Impact of Electronic Information Systems on HIV Service Delivery in Zambia

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Issue
The Zambian Ministry of Health faced many challenges in managing procurement and distribution of medical products and supplies. Long lead times, stockouts, and general inefficiency characterized the in-country supply chain.

Description
Beginning in 2014, the Strengthening High Impact Interventions for an AIDS-free Generation (AIDSFree) Project, funded by the U.S. President’s Emergency Plan for AIDS Relief through the United States Agency for International Development, worked with the Zambian government to pilot and scale up an electronic Logistics Management Information System (eLMIS). This open-source supply chain software facilitates logistics data collection in low-infrastructure environments for review, aggregation, analysis, and forecasting by incorporating medical records and laboratory data, and enabling data visibility from the point of origin to the point of delivery. The eLMIS has been deployed to five countries in addition to Zambia: Tanzania, Malawi, Mozambique, Guinea, and Côte d’Ivoire.

Results
• Improved and sustained reporting rates. Reporting across all four program areas remains above 90%, even with newly implemented facilities as of Sept. 30, 2017

![Average Reporting Rates (Apr.-Sept., 2017)](image)

- 97% Medicine
- 97% Equipment
- 66% Laboratory

• Improved product availability

![Percentage of Product Availability at Service Delivery Point](image)

- 98% Medicine
- 95% Equipment
- 94% Logistics

• Data entry reduction at the Commodity Security Center

![Commodity Security Center Data Entry Workload (Last 12 Months)](image)

- 500 Data Entry
- 1,000 Data Entry
- 1,500 Data Entry
- 2,000 Data Entry
- 2,500 Data Entry
- 3,000 Data Entry
- 4,000 Data Entry

Benefits of eLMIS
- Generate cost savings by eliminating books and couriers
- Simplifies data gathering, reporting, and authorization through commodity integration
- Improves data quality and timeliness
- Increases accountability by improving data visibility to manager
- Reduces workload for health facility staff and logisticians
- Provides access to real time and historical data for more informed decision making
- Can adapt to changes in existing and future logistics systems
- Developed to interface with other e-tools supporting health initiatives

Lessons Learned
The eLMIS has enabled Zambia to achieve measurable improvements in logistics management:
• Broader involvement of user groups in data update and use
• Visibility of supply chain operations to all stakeholders
• Increased throughput of health commodities
• Improvements in health care service delivery
  - Reduction of waste—overshoots are monitored and redistributed
  - Reduction in missed treatment opportunities—better adherence
• Improved capacity to support the World Health Organization’s universal test and treat strategy, furthering the 90-90-90 goals set forth by the Joint United Nations Programme on HIV/AIDS; increase in use of HIV test kits by 141%
• Increase in key antiretrovirals being dispensed to users by 254%
• Reduction in supply chain supervision costs
  - Timely intervention in supply chain problems: targeted supervision visits conducted to easily identifiable problem sites based on insights from data
  - Lower monitoring and evaluation costs from routine data that are reliable, available, and accessible
  - More cohesive experience among implementing partners leading to improved quality and lower costs

Pharmacist Tibalenge Mwanza uses the eLMIS at Chilenje Level 1 Hospital in Lusaka

Next Steps
Electronic information systems require allocation of resources and time to achieve sustainability and attain the full change management maturity model. Despite Zambia’s advances, some challenges persist. There is a need to continue cultivating reliance on data for decision-making. Data are widely used to guide procurement and decisions on routine operations, but not yet used for supervision and policy development. The technology and implementation experience from Zambia will benefit all neighboring countries grappling with similar challenges.

Completed and Rollout Facilities with eLMIS Facility Edition

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