AIDSFree Zambia

Duration of Activity: October 2016–December 2019   **Life of Project Funding:** $14.6 million

AIDSFree enabled a transition from a paper-based system of data management to an electronic format to foster better, faster, and more accurate reporting of supply chain data and reduce stockouts of health commodities.

AIDSFree Zambia deployed electronic logistics management information system (eLMIS) at facility and district level to improve logistics data management for increased product availability to patients. The project worked to increase logistics data use for decision-making, improve commodity security, and create a robust integrated data repository that interfaces with other health systems.

Technical Approach & Key Activities

Increasing Use of Logistics Data

eLMIS facilitates faster application and access of data analytics at each level of the health system. This in turn prevents stockouts of HIV test kits, essential medicines and other HIV health products to reduce new HIV infections and increase recruitment and retention of HIV-positive clients on ART. AIDSFree focused on building the capacity of Ministry of Health (MOH) managers at central, provincial, and district levels to use the eLMIS to monitor the supply chain; identify supply chain problems; develop action plans to remedy these challenges; and improve the supply chain to provide consistent product availability.

Strengthening Organizational Structures

Electronic information systems require allocation of resources and time to achieve sustainability and attain the full change management maturity model. AIDSFree worked to build organizational structures

AIDSFree Zambia Objectives

- Ensure that the eLMIS acts as an integrated data repository to provide a data entry module for logistics reports and other routine logistics data.

- Deploy eLMIS at facility and district levels to improve logistics data management at facility, district, and provincial levels.

- Increase use of logistics data for key decision-making for continuous improvement of supply chain performance to meet patient demand and attain 95-95-95 targets.

- Develop a plan for sustained use of eLMIS as a national commodity management system in Zambia.

- Ensure easy-to-use interfaces for operations and support personnel for key decision making and improvement of commodity security.

that underpin successful electronic data systems through on-the-job trainings at eLMIS sites and joint field visits with MOH counterparts to identify common problems and develop solutions to be shared nationwide. The project established a customer service center that provides ongoing remote support to eLMIS users where a team of MSL staff provides *Tier 1* system administrative support. Issues that Medical Stores Ltd. (MSL) staff cannot resolve are escalated to the helpdesk. The eLMIS server is hosted locally at the Zambia National Data Center (ZNDC).

Using eLMIS to enter data from the ARV Daily Activity Register at Twalumba Health Center.

Meeting End User Needs

AIDSFree emphasized a collaborative approach to identify, define, and prioritize key enhancements to ensure that the software continues to meet end-user needs including adding user-driven enhancements (such as reports and alerts) into the eLMIS software. Rapid scale-up also increased the need for sustainable support systems. AIDSFree responded quickly to this need by embracing WhatsApp, a mobile messaging app that enables groups of Zambian eLMIS users to support one another using peer-based approaches—enabling them to chat daily to exchange information, help one another with reporting, and redistribute products as needed among neighboring facilities.

Achievements

AIDSFree enabled a transition from a paper-based system of data management to an electronic format to foster better, faster, and more accurate reporting of supply chain data and reduce stockouts of health commodities. With AIDSFree support, the MOH and MSL are able to access eLMIS Central Edition (CE) benefiting 2,600 health facilities nationwide. The Facility Edition (FE) has been installed at 379 health facilities as of June 2019.

The eLMIS has enabled Zambia to achieve measurable improvements in logistics management including broader involvement of user groups in data update and use and visibility of supply chain operations to all stakeholders. Improvements in health care service delivery have resulted in reduction of waste—overstocks are monitored and redistributed. There has also been a reduction in missed treatment opportunities and better adherence. Zambia has also improved its capacity to support the WHO's *universal test and treat* strategy, furthering the 95-95-95 goals with an increase in use of HIV test kits. eLMIS has also resulted in a reduction in supply chain supervision costs through timely intervention in supply chain problems; lower monitoring and evaluation costs from easily accessible routine data; and a more cohesive experience among implementing partners—leading to improved quality and lower costs. Overall, the eLMIS has contributed to near universal reporting, reduced reporting times to a

single day (versus 15 days pre-eLMIS), increased product availability, and reduced the incidence of emergency ordering to less than 4 percent.

The MOH has adopted eLMIS as Zambia's official electronic logistics management information system. In building sustainability, the ministry has independently deployed eLMIS to 24 sites without AIDSFree assistance. Additionally, the project trained 64 lecturers as trainers on the nursing school curriculum that now includes the use of eLMIS. To support and sustain use of the eLMIS, AIDSFree developed and pilot-tested an eLearning module and the MOH updated the sustainability plan.

Challenges, Responses & Looking Forward

The implementation of an automated health logistics information management system did not come without its challenges. AIDSFree Zambia had to tackle significant drawbacks in accomplishing automated logistics of high volume health facilities, covering 80 percent of the country's medical consumption. The main challenges included:

Competing Systems: Over the years, a variety of software from different donors has been introduced to cater for different aspects of health care. Sustaining automation has required continued donor collaboration and MOH support. One such collaboration is the SmartCare-eLMIS interface. The two software overlapped in the dispensary and this was resolved by enabling the applications to share data with one another so that users do not have to enter data into two separate systems.

Power & Network: The power and network infrastructure hindered system implementation. Parts of the country are not connected to the national power grid, experience excessive load shedding, or do not have internet connectivity—eLMIS could not be deployed to some facilities. To partially mitigate this challenge, AIDSFree provided back-up power sources, such as power inverters, to facilities that experience excessive load shedding.

System Adoption: The MOH adopted eLMIS as the national electronic logistics system in 2018. Before that, there were competing systems within the supply chain. Only after the adoption and the MOH issuing directives was the system accepted at all levels from users to top management, and then enhancements were made and a sustainability plan developed.

Zambia's health logistics system has undergone significant strides in achieving end-to-end automation. The implementation of eLMIS has created a more efficient, accessible and accurate logistics management system. In order to solidify the automated system, eLMIS will require continued stakeholder collaboration and sustainability. This will foster better practices and automate the supply chain at all levels of the public health system. Continued investment will ensure the system grows—adapting to the population and general health requirements.

Data Snapshot

The ultimate goal of any successful supply chain is to ensure commodities are available for clients. The eLMIS FE sites have proven to have over 15 percent more commodities available than sites still using the paper-based system as illustrated in the figure below.

Figure 1. Commodity Availability (FE and Non-FE Sites)
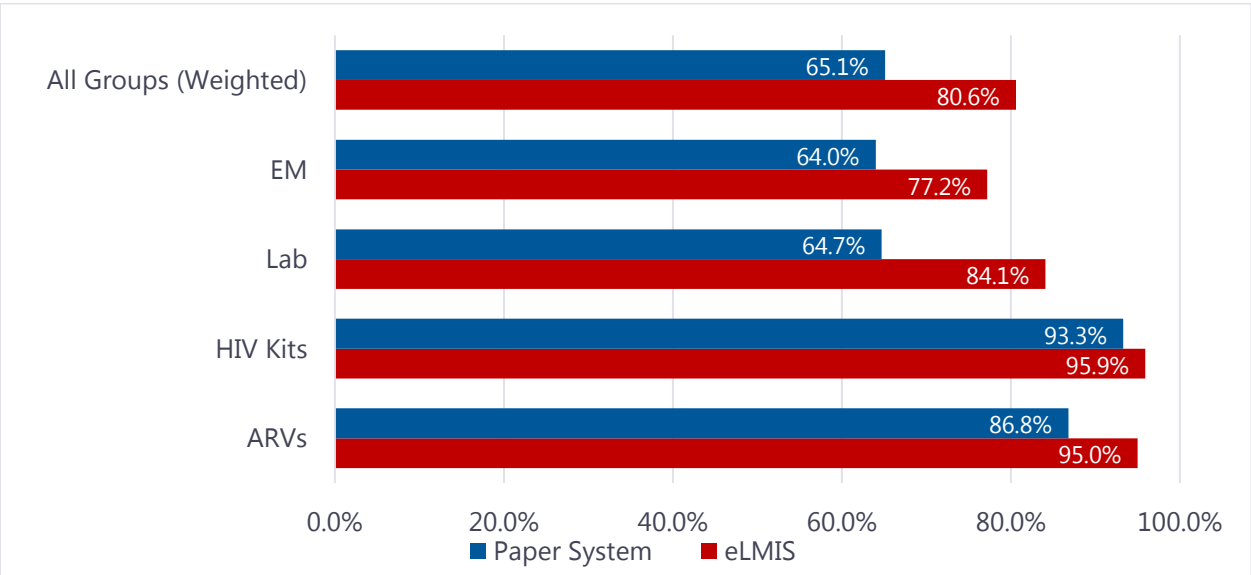
Over the life of the project, reporting by facilities with eLMIS FE has continued to increase from an average of 53 percent in 2016 to over 80 percent in 2019. Facilities with eLMIS FE have maintained reporting above the target of 80 percent, while the number of facilities deployed with FE that are using eLMIS Central Edition to report continues to decline. AIDSFree provided technical support and supervision to facilities that encountered difficulties with FE. Proactive support ensured the system was maintained and used at optimal levels.

Figure 2. Reporting Rates for eLMIS
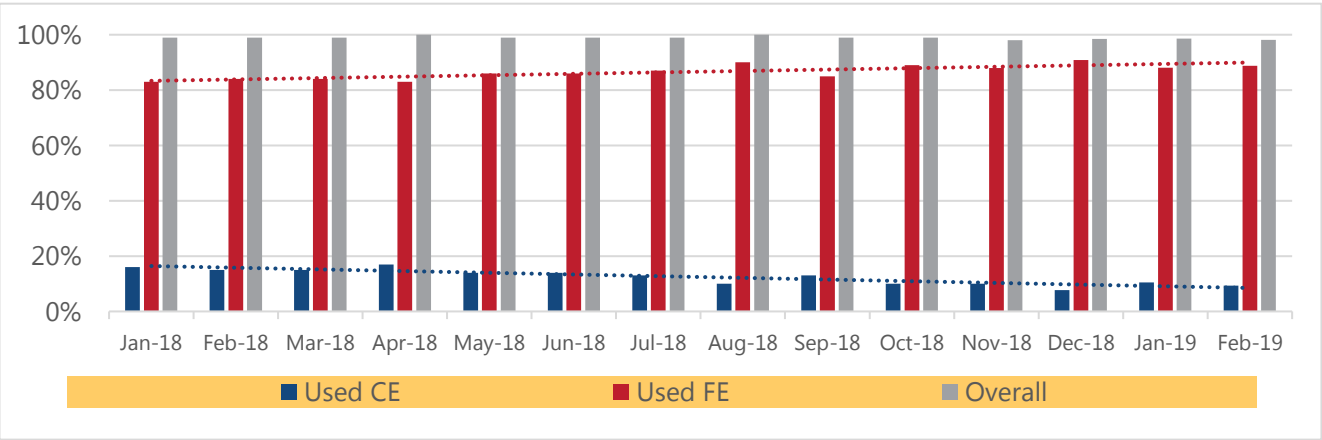
The stock status at service delivery points in all project areas increased and the ratio of expiries-to-consumption decreased to 0.3 percent (Figure 4). This demonstrated the impact of automated inventory management—health facilities are now able to efficiently manage their logistics.

Stock Status and Expiries

Figure 3. Average Percentage of Product Availability by Program
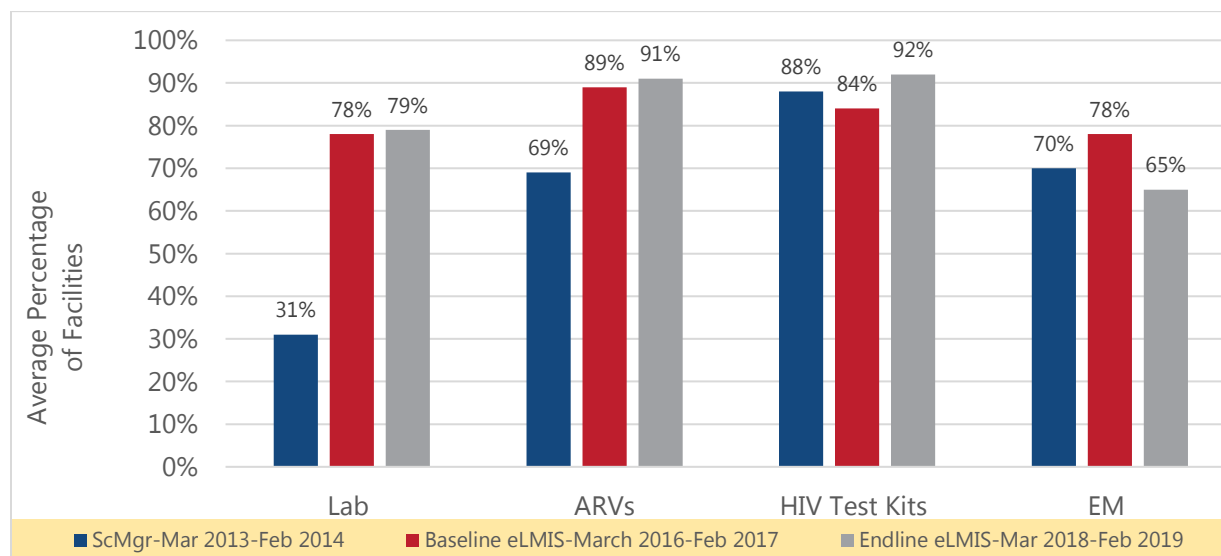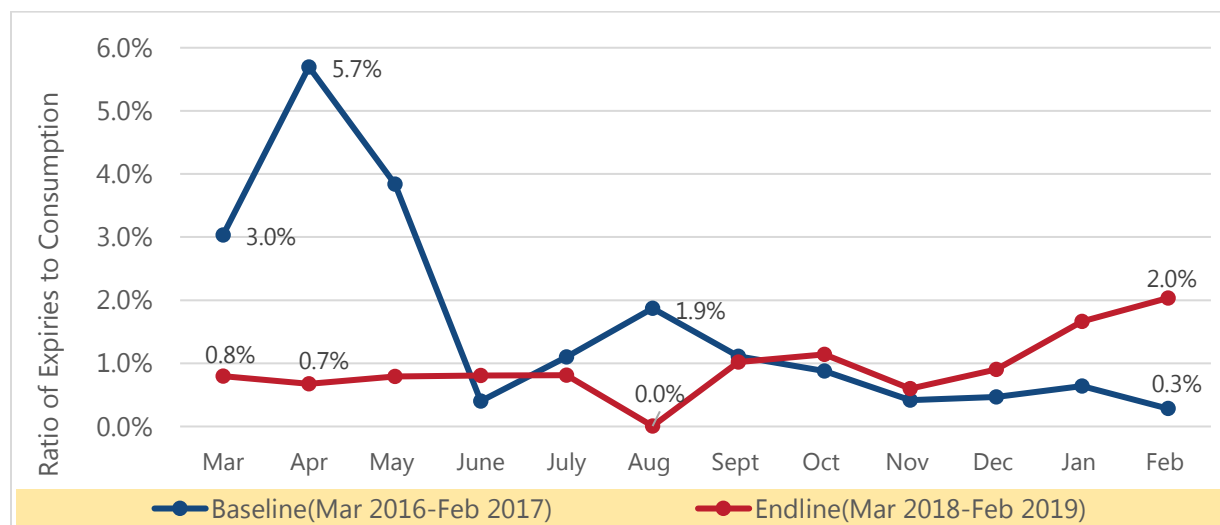

Figure 4. Aggregated Ratio of Expiries to Consumption

Related Resources

Zambia Electronic Logistics Management Information System Evaluation Report

eLMIS: A Supply Chain Becomes a Lifeline

Impact of Electronic Information Systems on HIV Service Delivery in Zambia