Evaluation of the HIV Early Infant Diagnosis and Viral Load Laboratory Hub Logistics Management in Uganda

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Background: HIV early infant diagnosis (EID) and viral load (VL) laboratory logistics include sample collection, transportation, and point-of-care testing materials for HIV diagnosis and VL monitoring. Central Public Health Laboratories (CPHL) in Uganda distributes laboratory logistics to requesting health facilities nationwide via a hub system. To hasten processing, CPHL recommended transition from manual to electronic ordering of laboratory logistics via the electronic inventory management system (eIMS). We evaluated eIMS utilization and lead time (time from ordering to receiving logistics, targeted at <1 week) for HIV EID/VL laboratory logistics in Uganda.

Methods: We sent an online questionnaire to all 100 hub coordinators to collect quantitative data on utilization of eIMS; HIV EID/VL laboratory logistics lead time, and challenges with laboratory logistics management. We conducted key informant interviews (KIIs) with four CPHL logistics officers to identify challenges experienced with laboratory logistics management. Data were analysed in Excel and thematically.

Results: Fifty-three (53%) hub coordinators completed questionnaires. Of these, 42 (79%) reported using eIMS for ordering, while 11 (21%) used other platforms. Forty-four (83%) reported a lead time of <1 week, five (9%) a lead time of ≥1 but <2 weeks, and four (8%) a lead time of ≥2 weeks. During June-December 2022, 34 (64%) experienced HIV EID/VL logistics stockouts, 22 (42%) experienced delays in responding to online orders by CPHL, and 10 (19%) received near-expired supplies. KIIs revealed stockouts of HIV EID/VL logistics at CPHL stores, understaffing leading to delays in processing orders, and delayed delivery by manufacturers as the major factors contributing to stockouts at hubs.

Conclusion: Of the hubs that participated, the majority order through eIMS and receive supplies in time. However, some challenges still exist in the use of eIMS, response time by CPHL, and delay in approval of orders from vendors. Addressing these gaps may reduce stockouts and improve timely logistics delivery to hubs.

Key words: HIV EID/VL, laboratory logistics management, Hub System, Uganda

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