Mainstreaming COVID-19 Vaccination Data in Uganda: Challenges and Solutions
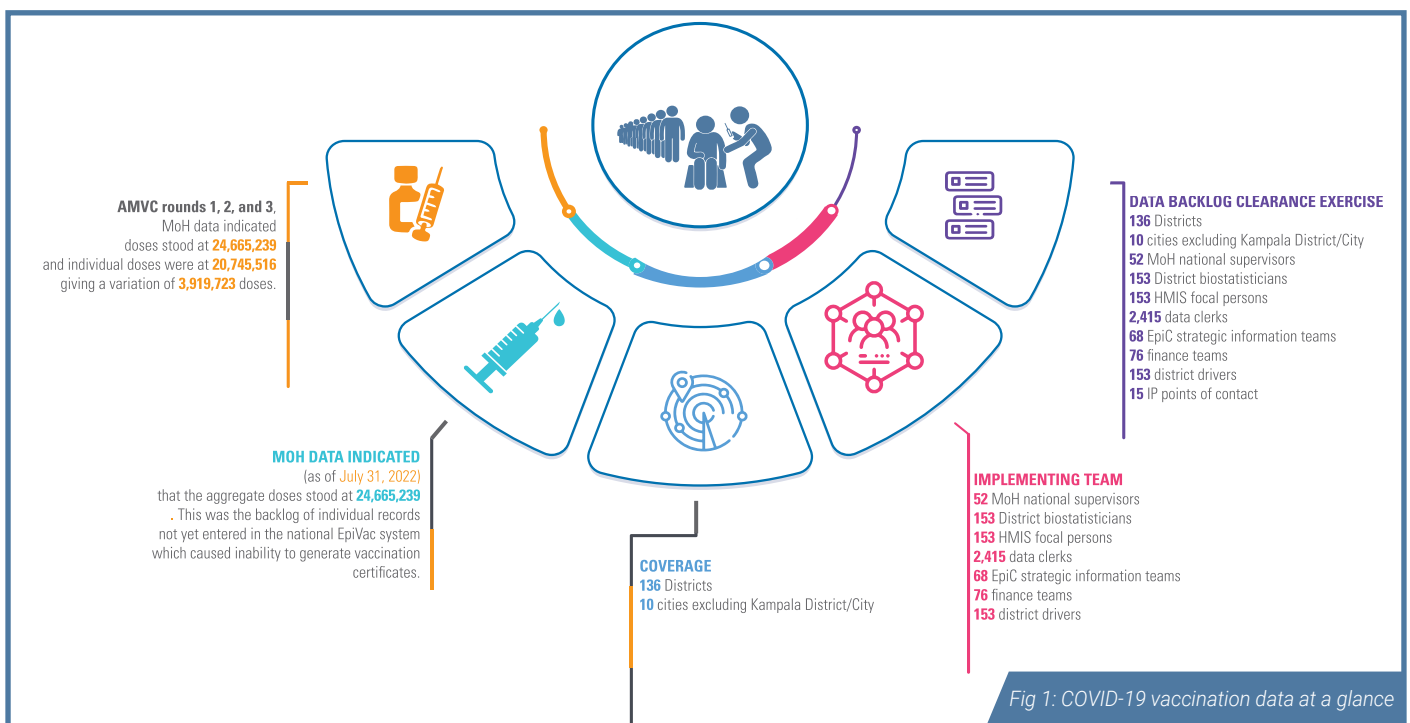
COVID-19 vaccination has faced challenges in data documentation as part of Uganda's national response to the pandemic. The challenges are characterized by, among others, the failure to correctly capture names, dates, and other biodata of the clients vaccinated, and failure to instantaneously enter vaccination data in the EpiVac national system.

EpiVac is the national COVID-19 online data management system. It is the official online public COVID-19 vaccination certificate and verification platform. Once an individual has had their COVID-19 vaccine doses, their data is entered into the EpiVac system so that the Ugandan government

can issue a vaccination certificate that confirms that they have been vaccinated. An individual can generate their vaccination certificate by entering their identification number and the last six (6) digits of their registered telephone number they used during vaccination. Once the details match those entered in the system, a certificate is generated and downloadable as a PDF file that one can directly print or save electronically. This certificate is proof of vaccination that can be presented upon request.

The Ministry of Health (MoH)/Uganda National Expanded Program on Immunization (UNEPI) introduced COVID-19 vaccination in March 2021. Following Accelerated Mass Vaccination Campaign (AMVC) rounds 1, 2, and 3, MoH data indicated (as of July 31, 2022) that the aggregate doses stood at 24,665,239 and individual doses were at 20,745,516, giving a variation of 3,919,723 doses. This was the backlog of individual records not yet entered in the national EpiVac system which caused inability to generate vaccination certificates.
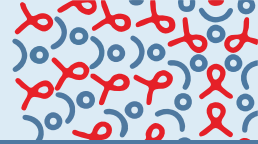
The missing or incomplete documentation has affected the accuracy of the number of people vaccinated against COVID-19 and accountability for the vaccines used in the EpiVac system.

It is against this background that Meeting Targets and Maintaining Epidemic Control (EpiC) Uganda, in collaboration with MoH, Health Information Systems Program (HISP) Uganda, Shifo Foundation, the USAID

AMVC rounds 1, 2, and 3, MoH data indicated doses stood at **24,665,239** and individual doses were at **20,745,516** giving a variation of **3,919,723** doses.

MOH DATA INDICATED (as of July 31, 2022) that the aggregate doses stood at **24,665,239**. This was the backlog of individual records not yet entered in the national EpiVac system which caused inability to generate vaccination certificates.

COVERAGE
136 Districts
10 cities excluding Kampala District/City

DATA BACKLOG CLEARANCE EXERCISE
136 Districts
10 cities excluding Kampala District/City
52 MoH national supervisors
153 District biostatisticians
153 HMIS focal persons
2,415 data clerks
68 EpiC strategic information teams
76 finance teams
153 district drivers
15 IP points of contact

IMPLEMENTING TEAM
52 MoH national supervisors
153 District biostatisticians
153 HMIS focal persons
2,415 data clerks
68 EpiC strategic information teams
76 finance teams
153 district drivers

Fig 1: COVID-19 vaccination data at a glance

Mission, Uganda Health Systems Strengthening (UHSS) Activity, the regional implementing partners (IPs), and key stakeholders supported the countrywide backlog clearance activity from September 7 to 30, 2022.

The aim of the activity was to support the MoH through the districts to enter aggregate and individual-level data into the EpiVac national system. The activity improved the quality of COVID-19 data through data entry, data cleaning, hands-on mentorship, and supervision. The expected outcome is reliable national vaccination coverage statistics, accountability for vaccines used, and ease of certificate generation for the clients vaccinated.

Data backlog clearance exercise

The activity covered 136 districts and 10 cities excluding Kampala District/City since it was covered by another IP. Various teams were deployed across the country to carry out the activity, which took 10 to 20 days, depending on the

68 EpiC strategic information teams, 76 finance teams, 153 district drivers, and 15 IP points of contact were involved in executing the data backlog clearance activity. The EpiC strategic information teams and MoH national supervisors supported the district data management teams to verify and track progress of entered data and ensure its quality.

How backlog clearance was done

EpiC jointly planned and deployed with MoH, regional IPs and Shifo Foundation teams on modalities of data backlog clearance and cleaning. The teams jointly verified and tracked the progress of entered data and held weekly feedback meetings to monitor the progress.

Prior to field deployment, EpiC data management personnel downloaded daily aggregate summaries and individual data from the EpiVac system. This data was segregated into date of vaccination, vaccinating health facility, and district. The resultant district data was aggregated into

Data clerks entering COVID-19 vaccination data in Jinja District during the data backlog clearance activity in Semptember 2022.

backlog volume per district. EpiC supported joint district specific planning through regional IPs in collaboration with Shifo Foundation, and MoH supervision teams on modalities of backlog clearance and COVID-19 vaccination data verification and cleaning.

Fifty-two (52) MoH national supervisors, 153 district biostatisticians, 153 HMIS focal persons, 2,415 data clerks,

regions in easy to navigate Excel files. These files assisted the data teams to identify which health facilities and dates were contributing to the backlog and which clients had duplicate entries that needed cleaning.

Bernard Wako, Health Sub-district HMIS focal person for Busiro South in Wakiso District said: *"Thanks to EpiC and the biostatistician for creating a way of facilitating entry of*

data. I can say that all the available register data was done by the Busiro South team. This time EpiC has done great."

Key takeaway messages

It is essential to build the capacity of the data clerks and the district data teams to effectively own the data management processes for sustainability. Refresher training and mentorship on Smart Paper Technology (SPT) data entry, capture and cleaning before the implementation of the activity could give the districts a head start.

Though SPT represents an opportunity for effective and real-time COVID-19 vaccination data entry of individual records, there are still challenges pertaining to the capture and flow of the information. Therefore, MoH needs to develop SOPs and guidelines in regard to data capture and flow to improve the quality and timelines of individual data uploaded in the EpiVac using SPT to reduce backlog. MoH and partners need to strengthen the capacity of district and health facility data teams on the use of SPT in data capture.

Data clerks entering COVID-19 vaccination data in the EpiVac national system at Mbarara Municipality Health Centre IV in September 2022