METS*WATCH*

Advancing health information security, privacy and confidentiality

The Assistant Commissioner DHI addressing stakeholders at the HIE and Health Security Validation workshop at Paradise Hotel in Jinja

The Government of Uganda through the MOH is committed to utilizing Information and Communications Technology (ICT) to transform healthcare service delivery. This is evidenced by the inclusion of eHealth as one of the priorities in the Health Sector Development Plan. This has been expounded in the health information and digital health strategy whose goal is 'To strengthen the health information system and leverage digital health to optimize health service delivery by 2030'.

With support from the Makerere University School of Public Health (MakSPH) – METS Program and other partners, the MoH has developed the national Health Information Exchange (HIE) and Interoperability guidelines that will guide the implementation of HIE initiatives within the health sector.

Additionally, there is on-going development of the Health Information Security, Privacy, and Confidentiality guidelines that shall guide national efforts on patient identification, health data protection, privacy, and confidentiality concerning data collection, processing, storage, and use.

The two guidelines are already in the final documentation stages and are awaiting MoH approval. METS will continue to collaborate with MoH to ensure these documents are disseminated for use.

Going forward, METS Program will work with MoH Uganda to develop Electronic Medical Records (EMR) guidelines and standards to guide the implementation of EMR systems within the health sector.

Inaugural HIV Recency Testing Data Quality Assessment

The Uganda Ministry of Health (MoH) with funding from the US Centers for Disease Control and Prevention and in collaboration with USCF and METS started implementation of HIV Recency testing in October 2019. The purpose of Recency Testing is to find newly infected patients within 6 months of infection, who are capable of spreading HIV. As of September 2022, Recency Testing had been scaled to 123 districts and over 978 health facilities across the country.

METS was tasked to strengthen data management and reporting systems for the HIV Recency Testing program.The data management process for Recency data is as follows:

> **The purpose of Recency Testing is to find newly infected patients within 6 months of infection, who are capable of spreading HIV. As of September 2022, Recency Testing had been scaled to 123 districts and over 978 health facilities across the country.**

- Data is first collected using paper-based tools – the HTS Client card, HTS Client Card Addendum, and HTS register.

- The data from the HTS Client card and addendum are then entered into electronic medical records (EMR) at facility level.

- The EMR automatically synchronizes selected fields from the HTS record for surveillance purposes with the central database hosted at the Ministry of Health

- The surveillance data from the central database is analyzed to guide public health action.

- A proportion of the HIV positive samples tested for recency at facility level are sent to Uganda Virus Research Institute (UVRI), where they are retested, for quality assurance (QA) purposes. This sample is sent, together with the shipment form which has patient level data.

- Upon retesting the samples at UVRI, the data is entered into UVRI systems and correlated with the data within the central database.

- The facilities also report recency data to Ministry of Health *into the DHIS2-based eHMIS system platform as well to PEPFAR through PEPFAR In-country Reporting System (PIRS).*

The process above shows that the program has multiple data sources, multiple databases and reporting mechanisms. There are observed discrepancies in data reported from the central database and UVRI testing systems, and between MoH eHMIS and PEPFAR PIRS usually due to data entry errors, transcription errors, arithmetic errors, EMR challenges among others.

The inaugural HIV Recency Testing Data Quality Assessment (DQA) was conducted from 28th August – 10th September 2022, with an aim of designing interventions for improving data quality for public health action.

The DQA was designed as a cross sectional assessment using mixed methods; qualitative (observation and key informant interviews) and quantitative data collection methods at selected facilities with a focus on assessing the data management system, verifying, and validating data at the sampled health facility.

At each of the facilities, the DQA team would conduct a cross validation of data by comparing the data elements of sex, age, HTS results, Recency results from the HTS Register as the primary data source with that of the HTS client cards, Recency Logbook, HTS Client Addendum and an extract from the EMR. The aggregate numbers in the facility HMIS 105a would also be compared with the eHMIS and PIRS records. This approach provided a comprehensive comparison of patient level and aggregate records at facility and national levels.

The DQA was carried out in a representative sample of 170 facilities geographically distributed across the country by 15 teams of members from MoH, METS, UCSF, implementing partners (IPs) and districts health teams. Below are some of the key findings:

M&E systems: Overall, the M&E systems were inadequate with only 'availability of HMIS tools' and 'understanding of the indicators and reporting guidelines' meeting the standards. There were gaps in the 'use of data for decision making' across all sites.

Data validation: With respect to data validation of recent and long-term results across different tools, there were discrepancies between long term and recent results in the HTS register and other data capture and reporting tools (HMIS 105, EMR, HTS Card, recency addendum and recency logbook).

Entry of recency data across different data capture tools: Of the 9,375 HIV newly identified HIV positive clients that were entered in HTS register, only 2,979 (32%) and 2,914 (31%) could be accounted for in the HTS cards and EMR respectively as shown in the table below. It was thus concluded that EMR usage is suboptimal and ranged from 13% to 60%. The findings highlight the need to support the data management and reporting systems for Recency through training, on-site mentorships, and coaching. The final DQA report ......

Percentage of newly identified HIV positives in HTS register captured in other HMIS tools and EMR

Entry points	HTS Register	HTS Cards		EMR		Recency Addendum		Recency Logbook	
Overall	9,375	2,979	32%	2,914	31%	3,980	42%	4,426	47%
OPD	3,667	1,230	34%	1,188	32%	1,708	47%	1,888	51%
ART Clinic	1,469	510	35%	576	39%	816	56%	874	59%
ANC	777	191	25%	207	27%	285	37%	302	39%
Ward/IPD	330	84	25%	96	29%	149	45%	147	45%
TB Clinic	195	87	45%	73	37%	91	47%	97	50%
STI Clinic	45	16	36%	16	36%	21	47%	21	47%
Index Testing	84	3	4%	5	6%	29	35%	36	43%
Maternity	45	18	40%	18	40%	18	40%	19	42%
Family Planning	18	6	33%	12	67%	8	44%	7	39%
Young Child Clinic	16	3	19%	2	13%	7	44%	7	44%
Nutrition Unit	10	4	40%	6	60%	4	40%	4	40%
PNC	45	9	20%	19	42%	20	44%	24	53%
SMC	9	2	22%	4	44%	4	44%	4	44%
Other Facility Based Points	430	109	25%	126	29%	117	27%	178	41%
Community	1,873	627	33%	511	27%	615	33%	716	38%
Not Indicted	362	80	22%	55	15%	88	24%	102	28%

Case Based Surveillance Learning Exchange in Kenya

The Uganda Delegation

Makerere University School of Public Health (MakSPH) - METS program was part of a 5-day (24th -28th October 2022) learning visit organized by the Kenyan National AIDS & STI Control Program (NASCOP) with 38 participating delegates from 3 countries of Uganda, Kenya, and Zambia. The meeting was attended by representatives from Ministries of Health and Centres for Disease Control and Prevention (CDC) from participating countries, and Implementing Partners; MakSPH-METS, University of California San Francisco (UCSF) Uganda/Kenya, Palladium Kenya and CIDRZ Zambia.

The main objective of the learning visit was to benchmark the Kenyan CBS program with the aim of harnessing the implementation modalities, lessons learned, and best practices that will guide program improvements in Uganda. The visit was expected to meet the following specific objectives:

- Gather experiences of the Kenyan Case Based surveillance (CBS) implementation, including the data management processes (collection, transmission and storage)

- Harvest the best practices, innovations and initiatives in Kenya CBS implementation that can be adopted for the Uganda CBS national implementation and program scale up

- Learn the Kenyan national policies, standards and guidance that MoH Uganda can adapt for the Ugandan context

- To understand the implication of CBS and scale up.

- Benchmark public health response using the CBS data at National and subnational levels

Mathare site visit briefing

Mathare site visit briefing

The learning visit comprised of presentations by NASCOP, Palladium, UCSF as well as the guests; Uganda and Zambia, with field visits to health facilities to see first hand the integration of CBS into routine care provision workflows.

The key lessons learnt for implementation of the CBS program in Uganda will require key steps including; strong leadership, coordination and involvement by MoH and partners, alignment of funding priorities with national needs; clear documentation of policies and guidelines; adoption of a unique identifier to manage de-duplication of patients across the health sector;

strengthening communities of practice within the workforce capable of maintaining and extending the CBS implementation and development of a national data warehouse for surveillance.

The immediate actions by the team from the visit included the constitution of a CBS Working committee for which terms of reference were to be developed. The committee was tasked to work with CDC to enhance the available protocols to allow the use of CBS patient level data; engage with MoH - Division of Health Information (DHI) on the following: adoption of paperless alternatives at health facilities, data warehouse,

finalize the master facility register; and collaboration with the client registry working group for design and adoption of a National Unique Patient Identifier (NUPI).

MoH Uganda will have to resolve challenges revolving around the high investment and operational costs required for infrastructure, hardware, software, and human resource to capture high quality digital point of service data, suboptimal use and access to data as well as ensuring linkage of information systems across multiple facilities to manage de-duplication efforts.

Milestones in equipping health facilities to track commodities

UgandaEMR is an electronic medical records system that is currently in use in over 1,400 health facilities in Uganda. UgandaEMR currently supports the following service areas such as HIV, TB, MCH, Laboratory, SMC, and Cervical Cancer, among others. Since 2015, the MakSPH-METS program has been supporting the Ministry of Health in the design and development of UgandaEMR. One of the latest modules added to UgandaEMR by MaKSPH-METS is the stock management and dispensing module.

The stock management and dispensing (SMD) module supports the documentation of essential medical supplies distributed and/or received at health facilities from the national medical warehouses.

At the health facility stores, the store manager/officer receives and takes stock of the medical supplies; these are recorded in the SMD module of UgandaEMR. In addition, the module supports tracking of drug prescription and dispensing at a health facility. With this module, the MakSPH-METS program in collaboration with MoH and CDC is addressing the challenge of tracking medical supplies from the time of receivership to the various dispensing points (Figure 1).

SMD architectural flow diagram
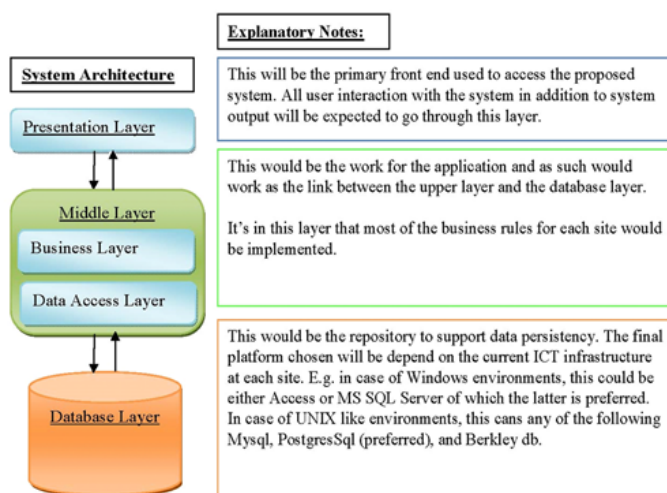
The SMD module has been developed with an interoperable interface that aids integration with other supply chain systems such as RX solution, Real-Time ARV Stock Status (RASS), Pharmaceutical Information Portal (PIP) among others. The next step towards the implementation of the module is to conduct a national readiness assessment to identify potential health facilities with both human and technological resources to use this module.

Pictorial

Information Communication and Technology (ICT):

METS worked with MoH and Partners (JHPIEGO, Mildmay, IDI and others) to establish ICT needs, provide ICT equipment, set up the infrastructure, extend internet connectivity (working with NITA-U), maintain connectivity systems between the District Local Government offices and the Ebola Treatment Unit (ETU) at Mubende RRH. This contributed to communication, reporting, and coordination of the response.

Alex Mirugwe (METS) supporting data verification and cleaning process at the data pillar center

Planning Meeting with IPs on ICT Infrastructure

Support to national NCD roll out program

NCD TDY meeting at Kisenyi HC IV

MakSPH-METS with support from CDC is in the process of integrating Non-Communicable Diseases (NCDs) into HIV care programs. Participants in the training, organised by MoH together with METS and IDI, include regional/IM care and treatment leads, physicians, M&E leads and psychosocial specialists from the regions.

Pilot validation was carried out in three PEPFAR supported implementing regions (Southwest, Kampala, and Kayunga). This is an interagency activity supported by MAKSPH-METS in collaboration with USAID_SITES and MOH. A total of 108 facilities were assessed during this activity and the validation results will inform national wide roll out of the NCD program.

METS supported tools development for facility level assessment, data compilation, data analysis and report compilation for feedback to stakeholders. A total of 5 facilities (Kiswa HCIII, Kitebi HC111, Namayumba HC111, Entebbe Hospital, Kisenyi HCIV) were assessed and data from 36 pilot facilities from Kampala/IDI region was extracted.

Training on the integration of eCBSS into DHIS2

MakSPH-METS conducted a DHIS2 training and guided selected district Biostatisticians on the integration with the eCBSS. A presentation to MOH monitoring and evaluation and data managers was made to give better understanding of the integration.

Mabel from METS taking the biostatisticians through eCBSS during the DHIS2 training