SEPTEMBER 2022

# METS WATCH

### **Improving ICT Infrastructure for Health Care in Uganda**



Ronald Gombya (MUWRP) receiving network equipment from Abert Mugisha (METS)

US Government through the US President's Emergency Plan for AIDS Relief (PEPFAR) Uganda and other efforts like the Global Health Security Agenda (GHSA) continues to support the Uganda Ministry of Health (MoH) to invest in critical Health Information System (HIS) infrastructure. Clean and secure information is only possible through robust information systems and the supporting infrastructure. Full time connectedness of HIS solutions is critical for improved health care and disease surveillance.

In Fiscal Year 2022, a centralized procurement approach to acquire and equip health facilities was considered with the aim of lowering the overall cost of acquisition. METS was tasked to support the procurement and distribution of hardware, working with MOH and Partners.

The main goal of the investment is to increase the usage of Point of Care data capture in high volume ART clinics (serving over 500 clients). Point of Care improves workflow and saves time on clinical decision making while allowing real-time data entry of accurate data while the client is still at the facility. As of June 2022, of the 618 high volume ART facilities, 99% were using Electronic Medical Records (EMR). However, only 38% were employing Point of Care. Following installation of these equipment, the number of highvolume ART facilities using Point of Care will more than double from the current 233 to about 530.

The health facilities are receiving networking equipment for mesh Wi-Fi to support campus-wide connections; data capture devices for facility and community health services implementation; plus large data storage and processing devices (servers). These specific items include:

- 1. Network connectivity hardware (security gateways, switches, access points)
- 2. Power solutions (solar equipment)
- 3. Video conferencing hardware
- 4. Data capture equipment (laptops, computers, servers, and fingerprint scanners)

This investment will improve personcentered clinical services, and use of data for program monitoring; clinical decision support; health information exchange within the health care system; data centralization and analytics for evidence-based planning.

The investment will also support tele-

mentoring for reinforced training and provider consultations using Zoombased teleconferencing technologies. While the scope of data entry equipment is limited to the ART clinic, the networking and power equipment can be used by other units in the facility.

Despite suffering procurement delays due to global supply chain disruptions related to the COVID-19 pandemic, the distribution and deployment of hardware started on 19th September 2022.

#### **Point-Of-Care Viral Load Monitoring Implementation In Uganda**

ccording to the 2020 Spectrum Modelling estimates, Uganda has 1,414,183 people living with HIV (PLHIV) of which 1,348,517 (95.4%) were reported to be receiving

life-saving Antiretroviral therapy (ART) as of June 2022 (MOH/ACP Care and Treatment, April-June 2022 Updates).

In 2013, WHO recommended Viral

Load (VL) testing as the preferred approach for monitoring ART. As of June 2022, national VL coverage and suppression was at 94% and 96% respectively (see maps below).



VL Coverage







Practical demonstration at Rushere Community Hospital

Despite the rapid expansion towards national coverage, the VL program faced some challenges including nonuniform access across subpopulations, long turn-around times, delayed VL results return, delayed or no clinical action on these results which, in combination, lead to poor clinical outcomes for PLHIVs on ART.

The March 2021 WHO guidelines recommended use of Point-Of-Care (POC) viral load technologies to improve access, test turn-around times, results utilization for clinical decision making and overall outcomes for PLHIVS ART.

The MOH POC VL Guidelines Development Group in Uganda recommended use of POC VL testing for specific priority sub-populations critically needing a faster test and result. Among these are pregnant and breastfeeding women, infants and children on ART, people with advanced HIV disease, and those suspected of treatment failure due to HIV drug resistance.

POC VL testing has been recommended for pregnant and BF mothers with plans to scaleup to other sub-populations in due course. Pregnant and breastfeeding mothers are unique in that gestation & breastfeeding are time-limited for interventions especially if the VL is non-suppressed thus making the daily risk of HIV transmission high. This is a special population where VL suppression is critical for the triple impact of protecting women's health, preventing Mother to Child Transmission (MTCT) throughout pregnancy and breastfeeding, and preventing sexual transmission to sexual partners.

MOH (ACP/NHLDS) with support from PEPFAR and its implementing partners is implementing the POC VL testing program in a phased manner. The MakSPH-METS Program has been involved at all stages of the POC VL program implementation supporting the following activities;

- 1. Stakeholder engagements
- 2. Development of POC VL Implementation Guidelines
- 3. Development of POC VL training materials
- 4. Cascaded trainings including national TOTs, regional, district and facility trainings and supportive supervisions
- 5. VL database and dashboard improvements and maintenance
- 6. Development of information systems to support transfer and integration of remote testing data to the national database.
- 7. Weekly online meetings with MOH and regional implementing partners to monitor performance across the country

Currently, POC VL testing is implemented at 161 facilities in 109 districts across the country. Trainings began in July and concluded at the end of August 2022. Testing is being conducted using the Abbott m-Pima and Cepheid GeneXpert platforms which are distributed according to the testing, human resource, and infrastructure capacity of each of those facilities.



VL Results slip



VL Introductory meeting



VL Training

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## **MoH Data Integration and Warehousing**



Presentations were made by Peraton and Palantir representatives sharing experiences on data warehousing architecture and use cases

A 2-day workshop on data integration and warehousing was organized by the Ministry of Health - Department of Health Informatics (MoH-DHI) in collaboration with the Centers for Disease Control (CDC) Uganda. The workshop was held at Serena Conference center and aimed to build on on-going efforts towards establishing national resources to support health programs.

Uganda has accumulated large amounts of data that are in different repositories which are not interlinked, thus affecting the quality of decisions. METS is assisting MoH-DHI to build a data warehouse. This will serve a central repository of information that will allow detailed analysis to guide informed decisions.

At the workshop, representatives from two international technology companies with extensive knowledge and experience in developing data warehousing systems Peraton and Palantir, shared guidance on warehousing architecture, tools for data ingestion and transformation, as well as selection of use cases to drive the implementation. These insights will guide MoH-DHI in developing a national warehouse.

The workshop was attended by representatives from Uganda National Health Laboratory Services (UNHLS) department and Central Public Health Laboratory (CPHL), Baylor Uganda, the PEPFAR Coordination Office, Health Information Systems Program (HISP) Uganda, Strategic Technical Information Support CDC-Uganda HIS team, (SITES), Makerere University Walter Reed Project (MUWRP), US Department of Defense (DoD) and JHPIEGO.



Cross section of participants at the data integration and warehousing workshop

## **METS at the Ebola Frontline**



Paul Katongole (Project Officer - IPC at METS) taking teams through IPC practices

The Ministry of Health (MoH) Uganda declared an Ebola Virus Disease (EVD) outbreak in Mubende District on 20th September 2022. The MoH requested partners to support the national response along the following pillars: 1) Coordination, 2) Case management, 3) Surveillance, 4) Laboratory, 5) Data management, 6) Water, Sanitation and Hygiene / Infection Prevention and Control and 7) Risk management.

The Makerere University School of Public Health-METS program is providing support to four pillars of the response;

**1. Surveillance:** METS is leading in Contact tracing at 3 sub-counties in the districts of Mubende, Kyegegwa and Kassanda, working with the 'Alert' Management Team to identify and line list contacts of confirmed cases; follow up the contacts in the community for a minimum of 21 days; training and supervision of the Village Health Teams conducting contact tracing. METS trained a total 249 VHTs and district teams.

2. Data Management: Key supported activities by METS in collaboration CDC-Uganda with include the following; training contact tracers on the Go.Data tool which collects data that is transmitted to a Situation room; Data cleaning and analysis; internet connectivity between Mubende district offices and the Ebola Treatment Unit; Enabling information exchange between Go.Data and eIDSR (the National surveillance system), and the CPHL electronic results dispatch system (eRDS). A total of 298 District Health Teams (DHT) personnel from 13 Districts were trained on Go.Data while 198 were trained on eIDSR.

**3. WASH/IPC activities:** Working with MoH, UNICEF and MSF, METS is supporting training, coordination and supervision of Ebola Treatment Unit (ETU) teams on Infection, Prevention and Control (IPC) practices. This

involves designing and setting up patient flows, donning and doffing of Personal Protective Equipment (PPE), disinfection of suspects and confirmed cases, homes and training of burial teams in safe and dignified burials.

**4. Coordination:** Support has been offered by METS through the provision of airtime and mobile data to Ebola responders. In addition the METS team in the field participates in all coordination meetings.

In spite of the current effort by various partners, there is a notable gap in contact tracing which currently stands at 65% against a target of 80%. There are still challenges with internet connectivity in the region. METS will continue working with partners to resolve emerging issues.



METS was one of the CDC supported IT teams that met to plan on how to network the area to enable internet access from the Ebola Treatment Units to the Local Governments to support surveillance efforts



Training for VHTs at Ntungamo Public school in Kibalinga Sub-County, Mubende District. The training will equip the VHTs with knowledge and skills to help them conduct contact tracing.

#### GALLERY



R-L: Jennifer Ward (Data Science and Informatics Branch Chief CDC), Enos Sande (CDC HIS), Crispus Bwambale (IT Mildmay), Alex Mirugwe, Milton Kaye, Sharon Abowe (METS Data Science &Informatics Team) paid a courtesy call to the CAO Mubende District, ahead of the ICT work to support Ebola response in the district

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Daily briefing of the DHT and sub County supervisors. Briefing the supervisors of contact tracers on contact line listing, supervision of VHTs





Milton Kaye (R) guiding set up of a UNIFI Mesh Pro access point, to be able to extend internet coverage to the areas that are being used for communication pertaining to Ebola



CDC-NCD TDY field visit to Namayumba HCIV in Wakiso District aimed at assessing Non-Communicable Diseases (NCD) integration into HIV care program implementation processes to inform recommendations for improved outcomes. Representatives from MOH, CDC Uganda and Maks - METS joined the CDC TDY team to conduct this assessment in five selected facilities.



Clement Ssengonzi , IT Officer at Makerere university Joint AIDS Program (MJAP) Eastern Central Local Partner Health Services, receiving networking equipment from Abert Mugisha for approximately 65 Health Facilities they support across the country



METS team engages the IDI and staff teams at Kawaala HCIV in Kampala district during the Key Population Service Quality Assessment that was conducted in 37 health facilities in 13 districts.



METS together with Ministry of Health participated in a two-week workshop, 12-23 September 2022 in Jinja to finalize the Health Information Exchange (HIE) and Health Information Security, Privacy and Confidentiality (HISPC) Guidelines for Uganda



METS team with staff at the Fort Portal Regional Referral Hospital during a Data verification and mentorship exercise for Voluntary Medical Male Circumcision (VMMC) held on 12<sup>th</sup>-23<sup>rd</sup> September 2022 in 72 sites across the country

METS team participated in a workshop with IDI, JCRC hosted by Vantage Communications on leveraging Artificial Intelligence / Machine Learning to improve the efficiency of delivery of HIV patient care



METS team in Masaka during the PMTCT QI collaborative which focused on improvement of the programme efficiencies including diagnosis and linkage of clients, retention, adherence to the regimens, support during the breastfeeding period, among other indicators



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