DIGITAL HEALTH IN FOCUS

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CONTENTS

DIGITAL HEALTH IN FOCUS

EDITORIAL

MAKING A CASE FOR SHIFTING FOCUS AND INVESTMENT TO DIGITALLY TRANSFORM HEALTH SERVICES DELIVERY

Ethiopia is digitizing its various health information systems to improve collection, aggregation, and use of quality routine health information at all levels in the health system. A lot has been achieved, including rolling out District Health Information System 2 (DHIS2) as a national health management information system, including management of reporting hospital and health center reform key performance indicators; reporting of the national public health emergency management system; and recently COVID-19 surveillance and tracking. There are also efforts to digitize the upstream and downstream supply chain operations, the human resource information system, and the regulatory information system. However, investments on data systems should be better complemented by digital tools that target improvement in the availability and quality of health care services and ultimately improve the health of Ethiopians.

In 2018, the World Health Organization (WHO) published Classification of Digital Health Interventions[1] based on the targeted primary user interventions for clients, health care providers, health system or resource managers, and data services. Looking closely at the priorities and progress of implementation of digital health interventions in Ethiopia, most of the focus in the past was on the last two categories of digital health interventions, despite efforts to roll out electronic medical records (EMRs) and building service delivery job aids within the electronic community health information system (eCHIS). Opportunely, the national eHealth Architecture and the recently endorsed digital health blueprint have identified various point-of-care digital health tools as priority shifts toward development and implementation of these systems.

The Digital Health Activity (DHA) team recognizes that interventions targeting health system managers and data users can improve the capability of the Ethiopian health system to generate and use data to inform strategic and operational decisions and improve health system performances. Documented evidence shows the health impacts of strengthening the national health information system. However, it is equally important to deploy digital tools that serve as service aid, ensure adherence to treatment standards and guidelines and provide clinical decision support functionalities for the health care workers while allowing data to be captured digitally for management of individual patient level data. The EMR and eCHIS are best examples of digital tools that help health care workers provide standardized health care services. Similarly, digital tools that have potential to empower patients/clients about their own health should be at the top of the digital health implementation agenda. For instance, we can think of the tools for personal health tracking, targeted and untargeted client health communications, and on-demand client health communications. Right now, however, tools that target patients/clients are not priorities of the digital health interventions in Ethiopia.

Accordingly, DHA's focus is shifting towards community beneficiaries and health care workers targeting improvement in healthcare and health outcomes. In this approach, the direct beneficiaries of interventions supported by the DHAare health care providers at community and health facility levels and most importantly the patients/clients and members of the community. The goal of this shift in approach is to digital health interventions that have a direct impact on improving health care services (promotive, preventive, and curative); client/patient empowerment; and standard of care provision and referral, which will ultimately improve the quality adjusted life year (QALY) and disability adjusted life year (DALY) of the populus to create a prosperous society. See the graphics below.

[1] WHO classification of digital health interventions https://apps.who.int/iris/bitstream/handle/10665/260480/WHO-RHR-18.06-eng.pdf

This shift in focus will support efforts to create:

digitally enabled health workers	data informed community members	improved data access at grassroots level	improved information use culture

and **have tangible benefit on health service providers' work** (streamlining data generation, sharing, analysis, and use for the health facility teams) and **population health** (through more evidence-based targeting of health services based on disease burden within the catchment community).

The DHA data use support will focus on improving the use of data at the point of collection (service delivery point) **for clinical decision making.**

This approach is expected to result in **transforming the collection and use of high quality data by healthcare providers.**

If backed by appropriate use of digital tools, it minimizes the workload and data reporting burden of the already stretched health workers at the point of care, freeing their time to provide quality service, which ultimately improves health outcomes. The fact that health extension workers are now routinely using tablets to record important health data and then sharing it instantly within their updated family health record is an excellent illustration.

Point of care systems:

Standardize health care (EMR, eCHIS)

Improve access to care (eCHIS)

Significantly reduce stock outs of life saving commodities and vaccines (DAGU)

Focusing on digital health interventions targeting healthcare providers and the community/clients is believed to improve:

early diagnosis

referral and quality of services

eases the burden of the health care providers

Thereby, significantly upgrading health care seeking behavior to bring mothers and children to care and treatment.

Impact of this approach will particularly be pronounced in programs which particularly need longitudinal long term follow ups (TB, HIV, immunization) and programs which have ambitious target to eliminate diseases (Malaria, NTDs), as the tools enable:

Individual level tracking of patients

Monitoring of outcome

Reporting to health authorities (WHO, CDC)

Contribute to the global fight against these diseases

The Digital Health Activity will support the implementation of digital health tools at the point of care level at the right scale and with quality in a way that will show its impact on service delivery, quality, and patient satisfaction.

LESSONS FROM THE COVID19 SURVEILLANCE AND TRACKING SYSTEM IMPLEMENTATION TO ACCELERATE THE USE OF DIGITAL TOOLS FOR THE VACCINATION PROGRAM

Netsanet Animut, DHA Senior Director

Ethiopia is the fifth most COVID-19-affected country in Africa and reported the highest number of COVID-19 cases in the east Africa region. As of December 07, 2021, the country reported 3,908,170 COVID-19 laboratory tests, of which 372,462 (9.5% positivity rate) were confirmed cases, and 6,808 (1.8 percent) deaths. Ethiopia rolled out COVID-19 vaccination on March 13, 2021 with 2.2 million vaccines from the global COVAX initiative. As of December 07, 2021, a total of 10,228,230 doses had been administered and a total of 8,774,383 individuals vaccinated.

Given the scale of vaccination, digital tools have a critical role in increasing efficiency and effectiveness of the COVID-19 vaccine delivery process and the management of the vaccine program. The speed at which the vaccine is being delivered and administered requires the support of digital technologies that can play a critical role in facilitating the planning, delivery, monitoring, and management of vaccination programs. Several lessons have been taken from the process and outcomes of the COVID-19 surveillance and tracking systems implementation in Ethiopia.

The first and most important is the way Ethiopia leveraged existing digital health tools, human resources, and infrastructure to quickly deploy digital COVID-19 surveillance and tracking systems. The District Health Information Software 2 (DHIS2), Electronic Community Health Information System (eCHIS), and logistics management information system (LMIS) technical teams were repurposed to work on customizing the COVID-19 tracker, community screening, and COVID-19 commodity management tools, respectively. This helped to rapidly customize and deploy existing tools, tapped into existing teams of well-trained personnel, and hosted an infrastructure that was prepared for routine digital health systems. Using the same approach, the electronic regulatory information system; VITAS (the warehouse management system at EPSA); mBrana (the vaccine management system at woreda health office); and DHIS2 (a client tracker of COVID-19 vaccination) were used to support the planning, delivery, monitoring, and management of the COVID-19 vaccination program.

Another lesson relates to the difficulty of finding a single platform or solution that fits all of the country's COVID-19 vaccine management requirements. Ethiopia built the DHIS2-based client tracker, which responds to most but not all requirements of the COVID-19 vaccine management at the required maturity level. It is important to apply lessons from countries like Sri Lanka, where the DHIS2 system works as the source of information for COVID-19 vaccination. As part of it's DHIS2 innovation, Sri Lanka integrated DIVOC (a platform developed in India for COVID-19 vaccine management) with the existing platform DHIS2 to generate COVID-19 vaccine certificates. Integrated with DHIS2, DIVOC certification and verification has been used for the generation of DIVOC's digitally verifiable certificate in alignment with the WHO's SVC standards for vaccination certificates. Ethiopia should follow a similar approach and maximize the strengths of the two tools for scaled implementation.

"Given the scale of vaccination, digital tools have a critical role in increasing efficiency and effectiveness of the COVID-19 vaccine delivery process and the management of the vaccine program."

DHA provides technical and implementation support to rollout digital tools that support COVID-19 vaccination program. We believe that our support will facilitate data-driven client prioritization and access to ensure people such as elderly, individuals with comorbidity, frontline workers, and others who need it most are vaccinated; ensure longitudinal tracking of clients who have received the vaccine full doses and use the tracking for possible future booster doses; monitor and respond quickly to adverse vaccine reactions; track vaccines to the last mile to avoid diversions and misuse; and facilitate reporting (Adverse Events Following Immunization to WHO). DHA's efforts will also allow community members to receive full information about the vaccine they are receiving and provide them a tool to report if they have an adverse reaction. Our suite of tools significantly improve patient empowerment and decision making when fully implemented.

As of December 07, 2021, a total of

10,228,230

doses had been administered and a total of

8,774,383

individuals vaccinated.

LEADERSHIP AND ATTITUDE CHANGE FOR SUCCESSFUL EMR IMPLEMENTATION: A LESSON LEARNED AT HEALTH FACILITY IN ETHIOPIA

Biruhtesfa Abere, DHA Digitization Director

It has been a couple of months since the Ministry of Health (MOH) turned its attention towards improving point of care applications to ensure quality of care, universal health coverage and equity. Electronic Medical Records (EMR) system is one of the digital tools used to digitalize workflows within health facilities, becoming one of MOH's flagship digital tools.

Ethiopia has been trying to implement EMR at public health facilities for many years. Efforts, however, have been unsuccessful in all but a few facilities. The main reasons for failure was that there was no national EMR implementation roadmap that guides the overall EMR implementation, absence of EHR standard that governs the tools and EMR compliant site selection, health facilities management poor attitude towards EMR implementation, expensive investment requirement and lack of priority by the Ministry of Health are to be mentioned among many. This has taught MOH as well as EMR implementers that EMR implementation is beyond scaling a technology and has different characteristics than other health information system tools. Over the past few months, DHA has been supporting the MOH with EMR implementation at selected health facilities.

The system deployed at these health facilities is Bahmni, a global open EMR tool that meets the Ethiopian Electronic Health Record (EHR) standard and provides end-to-end automation of health facility services. Implementation of EMR in a hospital takes more time than a health center because the volume of services is far higher at hospitals. Implementation at one of the hospitals started in mid-2019 and involved infrastructure fulfillment, equipment procurement, and provision of on-the-job training. DHA documented challenges and lessons identified over the course of implementation to inform subsequent EMR scale up efforts. Among the challenges were leadership and staff attitude to use EMR, Business Process Reengineering (BPR), and frequent changes in service delivery rooms due to COVID-19. DHA has worked closely and aggressively with the management and the staff to overcome these challenges.

EMR scale up in three health centers started in July 2021. A set of predefined criteria was used to select the health centers in Addis Ababa. Comparatively to the hospital, the implementation progressed rapidly, with many of the service delivery rooms implementing the EMR in a short period of time.

Ferensay health center is one of the champions in implementing the EMR within a short time in all of its eight outpatient departments and laboratory unit. DHA provided on-the-job training while the health center leadership secured the necessary infrastructure and equipment and changed staff attitudes about use of EMR by building understanding of its benefit to service quality. In a gesture of commitment, the CEO and medical director even gave their own desktop computers to service delivery rooms to fill the infrastructure gap.

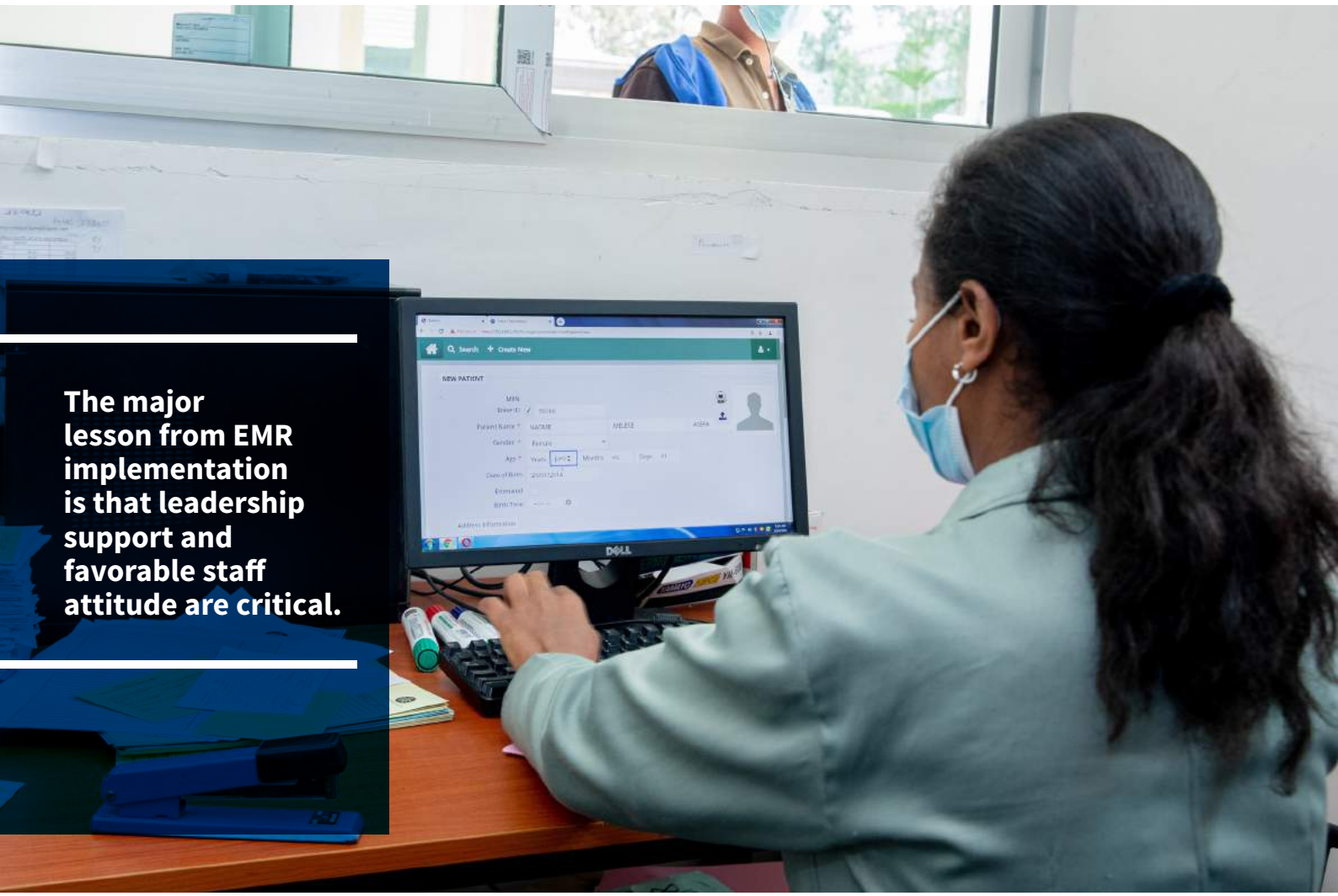
The implementation of EMR at Ferensay health center can be considered as a "True Implementation", as the implementation is growth oriented and sustainable.

"Electronic Medical Records (EMR) system is one of the digital tools used to digitalize workflows within health facilities, becoming one of MOH's flagship digital tools."

The implementation is natural, internalized by the staff and grows to other delivery rooms and strives to digitize a system end to end. The health management information system (HMIS) team head looks forward to when the EMR is interoperable with DHIS2 to end the tiresome process of tallying reports from each delivery room and to improve data quality. This showed that the staff understanding about digitization is allowing them to push the implementation forward and move ahead of the implementers.

When clinicians reported that patients were offended because they thought they were not getting full attention when clinicians used EMR on their mobile phones or computers, Ferensay started educating patients about the benefits of EMR through a health education program for the community. This has helped to improve the patients' acceptability of EMR which will contribute to the success of scale up efforts, and shows the impact of community engagement in the success of EMR implementation.

The major lesson from EMR implementation is that leadership support and favorable staff attitude are critical. A facility management with an open mindset and attitude about digitization can facilitate full automation of EMR even if there is poor infrastructure. Infrastructure gaps can be closed with partner and stakeholder resource mobilization. Facilities eager to implement EMR should consider training staff first to ensure understanding and acceptance.



The major lesson from EMR implementation is that leadership support and favorable staff attitude are critical.

EXAMINING THE IMPACT OF INTRODUCING HEALTH COMMODITY ITEM CODES

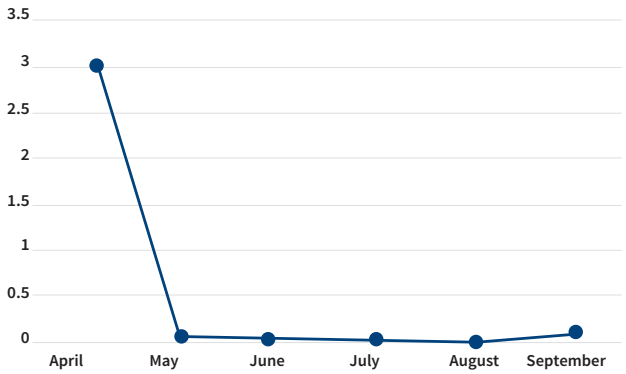
Biruk Asrat, DHA Supply Chain Project Manager

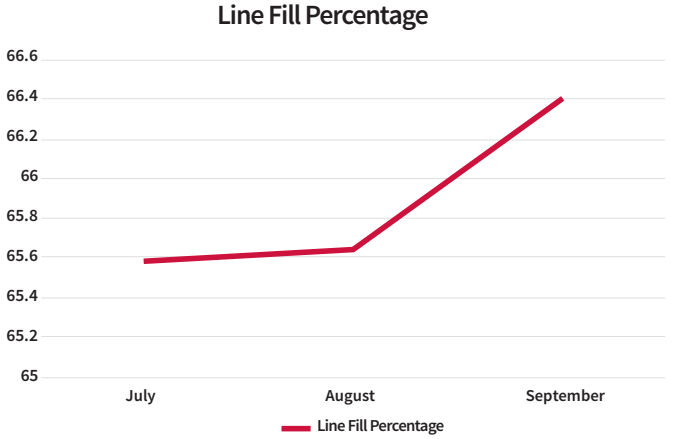
Over 12,000 unique items flow through Ethiopia's health commodity supply chain under the management of the Ethiopian Pharmaceuticals Supply Agency (EPSA). The agency is responsible for 80 percent of health commodities distributed in the country and serves nearly 16,000 service delivery points (hospitals, health centers, and health posts).

Vitas is an enterprise-level supply chain management information system that directs supply operations at EPSA. Agency employees have been using the system for a long time now, but were struggling with high wastage and low fill rate. Upon further investigation, we found that there were a large number of duplicate items due to erroneous entry of item names on the master list (containing a list and description of all items). Stock on hand, average monthly consumption, and other information about a single item were also found to be duplicated. This led to low fill rate, high wastage rate, and poor report and requisition form (RRF) data quality. Health facilities use RRFs to report commodity consumption and request for resupply from EPSA.

In collaboration with the USAID Digital Health Activity (DHA), EPSA developed and developed and assigned codes to each item. When items were found to be duplicate or the same with slight differences in the description, the same code was assigned to them. Assigning the same item codes to similar products also helped to address the issue of stock out, by offering suppliers with alternatives.

As evident in the diagram below, the change significantly lowered wastage rates. Additionally, the change boosted customer satisfaction by improving line fill rate, and significantly decreased stockout rate. Facilities served by EPSA are now able to get stock according to their request.





DORE BAFANO PRIMARY HOSPITAL: IMPACT OF CARD ROOM IMPROVEMENT

Bizuayehu Elias, DHA Field Data Use Officer

The central card room is a place within a health facility where patient's records are kept. Card rooms require proper organization, adequate staffing, and sufficient space. Furthermore, all patient information needs to be recorded in the electronic medical catalogue system (eMCS), avoiding any duplications. The card room, when managed properly, facilitates health service delivery by keeping patient information safe and accessible.

Since the Dore Bafano Primary Hospital was upgraded to a hospital, card room management was a challenge. During the transition, it was found that not all of the patient information (96,000 records) were recorded on the eMCS and there were many duplicate patient cards due to difficulty locating original cards. With mentorship support from the USAID's DHA team, hospital management undertook card room renovation, backlog data entry, and live registration. "Previously, due to inappropriate card arrangement, we couldn't locate patients' cards. This led to a wastage in time and overburdened staff who would issue additional cards for the same client. But now our time is saved and the staff are happy to work in the card room," said Letefe Eyamo, card room head.

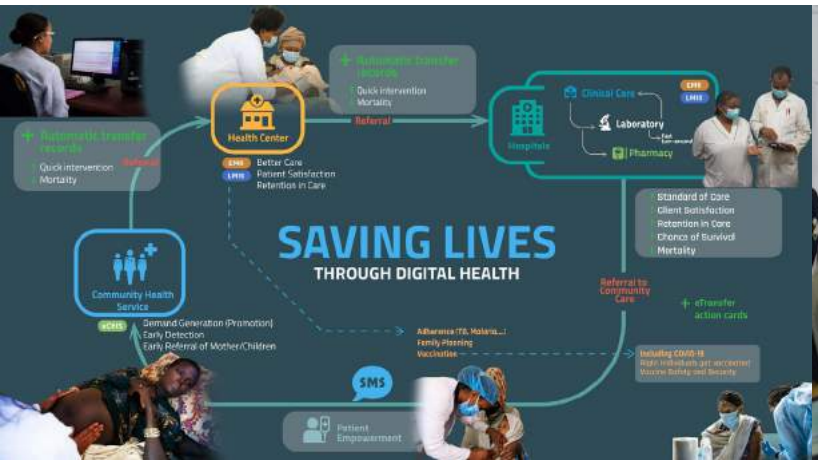
Since the renovation, the cards are well arranged and ordered according to their medical record number. Backlog data entry is almost completed for all cards, and live registration of new cards has begun. Thus, the card room has become easily accessible and patient waiting time has decreased. As Lalimo Godana, the health management information system focal person put it, "After our hospital management decided to renovate the card room, patient waiting time decreased significantly, cards are now easily accessible and as a result, printing cost is minimized." According to the hospital's quality check system, the improved card room has significantly contributed to the overall hospital quality rating, from 31 to 81 percent.

Before intervention

After intervention

USAID HEALTH FAIR

At the USAID Health Fair in August, DHA showcased its work for USAID Administrator Samantha Power, using visuals (below) to demonstrate how USAID support for digital health is improving the health and well-being of Ethiopians. Accompanied by Minister of Health Dr. Lia Tadesse, Ms. Power observed the efforts being conducted across various health information systems, further demonstrating how DHA is saving lives through digital health.



DHA Chief of Party Loko Abraham presenting to Samantha Power and Minister of Health Dr. Lia Tadesse.

Youth Enterprise lead Abigiya Kelbesa discussed her role in developing a health information system enterprise and expressed her gratitude for the opportunity to improve the health sector in Ethiopia.

Abigiya Kelbesa presenting to Samantha Power and Dr. Lia Tadesse

DIGITAL HEALTH CONFERENCE AND EXHIBITION

In September, DHA supported the execution of the MOH's first Digital Health Conference and Exhibition. At the event, hree documents (below)—the Digital Health Blueprint, Standards for Electronic Health Records (EHR) in Ethiopia, and Pathways to Improve Health Information Systems in Ethiopia - Maturity Assessment, were developed by MOH with technical support from partners including DHA were officially launched.

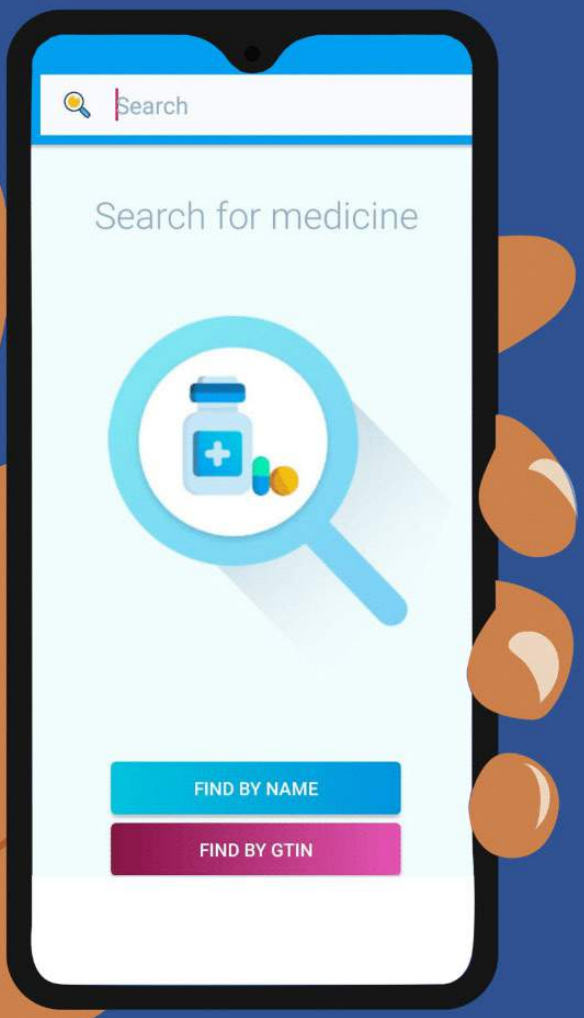
USAID Acting Health Office Director Sinu Kurian delivered opening remarks and pledged support to the implementation of the documents, saying "We commend the MOH as they support the digitization of information to unlock increased access to health data, the use of which can inform more precisely targeted and adapted decision-making at all levels of health care."

DHA also participated in an exhibition that showcased activities it is implementing in support of the national Information Revolution agenda.

i-Verify

EFDA
የኢትዮጵያ ምግብና መድኃኒት ባለሥልጣን
ETHIOPIAN FOOD AND DRUG AUTHORITY

A MOBILE APPLICATION USED TO VERIFY IF A MEDICINE IS REGISTERED AND/OR AUTHORIZED BY THE ETHIOPIAN FOOD AND DRUG AUTHORITY (EFDA)



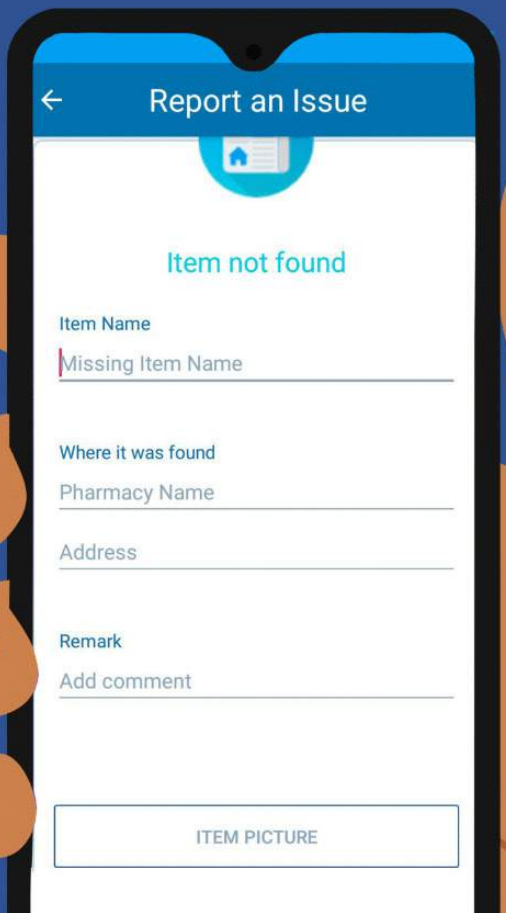
1. Download the iVerify mobile app from GOOGLE PLAY

2. Type in the name of the drug or move the front packet of the drug or the barcode to your mobile camera and click SCAN

3. If you do not receive any information, report the drug to the EFDA. Click on the Report button and type the name of the city and the name of the pharmaceutical establishment or health care facility where you found it.

4. As additional information, send a photo of the medicine.

The Authority will evaluate the information and take the necessary action.



Reason for Reporting on i-Verify:

1. When the scanned medicine is not found

2. When medicine batch number & expiry date on i-Verify are different from the actual MEDICINE

3. When the products is expired

OR CALL OUR FREE HOTLINE 8482

GET IT ON Google Play

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ጤና ሚኒስቴር - ኢትዮጵያ
MINISTRY OF HEALTH-ETHIOPIA

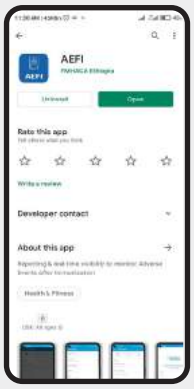
EFDA
የኢትዮጵያ ምግብና መድኃኒት ባለሥልጣን
ETHIOPIAN FOOD & DRUG AUTHORITY

EFDA- Adverse Events Following Immunization (AEFI)

የኮቪድ 19 ክትባት የጎንዮሽ ጉዳት ከተከሰተ ሪፖርት ለማድረግ እና ለመመዝገብ የሚያግዝ የአንድሮይድ ሞባይል መተግበሪያ ተዘጋጅቷል። ይህ መተግበሪያ ወዲያውኑ የሚታይ እና የክትባት የጎንዮሽ ጉዳት ክስተቶችን ለኢትዮጵያ የምግብና የመድኃኒት ባለስልጣን ሪፖርት ለማድረግ የተዘጋጀ መተግበሪያ ነው። ይህ መተግበሪያ ዲዛይን ሲደረግ በማንኛውም የአቅርቦት ሰንሰለት የጤና ባለሙያዎች ሪፖርት ለማድረግ የሚያስችል ነው።

የEFDA-AEFI መተግበሪያ እንዴት ያወርዳታል

1. ከ Google Play AEFI (FMHACA Ethiopia) መተግበሪያን ያውርዱ



2. አካውንት ይፍጠሩ

3. ይመዝገቡ

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6. ምልክቶችን ያስገቡ

7. ሪፖርቱን ይላኩ

ጥቅሞቹ

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የኢትዮጵያ የምግብና የመድኃኒት ባለስልጣን የክትባቱን የጎንዮሽ ጉዳት በመከታተል ተገቢውን የማስተካከያ እርምጃ ይወስዳል።

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ቴሌግራም አካውንት

ፌስቡክ አካውንት

ጤና ሚኒስቴር - ኢትዮጵያ
MINISTRY OF HEALTH-ETHIOPIA

The MOH E-learning site offers Online Courses on different electronic health information systems (HIS) and tools. The site facilitates remote, user-driven trainings for health care workers.

Dagu 2.0 Online Training

DHIS2 Online Training

Integrated Pharmaceuticals Logistics System (IPLS) Online Training

Electronic Community Health Information System (eCHIS)

Health Management Information System (HMIS)

Register at: moh-elearning.web.app

Upon successful completion, you will be awarded a certificate.

NATIONAL HEALTH INFORMATION SYSTEMS' HELP DESK

CALL 7076

Visit: https://support.moh.gov.et

DIGITAL HEALTH IN FOCUS

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