring process is a testament to the commitment of hospital management to provide high-quality health care services.”



“We recognized the importance of efficient patient card management and invested the necessary resources to improve the chart room’s functionality,”

Dr. Kibrom Gebreslassie, chief executive director of Ayder Hospital



Gender and Youth

Youth Enterprise

DHA, with USAID support, launched a youth enterprise program to address gaps in skilled health information systems staff in the tech sector. The initiative provides technical and financial support for 16 enterprises, involving around 155 recent university graduates in health informatics and science, technology, engineering, and math (STEM).

During the reporting year, the enterprises continued providing technical support to 337 health facilities (hospitals, health centers, health posts) and zonal and woreda health offices to ensure the functionality of HealthNet, DHIS2, Dagu, integrated pharmaceutical logistics system (IPLS), eCHIS, EMR, data backup and recovery, and hardware and software maintenance. Youth enterprises are engaged in income-generating and market expansion activities to enhance their earnings and become viable and competent in the market. Overall, these enterprises generated an income of more than 1.3 million birr, demonstrating the growing potential of youth enterprise to diversify their funding base

16

youth enterprises supported by DHA started generating their own funding



50%

of the youth enterprises supported by DHA are women-led



Gender

A study conducted by DHA, in collaboration with Data Use Partnership and the MOH, [highlighted the gender-digital HIS gap in Ethiopia](#). Findings informed development of [Ethiopia's national strategy for mainstreaming gender within digital health and HIS](#). This strategy aims to address gender-based inequalities in access to and use of health information and digital health.

Capacity Strengthening and Education

DHA collaborates with local universities to ensure continuous support for training programs. Also, centers of excellence and academies established in universities for various digital health tools. DHA works closely with five universities in the implementation of the MOH information revolution agenda, three of which are designated as centers of excellence in digital health for sustainable implementation and scale-up of DHA's interventions.

eLearning for Health Professionals

DHA has been working to create and put into action various plans and guidelines to help health professionals improve their skills. A single portal landing page was designed with links to courses and training on Ethiopian Primary Health Care Clinical Guidelines (EPHCG), DHIS2, eCHIS, and HMIS core concepts. More than 5,400 learners have enrolled and taken course work in this e-Learning platform, which teaches how to use these systems and how to further their use in the future.



More than 5,400 learners have enrolled and taken course work in this e-Learning platform.

Streamlined HR Functions

Integrated Human Resources Information System (iHRIS), an open-source tool, efficiently handles human resource administration, capacity development, and licensing. It empowers users to oversee human capital, track the health workforce, and enhance data quality for informed human resource decision making by the MOH and other stakeholders. The recently completed offline version of iHRIS enables facilities without Internet access to seamlessly import-export data, promoting comprehensive data management and ensuring health facilities with limited connectivity still benefit from iHRIS. The system has the potential to reduce time and organize candidate pools to streamline hiring practices in the health system where turnover is regularly high.

The recently completed offline version of iHRIS enables facilities without Internet access to seamlessly import-export data.











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