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PROJECT YEAR I

2020

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ACRONYMS:

AIDSFree Project	Strengthening High Impact Interventions for an AIDS-free Generation Project
CCB	Change Control Board
CE	Central Edition
CHAZ	Churches Health Association of Zambia
eLMIS	Electronic Logistics Management Information System
eSCMIS	Electronic Supply Chain Management Information System
FE	Facility Edition
GRZ	Government of the Republic of Zambia
IMPACT	Information Mobilized for Performance Analysis and Continuous Transformation
IR	Intermediate Result
JSH	John Snow Health Zambia Limited
JSI	John Snow, Inc.
M&E	Monitoring and Evaluation
MEL	Monitoring, Evaluation, and Learning
MOH	Ministry of Health
MOU	Memorandum of Understanding
MSL	Medical Stores Limited
OJT	On-the-job training
PPP	Public-Private Partnership
SO	Strategic Objective
TCO	Total Cost of Ownership
UNZA	University of Zambia
USAID	United States Agency for International Development
ZHAP	Zenysis Health Analytics Platform

EXECUTIVE SUMMARY

The first year of the USAID Electronic Supply Chain Management Information System (eSCMIS) project, implemented by John Snow Health Zambia Limited (JSH),¹ has been characterized by project setup and transition, system assessments, the provision of technical support, and the implementation of enhancements to the Electronic Logistics Management Information System (eLMIS). The eSCMIS project is mandated to transform the eLMIS into a next generation eLMIS, working collaboratively with the Ministry of Health (MOH), Medical Stores Limited (MSL), the Churches Health Association of Zambia (CHAZ), and other key supply chain partners. The Government of the Republic of Zambia (GRZ) has fully embraced the eLMIS as the national logistics management information system. This is supported by a favorable public policy environment that makes e-health systems a priority, as established in the National Health Strategic Plan (2017–2021), the eHealth Strategy (2017–2021), and the Health Sector Supply Chain Strategy (2018–2021).

The project envisions eLMIS as a state-of-the-art, open-source digital platform that provides end-to-end, real-time supply chain visibility to support improved decision-making, accountability, fiscal responsibility, and local ownership. The longer-term eSCMIS outcomes are a more efficient and sustainable supply chain, a more effective health system, and better health outcomes.

eSCMIS project start-up included transitioning activities from the AIDSFree project to eSCMIS. As most eSCMIS activities require both travel and in-person meetings, the onset of the COVID-19 pandemic in March led to the postponement of a significant number of project activities. This has caused delays in meeting several project targets.

Notwithstanding COVID-19 restrictions, the project has adapted its FY2020 work plan and achieved many of its objectives. This includes laying the foundation for rapid deployment once travel restrictions are lifted, conducting a countrywide system assessment to gather requirements for system enhancements, migrating 151 eLMIS Facility Edition (FE) sites from version 3.8 to 4.1.0, implementing key strategies in the eLMIS Sustainability and Transition Plan, and strengthening strategic collaborations with implementing partners such as CHAZ.

¹ The company is registered as Coalition Health Zambia Limited. Its trading name is John Snow Health Zambia Limited.

BACKGROUND

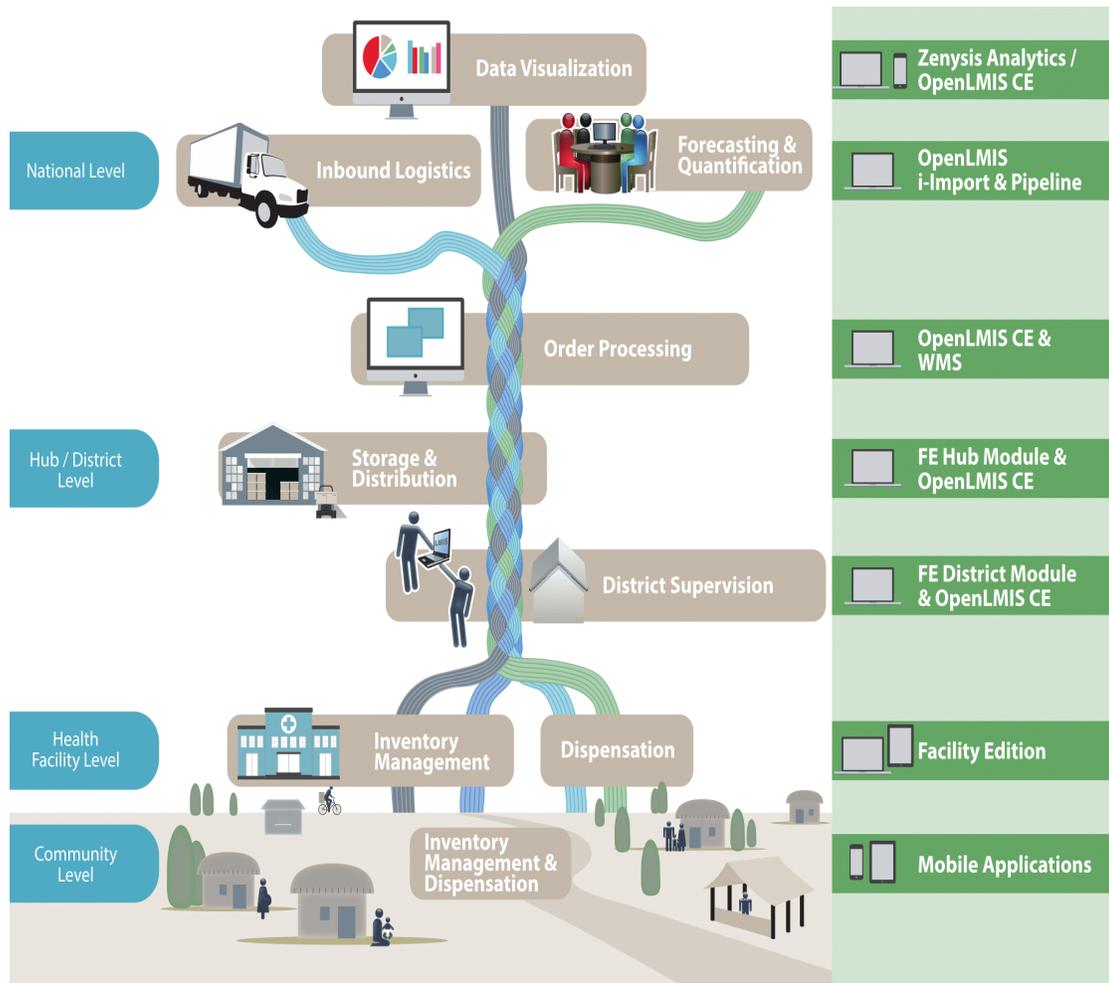
Beginning 2014, GRZ, USAID, and JSI (through the USAID | DELIVER PROJECT and Strengthening High Impact Interventions for an AIDS-free Generation—AIDSFree) have rolled out a nationwide eLMIS that covers all 2,600 GRZ’s health facilities, with over 600 facilities fully computerized and using the eLMIS FE. While the Ministry of Health (MOH) and its partners have tested numerous systems over the years, they selected eLMIS due to its user-centered design, functionality, performance, scalability, and sustainability.

In 2018, AIDSFree completed an evaluation of the eLMIS that showed significant performance improvements. Key findings included improvement in reporting rates by an average of 6.8 percent since eLMIS deployment, overall commodity availability improvement of 17.8 percent, and reduced product expiration. Several opportunities for future improvements were identified, including moving to “real-time” stock visibility, integrating with SmartCare, rapid deployment of FE to every site, increasing MOH managers’ use of eLMIS for supply chain decision-making, and implementing additional data quality validations. Through the AIDSFree project, JSI began addressing these findings, but more remains to be done, such as the rollout to all health facilities in the country, additional improvements in data quality validations, and the continued rollout of SmartCare integration.

In January 2019, the MOH communicated to all partners that eLMIS had been selected as the national electronic logistics system, indicating GRZ’s commitment to sustaining and using this system. The existing system would serve as the foundation for the next generation of eLMIS.

Figure 1 illustrates eSCMIS’s vision, with the health system levels in blue on the left, the functions of the supply chain in grey in the middle, and the supporting components of the eLMIS in the green column on the right.

Figure I. End-to-End Supply Chain eLMIS Business Process



INTRODUCTION/SCOPE



The eSCMIS project was launched on January 14, 2020. The project has successfully transitioned from AIDSFree, with a majority of eSCMIS project staff onboard. In March 2020, all project staff commenced working from home, following JSH's guidelines. As the project's start-up coincided with the onset of the COVID-19 pandemic, many FY20 work plan activities were halted, resulting in postponements or alternative implementation approaches. Project activities were prioritized with guidance from USAID and the MOH.

At the onset, the eSCMIS project held meetings with the MOH and key partners to introduce the project and its mandate, while continuing to support the existing 624 eLMIS facility edition (FE) sites nationwide. On May 4, 2020, MOH Permanent Secretary for Technical Services, Dr. Kennedy Malama, sent an introductory letter to all provincial and district offices, reaffirming the importance of supporting the implementation of eSCMIS activities in all provinces and districts.

The project has since conducted a nationwide systems assessment in conjunction with MOH leadership, and continues collaborating with the MOH to identify additional target health facilities for deployment of eLMIS FE. The systems assessment was largely conducted by MOH staff, who traveled to all of the provinces to organize and lead assessment meetings. The project also arranged for MOH staff and district and facility level eLMIS champions² to participate in technical support activities.

Based on assessment results, the eSCMIS software development team has begun implementing enhancements to ensure that MOH and supply chain stakeholders can make data-driven decisions. To facilitate the future transfer of eLMIS implementation support and maintenance to GRZ, the project developed a Sustainability and Transition Plan, which has been approved USAID and by the Permanent Secretary of the MOH. Accordingly, the MOH will assume leadership for most project activities by September 2023 and full ownership of key responsibilities for eLMIS implementation and support by January 2025.

eSCMIS's initial work plan contained a set of deliverables that contribute to achieving the project's objectives, including implementation of the next generation eLMIS, facilitating supply chain staff to make data-driven decisions, and enabling the government to take full leadership of the system. Despite challenges brought on by the pandemic, the project has adapted its approach to achieve

² An eLMIS user is defined as a user who has been trained in eLMIS use; an eLMIS super user is defined as a user who is able to provide some key support to eLMIS users; and an eLMIS champion is defined as a user who is fully competent in all support and deployment of eLMIS and can do this work independently of the project.

a good number of deliverables and lay the foundation for others. Below is an outline of activities undertaken during FY20 to achieve the project's objectives.

INTERMEDIATE RESULT (IR) I: IMPLEMENTATION OF THE NEXT GENERATION eLMIS

Building on eLMIS successes attained in the previous three years, eSCMIS is mandated to create the next-generation eLMIS by enhancing the system and scaling up deployment to more health facilities, while supporting and migrating current eLMIS FE sites to the latest version of the software. The COVID-19 pandemic has posed the biggest challenge to completing project deliverables, resulting in an adapted work plan that emphasizes implementing as many activities as possible while adhering to COVID-19 restrictions, including the travel ban. In FY20, the project focused on several major activities, such as conducting assessments to inform system upgrade requirements, laying the foundation for rapid deployment of the software, and migration of 151 sites from eLMIS FE version 3.8 to 4.1.0, while also supporting all eLMIS FE sites.

FY20 Planned Interventions

The work plan for 2020 identified interventions the project would undertake to meet deliverables that align with achieving project objectives. For system implementation, these interventions included:

- Conduct a full systems assessment to gather information on all systems requirements for enhancements and upgrades to eLMIS.
- Continue to incorporate outstanding enhancements identified during AIDSFree into eLMIS.
- Deploy eLMIS FE to an additional 150 new health facilities.
- Update existing eLMIS FE sites from version 3.8 to the latest version 4.
- Provide technical support supervision to the existing 624 eLMIS FE sites.
- Establish the Monitoring, Evaluation, and Learning (MEL) Plan, and provide continuous monitoring and evaluation to learn and adapt to challenges and opportunities.

Key Accomplishments

System Assessment

To envision a next-generation eLMIS, the project conducted a needs assessment of eLMIS system requirements in all ten provinces. This activity was led by the MOH, with the project providing remote support. The project was able to collect 645 new system requirements, using key functional domains and business processes as guidelines.

Enhancements

Based on the consolidated list of enhancements carried forward from AIDSFree and the system assessment conducted in FY20, the project developed and deployed enhancements to the eSCMIS software suite. Table I below summarizes the enhancements completed in FY20 for eLMIS Central Edition (CE) and eLMIS FE.

Table 1: System Enhancement Summary by Level³

System Type	Enhancement/Feature	Description
eLMIS Central Edition	1. Split of Covid-19 program areas	Split pharmacy and lab programs for improved management.
	2. Enhancement of admin role	Enables users to create new program areas without software developers.
	3. Enhanced emergency order analysis	Summarizes emergency orders by geographic region within a specific time by each program area.
	4. New adjustment types	Includes recalled, quarantined, and unquarantined adjustment types in the system.
eLMIS Facility Edition	1. Laboratory equipment module	Facilitates tracking of laboratory equipment functionality and the collection of test numbers used for forecasting and quantification.
	2. HIV internal monthly summary report (IMSR)	Includes a summary of tests done by purpose and type of test used (i.e., Determine, Oraquick, or SD bio-line)
	3. HIV daily activity register (DAR)	Includes test results for self-testing using Oraquick test kits
	4. Enhancement of Transfer in/out adjustment	Allows users to complete Province, District, and Facility fields while restricting mapping to facility-approved programs

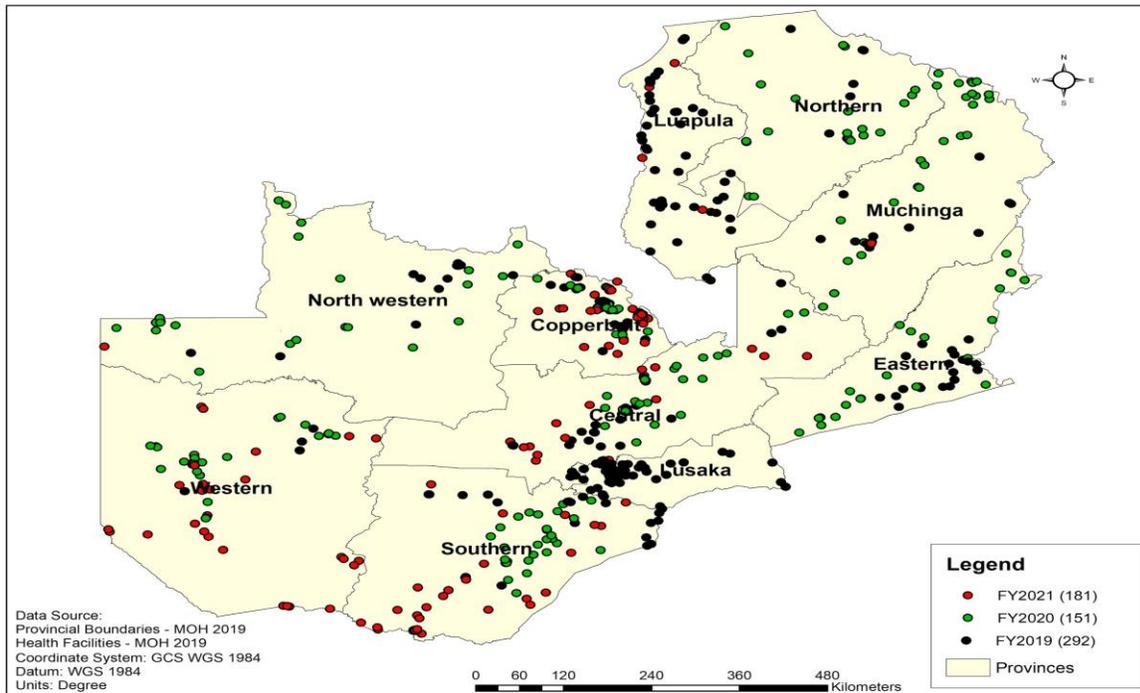
ELMIS FE Deployment and Upgrades

Due to COVID-19 restrictions, the project could not begin deployment of eLMIS FE to new sites in FY20. Instead, eSCMIS opted to lay the foundation for rapid deployment once travel bans are lifted and to enhance the MOH's capacity to deploy and sustain the system. The project initiated procurement of equipment for deployment to 1,000 health facilities, delivery of which was partially delayed due to pandemic restrictions. With the aid of the MOH, eSCMIS has begun identifying new facilities for eLMIS FE deployment as well as provincial MOH staff with the technical know-how to support deployment. The project has identified 636 target facilities for FY21 deployment (from the life of project target of 1,200). The project has engaged 40 MOH champions to upgrade facilities from eLMIS FE version 3.8 to 4.1.0 and simultaneously assess other MOH staff for eLMIS skills to promote them to become eLMIS super users. With the MOH champions, the project has developed MOH capacity to support existing facilities and deploy

³ New enhancements include splitting of COVID-19 program areas, emergency order analysis and enhancement of admin role while others are carryover from the previous project.

new versions of eLMIS FE. Figure 2 below depicts the eLMIS FE sites migrated in FY19, FY20, and the sites planned for migration in FY21.

Figure 2. ELMIS FE Upgrade to Version 4.1.0



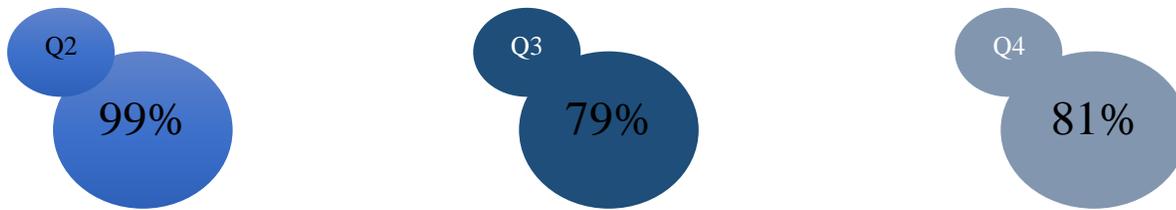
To assist MOH staff in efficiently upgrading to eLMIS FE version 4.1.0, the project provided online automated scripts for upgrading the system remotely. The project’s technical team worked remotely with MOH champions, who were physically present in their respective provinces and provided technical support, including helping facility staff to transition inventory management records to the new version. In line with the project’s capacity-building strategy for sustainability, each MOH champion from MOH headquarters, province and district health offices, and district hospitals was paired with MOH staff in the targeted districts to share skills and identify additional eLMIS super users. Despite delays from COVID-19 travel restrictions, as of September 30, 2020, 151 of 332 facilities targeted for FY20 (46 percent) have been upgraded to the latest version of the system.

Technical Support and Supervision

The project has continued providing technical support and supervision to the 624 eLMIS facilities through the eLMIS Call Center and remote support tools, including an online toll-free call center equipped with an internet-based PABX (3CX), a robust open-source customer resource management (CRM) system, and remote desktop tools such as AnyDesk and TeamViewer. For hardware equipment that could be transported from facilities for repair, the project contracted with courier services. Major software bugs or enhancement requests captured at the Call Center, logged into Jira, or observed during remote support were discussed at monthly eLMIS Change Control Board (CCB) meetings, and all partners were kept informed about the resolution call

process. Figure 3 below illustrates the percentage of call center queries resolved within the reporting month during Quarters 2, 3, and 4 of FY2020.

Figure 3. FY 20 Call Center Queries Resolved within the Reporting Month⁴



Monitoring, Evaluation, and Learning

Monitoring and evaluation (M&E) virtual visits were conducted in 9 provinces (90 percent) and 47 districts (85 percent) of the targeted 55. This included 235 health facilities of the FY 20 target of 320 (73 percent). The remaining facilities are scheduled to be visited in FY21. The project's Activity Monitoring, Evaluation, and Learning Plan (AMELP) was used to conduct desk reviews of key logistics indicators in the reporting and quality of data submitted from health facilities. Key findings of the desk reviews address such issues as:

- There were eLMIS trained staff available to support the system at each of the 235 visited health facilities
- There is notable MOH district staff involvement in technical support for the system, an important step for achieving sustainability
- The effect of prolonged power outages on electronic data capture

The project also developed a Performance Management Plan (PMP) report to be used by technical teams as part of a review of performance indicators. The findings from this report and the M&E desk review activity form the baseline for project implementation. The project has also developed and tested mobile data collection tools to be used during routine virtual M&E field visits beginning in FY21.

⁴ Q2 was not accurately captured due to limitations in the data source. During Q2- only call logs were used as a data source before the support team introduced CRM. The subsequent quarters are more accurate as calls made were triangulated with the CRM ticket and when it was closed, hence the change in the figures.

CHALLENGES

Due to COVID-19 travel restrictions, a number of planned FY20 activities were either not completed or only partially completed. For example, the project was not able to conduct deployments to new sites, migrating only 46 percent of the planned facilities to the new version of eLMIS, and was not able to complete M&E of targeted sites.

LESSONS LEARNED

The project adapted technology for continued system support and implementation of some activities, including completion of the online system assessment, which demonstrated that alternative implementation mechanisms are effective for some activities. With appropriate planning and coordination, the use of appropriate technology, and GRZ support and ownership, the project has achieved a degree of resilience during the COVID-19 pandemic.

IR 2: GRZ ABLE TO INDEPENDENTLY MAKE DATA-DRIVEN SUPPLY CHAIN DECISIONS

One of the key functions of an eLMIS is making supply chain information visible and transparent so that supply chain managers are able to make well-informed, data-driven decisions. The project plans to build and enhance the visibility and transparency of information at all levels of the supply chain, ensuring that the system is user friendly and caters to all aspects of the supply chain. eSCMIS is currently working with the USAID Global Health Supply Chain Procurement and Supply Management (GHSC-PSM) team to add reports and data visualization to the eLMIS CE.

FY20 Planned Interventions

To increase supply chain managers' ability to make data-driven decisions independently, the project planned to:

- Ensure the harmonization of different health system information systems.
- Implement a data quality validation tool through ZHAP and develop dashboards to summarize data quality indicators.
- Transform data into consumable information at all levels of the health system.
- Through the introduction of IMPACT teams, ensure that information is consumed and analyzed at all levels of the health system, decisions are made based on these analyses, and decisions are turned into action.

Key Accomplishments

The project continued work begun in the AIDSFree project to build the audit trail user interface in eLMIS CE to help monitor changes made by users, which is in line with creating a data quality validation tool. Using information gathered from the countrywide systems assessment, the project added analytical tools to eLMIS CE to enable users to pull and view dashboards and reports that have been created from Insights/Metabase.

To increase system sustainability, the project and MSL developed a plan to relocate project staff in Quarter I of FY21 to the MSL hubs countrywide to facilitate skills transfer and the transition of project activities to MOH structures. Additionally, MOH's Directorate of Clinical Care and Diagnostic Services has approved the formation of Information Mobilized for Performance Analysis and Continuous Transformation (IMPACT) teams at central, provincial, and district levels. The teams consist of supply chain staff who will work with the project to implement sustainable interventions and adopt an effective data-use culture. The project has begun collaborating with MOH provincial senior management on a strategy for implementing IMPACT teams to ensure that key stakeholder roles and responsibilities are clearly defined.

CHALLENGES

The following were put on hold pending COVID-19 restrictions being lifted: interventions on health information systems integrations, the development of dashboards to summarize data quality indicators, and the transformation of data to consumable information.

The project awaits completion of enhancements to SmartCare to continue eLMIS integration at the health facility level.

LESSONS LEARNED

The project was able to adapt to the pandemic by refocusing its work plan on attainable activities related to this objective. Through strategic partnerships and collaboration, the project was able to achieve some aspects of this objective such as approval of the IMPACT team's strategy and creation of analytical tools in eLMIS CE. Also the project was able to lay the foundation for other deliverables affected by the COVID-19 restrictions in preparation for FY21.

IR 3: GRZ ABLE TO TAKE LEADERSHIP OF ELMIS IMPLEMENTATION AND MAINTENANCE

A large part of the project strategy concerns ensuring that GRZ is able to take full ownership of the eLMIS by the end of the project. To this end, the project developed a Sustainability and Transition Plan, which was approved by the MOH in FY20. The project also launched some activities described in the plan, such as delivering eLMIS trainings in collaboration with supply chain partners. These activities were undertaken to ensure partners' collaboration in the transfer of system ownership. The project also held meetings to identify alternative energy providers and to seek electricity options for off-grid health facilities.

FY20 Planned Interventions

FY20 interventions related to sustainability and transitioning eLMIS implementation and maintenance to government leadership included:

- Update and implement the Sustainability and Transition Plan to enhance the capacity of GRZ to own and operate the eLMIS.
- Implement key activities from the Sustainability and Transition Plan.
- Identify and initiate PPP opportunities for GRZ to increase financial sustainability.
- Establish external collaboration with other donors and supporters to ensure the transition of system ownership.

Key Accomplishments

The project received approval for its Sustainability and Transition Plan from the MOH and USAID. eSCMIS intends to present the plan to the Procurement Supply Chain Management Technical Working Group (TWG) at a date to be set by the MOH, followed by dissemination to all stakeholders. The MOH's delay in announcing the date is due to the need to prioritize COVID-19-related country interventions.

The project enhanced capacity in the MOH by working hand-in-hand with MOH staff to conduct software enhancements and implementation through the Change Control Board (CCB).

To ensure that eLMIS is fully incorporated in the curricula of pharmacy schools throughout the country, the project carried out the following activities: attended and participated in a training of trainers (TOT) (i.e., "Pharmacy Lecturer's Supply Chain Management TOT) that was organized by the Pharmaceutical Society of Zambia and UNZA and supported by the GHSC-PSM; conducted virtual eLMIS orientation for 70 undergraduate and postgraduate students at the School of Biomedical Sciences at the University of Zambia, Ridgeway campus; and completed short e-Learning video tutorials for eLMIS FE modules. Should COVID-19 travel restrictions persist, it is expected that the modules will be used for remote training of staff at health facilities and tertiary training institutions.

With the goal of identifying and initiating public-private partnerships (PPPs) for the government to increase financial sustainability, the project has held meetings to identify alternative energy providers and options for providing electricity in off-grid health facilities. Potential PPP initiatives in the discussion or draft stage include Internet broadband connectivity using TV white space (TVWS), alternative electricity through solar power, environmental compliance, and e-waste disposal. Initial discussions were held with potential technology and implementing partners to plan for phase I (test implementation), and a draft list of additional partners has been developed.

To promote collaboration with other donors and supporters to facilitate the transition of system ownership, the project collaborated with two USAID-funded projects (USAID SAFE and DISCOVER-Health) to train their staff in managing the eLMIS and transitioning this knowledge to facility-based MOH staff. The project has also been holding discussions with supply chain stakeholders on redesigning the national logistics systems so that manual and electronic systems can be developed to align with current supply chain needs.

CHALLENGES

As a result of other commitments and priorities being shifted to managing the pandemic, the MOH has not been able to convene the PSCM TWG. The project continues to encourage the MOH to schedule a PSCM TWG meeting at the earliest possible date.

It was necessary to halt all sustainability and transition activities planned for FY20 that required in-person meetings.

LESSONS LEARNED

By allowing MOH to lead field activities the project was able to conduct systems enhancements even with the travel ban in place, with support from the CCB, the number of MOH staff able to maintain and support the system has significantly increased.

The project was also able to conduct trainings and meetings using virtual platforms.

INTEGRATION OF CROSSCUTTING ISSUES AND USAID FORWARD PRIORITIES

Gender Equality and Female Empowerment

The eSCMIS project submitted a Gender Integration and Social Inclusion Plan to USAID in Quarter 3 which was approved by USAID. The three main focus areas of this plan include:

- Modeling a gender-balanced and inclusive workforce in our own project by striving for 50% female project workforce.
- Working with MOH, MSL, and UNZA to promote a favorable institutional and policy environment for mainstreaming gender equality and social inclusion in supply chain and ICT to mitigate gender disparity.
- Providing gender-balanced youth training and internship programs within the project so that they are armed with requisite knowledge to enter the workforce.

The project has drafted an internship policy and expects to take on the first female software development intern in early FY21.

Sustainability Mechanisms

At the request of the MOH, the project is planning to present its Sustainability and Transition Plan to the PSCM TWG at its next meeting, which has not yet been scheduled. In addition, the project has built additional capacity in the MOH by training 40 eLMIS champions to support upgrading the system from version 3.8 to 4.1.0. This has resulted in 151 health facilities being upgraded by the MOH (out of 332), with remote support provided by eSCMIS staff.

Environmental Compliance

The project received approval for its Environmental Monitoring and Mitigation Plan (EMMP), which was submitted to USAID in April 2020. Indicators for monitoring environmental compliance were then included in the project indicator matrix. Due to COVID restrictions and the postponement of deployment activities to FY21, data from the facilities has not yet been collected.

Youth Development

The project drafted an internship policy that will be finalized in FY21. The plan maps out a strategy for providing IT and software development internships to students in Zambian higher learning institutions.

Policy and Governance Support

The Sustainability and Transition Plan was approved by MOH. Its presentation to other key stakeholders will be done during the next PSCM TWG at a date yet to be set. The plan will serve

as an implementation guide for interventions aimed at successfully handing over of project activities to MOH.

Local Capacity Development

The project worked with MOH staff at district and provincial levels to support upgrading eLMIS FE from 3.8 to 4.1.0. By the end of Quarter 4 in FY20, following training and remote support from eSCMIS staff, 40 MOH provincial and district staff supported 151 facilities to upgrade to version 4.1.0. The project has trained 40 eLMIS champions who are not in turn building the capacity of eLMIS users to become super users and eventually champions as well.

Public-Private Partnership (PPP) and Global Development Alliance (GDA) Impacts

The project engaged in initial discussions and planning of phase I test implementation with potential technology and implementing partners that work in the areas of TVWS, solar energy, and e-waste disposal. Follow-up discussions will be held in accordance with the project's list of technology partners.

Conflict Mitigation

No activities this year.

Science, Technology, and Innovation Impacts

Amid COVID-19 travel restrictions, the project has developed technological adaptations to achieve some key deliverables. The project developed a suite of software to conduct migrations and system upgrades remotely, resulting in 151 of 332 health facilities being upgraded from version 3.8 to 4.1.0. In addition, the project has identified technological adaptations to provide all eLMIS FE sites with remote technical support and supervision and to conduct M&E of project activities. The adaptations facilitated the completion of an MOH-led assessment to gather system requirements in 10 provinces, and the implementation of M&E virtual visits to 235 eLMIS FE sites and 47 district health offices.

Collaborating, Learning, and Adapting

The project conducted virtual M&E visits to 235 health facility and 47 district health offices. Findings of the visits, including challenges, successes, and lessons learned, will be shared in Quarter I of FY21.

eSCMIS adapted its implementation strategy to include remote support of MOH district and provincial staff for the collaborative upgrading of 151 health facilities from version 3.8 to 4.1.0. This modification enabled upgrade activities to begin during COVID-19 travel restrictions.

The project used technology to ensure that the eLMIS system assessment was completed in this fiscal year without risking COVID-19 transmission.

Stakeholder Participation and Involvement

The project collaborated with the MOH to coordinate M&E virtual visits and the completion of 151 upgrades of the eLMIS system. Project staff provided remote support for these activities to

MOH staff at provincial, district, and health facility levels. Similarly, the project team collaborated with MOH provincial and district staff to conduct M&E virtual visits in 235 eLMIS FE sites (36.7 percent) and 47 district health offices to collect baseline data. Preliminary findings address the presence of eLMIS trained staff at each site, MOH involvement in technical support, and the adverse effect of prolonged power outages on transactional data capture. The final analysis of the results and lessons learned will be shared with MOH provincial pharmacy and laboratory staff for their follow-up.

LOOKING AHEAD

With deep regard to lessons learned in FY20, this is a time for renewed strategies and opportunities to achieve fundamental deliverables from the project strategic goals. With crosscutting technology and technical management and training, the eLMIS is growing into a next generation e-health supply chain system that contributes to better health outcomes in Zambia.

Following the successes from FY20, the eSCMIS project will continue adjusting its work plan to better achieve its goals whilst accommodating the pandemic. Activities earmarked for FY21 include:

Objective 1: Implement a next-generation eLMIS

- Use agile software development methodology to incorporate agreed enhancements and changes into eLMIS software suite.
- Rapidly deploy eLMIS FE and training to 400 new health facilities
- Complete transition of 181 health facilities to eLMIS Version 4.1.0
- Provide strategic TSS to sites with FE and CE users
- Provide continuous monitoring and evaluation to overcome challenges and maximize opportunities

Objective 2: Enable GRZ to make data-driven supply chain decisions independently

- Ensure harmonization of different health information systems
- Implement data quality validation tool and develop dashboards to summarize data quality indicators
- Transform data into consumable information at all levels of the health system
- Establish IMPACT teams to ensure information is consumed and analyzed at all levels of the health system, and that decisions are based on these analyses and turned into action

Objective 3: Transfer eLMIS leadership to ensure GRZ is able to take ownership of its data and reporting systems

- Update and implement the sustainability and transition plan to enhance the capacity of the GRZ to own and operate the eLMIS
- Implement key activities from the sustainability and transition plan
- Map and initiate PPPs to increase financial sustainability
- Establish external collaboration with other donors and supporters to ensure transition of system ownership

ANNEXES

- Annex A. Quarter 4 Report
- Annex B. Progress Summary
- Annex C. Success Story

ANNEX A: QUARTER 4 REPORT

I. ACTIVITY IMPLEMENTATION PROGRESS

I.1 Progress Narrative

The eSCMIS project began implementation of key activities in Quarter 4 of FY20. Despite travel restrictions on project staff, system upgrades were completed through a collaborative effort with the MOH. Provincial and district MOH staff and eLMIS champions were remotely trained and supported to complete the system upgrade exercise in their district. Of the 332 sites, 151 (45 percent) were completed in Quarter 4, a clear indication of the MOH's intent to assume leadership of project activities, and an affirmation of the approved Sustainability and Transition Plan.

Additionally, the project team collaborated with the MOH at provincial, district, and health facility levels to conduct M&E visits via phone. A total of 235 eLMIS FE sites (37.6 percent), and 47 districts (40.2 percent) were visited, with M&E questionnaires administered. The findings of these visits will form the M&E project baseline.

I.2 Implementation Status

In Quarter 4 of FY20, the project conducted key activities while adhering to COVID-19 restrictions, in accordance with the USAID and GRZ guidelines provided by the MOH. These activities are described below, grouped by result area.

IRI: Implementation of a next-generation eLMIS

1. Conduct a system assessment focused on requirements for updates, enhancements, and additional functionality

This activity was completed in Quarter 3. The final report was approved by USAID in Quarter 4. A select list of requirements gathered during the exercise was implemented, as reported in IRI.2 below.

2. Incorporate agreed enhancements and changes into the eSCMIS software suite

eSCMIS has continued to incorporate the proposed enhancements in the eLMIS software suite, according to the consolidated list of enhancements from AIDSFree and the system assessment conducted in Quarter 3 of FY20. Table 1 below summarizes the enhancements completed in Quarter 4 by system.

Table 1. System Enhancement Summary by Level

<i>System Type</i>	<i>Enhancement/Feature</i>	<i>Description</i>
<i>eLMIS Central Edition</i>	1. Split of Covid-19 program areas	Split pharmacy and lab programs for improvement management
	2. Enhancement of admin role	Enables users to create new program areas without software developers
	3. Enhanced emergency order analysis	Summarizes emergency orders by geographical region within a specific period of time by each program area
	4. New adjustment types	Includes recalled, quarantined, and unquarantined adjustment types in the system
<i>eLMIS Facility Edition</i>	2. Laboratory equipment module	Facilitates tracking of laboratory equipment functionality and the collection of test numbers used for forecasting and quantification
	3. HIV internal monthly summary report (IMSR)	Includes a summary of tests done by purpose and type of test used (i.e., Determine, Oral quick, or SD bio-line)
	4. HIV daily activity register (DAR)	Includes test result for self-testing using Oral Quick test kits
	5. Enhancement of transfer in/out adjustment	Allows users to complete Province, District, and Facility fields while restricting mapping to facility-approved programs

6. Rapid deploy eLMIS FE to 150 additional health facilities

This activity has not yet begun due to COVID-19. However, the project continued preparatory activities for full-scale deployment once restrictions are lifted. The following activities were completed:

- Equipment Procurement: All procurement contracts were signed, some deliveries have been delayed due to COVID-19 transportation challenges.
- Pre-deployment Facility Preparedness Assessment: In collaboration with the MOH, eSCMIS has so far assessed a total of 545 health facilities that are earmarked for deployment in FY 2021. More assessment will be done to bring the total of 1200 health facilities for the life of project (LOP) target.
- MOH Staff Preparatory Training for System Upgrades and Future Deployments:

The project trained MOH eLMIS champions to complete system upgrades from version 3.8 to 4.1.0. The training included modules on system deployments to new health facilities.

- MOH Approval of Central Level IMPACT Teams: The Directorate of Clinical Care and Diagnostic Services gave its approval for the establishment of IMPACT teams at central, provincial and district levels. All key MOH staff at these levels have been engaged by the project and preliminary activities have been outlined.

7. Update existing eLMIS FE facilities from version 3.8 to version 4.1.0

Despite COVID-19 restrictions, system upgrades were completed in 151 of 332 health facilities (45 percent) through collaborative efforts with MOH provincial and district staff. The project developed a Migration Package for the automatic upgrade of systems from version 3.8 to 4.1.0, and trained MOH staff to complete the upgrade with remote support from eSCMIS staff. Following the upgrade, MOH District super users trained system users at the upgraded sites.

8. Provide technical support supervision to the existing 624 MOH FE sites

The project continued to provide support to health facilities remotely throughout COVID-19 restrictions. Using Anydesk, TeamViewer, and 3CX Call-Center software, were 150 of 204 reported issues (78.6 percent) were resolved within 30 days.

Additionally, through use of a courier service, 26 server and client machines (laptops) reported faulty were repaired and returned to health facilities. This initiative promises significant cost savings for support of future equipment failures at eLMIS FE sites.

9. Provide continuous monitoring and evaluation to learn and adapt to challenges and opportunities

eSCMIS completed the following two key MEL activities in Quarter 4 of FY20:

- MEL Virtual Visits: From August 19 to September 30, 2020, the project conducted M&E virtual visits in 235 of 624 eLMIS FE sites (37.6 percent) in nine of the ten provinces. During the virtual visits, M&E questionnaires were completed via phone, with remote access to eLMIS FE as needed. Furthermore, 47 of 117 districts (40.2 percent) were interviewed and district assessment questionnaires were administered. Upon completion, the analysis, findings, and lessons learned from the visits will be shared with the technical teams.
- Project Performance Management Plan Report, Quarter 3: Based on the indicator list in the Activity MEL Plan (AMELP), data was collected to complete the project's Quarter 3 Performance Management Plan (PMP). The primary recommendation discussed with the technical and senior management teams was expediting the operationalization of IMPACT Teams to ensure that project targets are met. The Quarter 4 report will be presented in Quarter 1 of FY21.

IR2: GRZ able to independently make data-driven supply chain decisions

1. Implement data quality validation tools and dashboards to summarize data quality indicators

The project incorporated dashboards and reports created from Insights and Metabase into eLMIS CE to enhance emergency order and consumption trend variance analysis. Additionally, the project will work on the implementation of additional data validation checks.

2. Transform data into consumable information at all levels of the health system

As a result of COVID-19 travel restrictions that limit district and provincial meetings, this activity has been postponed to Quarter 1 of FY21.

3. Through the introduction of IMPACT teams, ensure information is consumed and analyzed at all levels of the health system, decisions are made based on these analyses, and decisions are turned into action

Establishment of the central level IMPACT team was postponed to Quarter 1 of FY21 because the activity was pending MOH approval. This approval was granted at the end of Quarter 4 of FY20.

IR3: GRZ able to take leadership of eLMIS implementation and maintenance

1. Update and implement the Sustainability and Transition Plan to enhance the capacity of GRZ to own and operate eSCMIS

Following the approval of the Sustainability and Transition Plan by USAID and the MOH, the project plans to present the plan at the next meeting of the Procurement Supply Chain Management TWG, which has not been scheduled. However, eSCMIS engaged the MOH at the district and provincial levels, which resulted in a collaborative effort and the successful upgrade of eLMIS FE from version 3.8 to 4.1.0, a key capacity-building activity. Thus far, 151 of 332 facilities have been upgraded, with support from MOH staff in the field and remote eSCMIS staff.

2. Implement key activities from the Sustainability and Transition Plan

Implementation of the Sustainability and Transition Plan was kickstarted by the collaborative effort to upgrade the eLMIS FE system in 151 health facilities. Additional activities are pending dissemination of the plan to other stakeholders at the next Procurement Supply Chain Management TWG.

3. Map out and initiate public private partnerships between GRZ and private entities to increase financial sustainability

No new PPPs were mapped out in Quarter 4 of FY20.

4. Support the MOH in ensuring that eLMIS training is included in national public health training and in curricula at the University of Zambia (UNZA)

The project, in collaboration with University of Zambia (UNZA) and other partners, conducted a virtual eLMIS orientation for biomedical sciences students in the school of Medicine at the Ridgeway campus. The objective of the orientation was to impart skills in the management and

use of electronic logistics data for supply chain decision-making. Seventy students participated in the orientation.

I.3 Implementation Challenges

COVID-19 travel restrictions have been the main challenge to the deployment of eLMIS FE in new facilities. As a result of the restrictions, no deployments took place in Quarter 4 of FY20. However, with recent reductions in COVID-19 positive cases in Zambia and a low case fatality ratio, the MOH is increasing visits to health facilities to provide technical support and supervision. Thus, the project was able to upgrade 151 health facilities by providing remote support to MOH staff on site. Additionally, if the number of new and active COVID-19 cases continues to decrease, it is expected that travel restrictions will be lifted and implementation and deployment to sites will recommence.

I.4 M&E Plan Update

No updates were made to the M&E Plan in Quarter 4 of FY20.

2. INTEGRATION OF CROSSCUTTING ISSUES AND USAID FORWARD PRIORITIES

2.1 Gender Equality and Female Empowerment

The project submitted a Gender Integration and Social Inclusion Plan to USAID in Quarter 3. The project is finalizing the intern policy and plans to onboard at least one female software development intern in FY21.

2.2 Sustainability Mechanisms

The Sustainability and Transition Plan was approved by the MOH and is now pending presentation at the next meeting of the PSCM TWG.

Two PPP agreements on TV white spacing (TVWS) and environmental compliance are still pending approval. No new PPPs were developed during Quarter 4 of FY20.

2.3 Environmental Compliance

This activity was postponed to FY21 pending the start of new eLMIS FE deployments.

2.4 Youth Development

The project is finalizing the intern policy to address youth development.

2.5 Policy and Governance Support

No activities this quarter.

2.6 Local Capacity Development

The project worked with MOH staff at district and provincial levels to support upgrading eLMIS FE from 3.8 to 4.1.0. By the end Quarter 4 of FY20, 151 facilities were upgraded by 40 MOH provincial and district staff, following the training they received from eSCMIS, along with remote eSCMIS support.

2.7 Public Private Partnership (PPP) and Global Development Alliance (GDA) Impacts

The project did not initiate new PPP activities in Quarter 4 of FY20. Efforts were made to obtain approval for the two main PPPs initiated in Quarter 2 of FY20.

2.8 Conflict Mitigation

No activities this quarter.

2.9 Science, Technology, and Innovation Impacts

No activities this quarter.

2.10 Collaborating, Learning, and Adapting

The project conducted MEL virtual visits to 235 health facility and 47 district health offices. The findings, including challenges, successes, and lessons learned, will be shared in Quarter 1 of FY21.

In addition, eSCMIS adapted its implementation strategy to include remote support to MOH district and provincial staff for the collaborative upgrading of 151 health facilities from version 3.8 to 4.1.0. This has enabled the commencement of upgrade activities despite COVID-19 travel restrictions.

3. STAKEHOLDER PARTICIPATION AND INVOLVEMENT

The project collaborated effectively with the MOH to coordinate MEL visits and the completion of upgrades of eLMIS at 151 facilities. Project staff provided remote support for these activities to MOH staff at the provincial, district, and health facility level.

4. MANAGEMENT AND ADMINISTRATIVE ISSUES

The project delayed in the placement of provincial staff at the MSL hubs due to travel restrictions from COVID-19.

5. LESSONS LEARNED

eSCMIS continued to work collaboratively with the MOH and partners through Quarter 4 of FY20. The importance of effective planning and coordination were some of the key lessons learned with regard to collaborative efforts involving the project and the MOH. This collaboration enabled the launch of system upgrades and the implementation of MEL visits.

6. PLANNED ACTIVITIES FOR NEXT QUARTER INCLUDING UPCOMING EVENTS

Objective Number	Activity Planned	Date
1	Network and deploy eLMIS FE equipment	FY21
1	Upgrade of 221 eLMIS FE sites from version 3.8 to 4.1.0	FY21
2	Conduct district orientations and launch district IMPACT teams	FY21
	Implement key activities from the sustainability and transition plan	FY21
	Map and initiate PPPs to increase financial sustainability	FY21
All	Conduct MEL virtual visits at FE sites	FY21

7. WHAT DOES USAID NOT KNOW THAT IT NEEDS TO?

FY21 budget obligation has resulted in significant reduction of planned activities.

8. HOW IMPLEMENTING PARTNER HAS ADDRESSED A/COR COMMENTS FROM THE LAST QUARTERLY OR SEMI-ANNUAL REPORT

No comments were provided in the previous quarter.

ANNEX B: PROGRESS SUMMARY

Table I(a). PMP Indicator Progress: USAID Standard Indicators and Project Custom Indicators

Strategic Objective: Appropriate quantity and quality of health commodities available at health facilities to meet demand											
Indicator	Data Source	Baseline data		FY20		Quarterly Status – FY20				Annual Performance Achieved to Date (in %)	Comment(s)
		Year	Value	Annual Cumulative Planned Target	Annual Cumulative Actual	Q1	Q2	Q3	Q4		
Intermediate Result (IR) I: Implementation of a next-generation eLMIS											
Sub-IR I.1: Rapidly deploy eLMIS FE network and training to 1,200 new facilities											
I.1.1: Number of new sites deployed with eLMIS FE	eLMIS FE	NA	NA	150	0	NA	0	0	0	0%	Procurement for this activity underway. Due to COVID-19 and inability to travel without approval from USAID, this activity was postponed to FY21.
Sub-IR I.2: Transition existing and new health facilities to updated eLMIS											
I.2.1: Number of existing sites transitioned to eLMIS Version 4 ahead of transition to next generation eLMIS	eLMIS FE Tracker	2019	292	332	151	NA	0	0	151	46%	Despite no major training activity in Q2 and 3 due to COVID 19 travel restrictions, 98% of the annual target was met during system from OJTs conducted during system upgrades
I.2.2: Number of facility staff trained in eLMIS through on-the-job training	Training database	NA	NA	600	587	NA	0	6	587	98%	
Sub-IR I.3: Provide strategic technical support and enable continuous improvement											

1.3.1: Percentage of all active sites with eLMIS FE able to submit reports and requisitions (R&Rs) for at least one program area in eLMIS FE	eLMIS FE	2019	75%	80%	90%	NA	89%	91%	89%	113%	Achieved over the annual target.
1.3.2: Percentage of call center calls and support requests resolved within the reporting month	JIRA service desk, Call center logs	2019	80%	85%	89%	NA	99%	79%	81%	102%	Achieved over the annual target.
Intermediate Result (IR) 2: GRZ able to independently make data-driven supply chain decisions											
Sub-IR 2.1: Data collection tools harmonized and systematically implemented, resulting in collection of high quality data											
2.1.1: Percentage of new system features and enhancements completed (task burn rate on new requirements and enhancements)	Software requirements documentation	NA	NA	NA	3	NA	0	0	3	NA	The system assessment was postponed due to COVID-19 meeting restrictions and was completed in August. Thus, only a small number of enhancements could be included in FY20.
Sub-IR 2.2: Data transformed into consumable information at all levels, and consumed/analyzed at each level											
2.2.1: Percentage of active IMPACT Teams having met within the previous quarter	IMPACT Team meeting minutes	NA	NA	20%	0	NA	0	0	0	0%	This was postponed due to COVID-19 travel restrictions.
Sub-IR 2.3: Decisions made are based on data using a quality-improvement approach and leading to action											
2.3.1: Percentage of eLMIS FE facilities using electronic daily activity register (dispensed to user data), as reviewed and documented by IMPACT Teams	eLMIS FE	2019	~50%	60%	58%	NA	55%	54%	66%	97%	Updated with Q4 data on DAR use. Total of 310 HF's from which data was pulled.
2.3.2: Number of success stories documented from IMPACT Teams	IMPACT Team meeting minutes	NA	NA	10	1	NA	0	0	1	10%	See comment on 2.2.1. One success story was captures about an eLMIS champion, but not through IMPACT teams.
Intermediate Result (IR) 3: GRZ able to take leadership of eLMIS implementation and maintenance											
Sub-IR 3.1: MOH with support from cooperating partners leads provision of eLMIS deployment and operational support											

3.1.1: Transition deployment of LANs and other ICT fully functional infrastructure with security features in place in all public sector health facilities from project to MOH-led	Implementation reports	2019	10% MOH-led	25%	NA	NA	NA	NA	NA	0%	Dependent on I.I.1; see comment above.
3.1.2: Transition of eLMIS OJT for all public sector health facilities from project to MOH-led	Implementation reports	2019	20% MOH-led	40%	NA	NA	NA	NA	NA	0%	Dependent on I.I.1; see comment above.
Sub-IR 3.2: ELMIS training included in public health training and UNZA curriculum, leading to increased availability of local eLMIS expertise											
3.2.1: Number of people trained in eLMIS software development	Training database	NA	NA	15	2	NA	0	0	2	13%	Although the project was unable to do the software developers bootcamp, two local developers were onboarded to eSCMIS and have been trained in eLMIS.
3.2.2: Number of e-learning participants that complete e-learning certificate	E-learning platform	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not planned until FY21
3.3.3: Number of pre-service graduates that have received electronic supply chain management information systems training	Training database	NA	NA	TBD	70	NA	0	0	70	NA	Indicator target is pending feedback from the university that has incorporated pre-service training. Completed virtual training at UNZA.
Sub-IR 3.3: MOH-led coordination of eLMIS financing strategies with stakeholders, including the private sector											
3.3.1: Number of times eSCMIS Sustainability and Transition Plan is updated per year	MOH eLMIS Sustainability and Transition Plan	NA	NA	1	1	NA	0	0	1	100%	Sustainability and Transition Plan approved by USAID and MOH.
3.3.2: Number of times Public-Private Partnership (PPP) Plan updated and reviewed	MOH eLMIS PPP Plan	NA	NA	1	0	NA	0	0	0	0%	This activity is dependent on a sub-committee of the MOH, JSI, and JSH; it has been delayed due to COVID-19 restrictions and MOH priorities. The team has continued to work on

ANNEX C: SUCCESS STORY

The Buddy System for a Sustainable eLMIS

Moono Chilinda is a biomedical technologist from the Chama district in Muchinga province, Zambia. Moono owes his start in the Electronic Logistics Management Information System (eLMIS) to mentorship from his Ministry of Health (MOH) Supervisors. This apprenticeship practice has helped many MOH staff gain knowledge of the system over the years. The USAID Electronic Supply Chain MIS (eSCMIS) project is building on this practice and has dubbed it the 'Buddy System'.

Following the launch of the eLMIS Facility Edition (FE) in 2016, Moono began receiving eLMIS mentoring from his supervisors. Today, Moono is part of a growing group of eLMIS champions able to deploy and migrate the system, orient MOH staff to eLMIS, provide them with technical support, and, if the newcomers are lucky, mentor them to become eLMIS super users. The buddy system is a form of skills transferal that the USAID eSCMIS project uses to build capacity among MOH staff across Zambia. Most recently, the buddy system has enabled the project to expand and sustain its work through the many restrictions accompanying COVID-19.

eSCMIS is a USAID-funded project implemented by John Snow Health Zambia Limited (JSH). In collaboration with the Ministry of Health (MOH), Medical Stores Limited (MSL), the Churches Association of Zambia (CHAZ), and other supply chain partners, eSCMIS is working to transform eLMIS into a sustainable, next-generation system that is wholly owned, implemented, and maintained by the government of Zambia. The eventual objective is a more efficient and sustainable supply chain, a more effective health system, and better health outcomes.

Through the buddy system, the project's eLMIS champions provide less experienced MOH staff with technical support and identify new health facilities for future eLMIS deployment. "I've always had a keen interest in information technology," reflects Moono. "I fully embraced eLMIS because of how efficient and timely it has made my work. With training from my supervisors, I began building my skills. I never imagined I'd become one of the first points of contact in both Eastern and Muchinga provinces on-eLMIS related queries, or that one day I'd be leading migrations or conducting virtual trainings to my MOH colleagues through a pandemic."

In its first year of operation, eSCMIS trained 40 eLMIS champions to support and mentor other MOH staff and to deploy new versions of eLMIS and become eLMIS super users. With support from the champions, 151 health facilities have migrated from eLMIS FE version 3.8 to 4.1.0. "We envision having at least two eLMIS super users in each district by the end of the project life," reports Daison Machinery, eSCMIS's Systems Implementation and Support Manager. "COVID-

19 really threw us in the deep end, but. . . we've managed to maintain reporting rates during the onset of COVID-19 till present, even with eSCMIS project staff not being able to travel to provinces for technical support. We can clearly see the Ministry's commitment to eLMIS."

The project design includes transferring full leadership of eLMIS to the government of Zambia by 2023, with project staff providing technical support for an additional two years. Building the capacity of MOH staff to implement and maintain eLMIS, including through the buddy system, is a key strategy for achieving this objective.

