Background

Uganda is one of many African countries struggling to develop adequate healthcare, particularly in regard to local treatment and access to drugs. According to the 2013-2014 Annual Pharmaceutical Sector Performance Report, only 19% of essential medicines and health supplies for the basic package of health services were covered under the national budget. The remaining bulk of resources for malaria, HIV and AIDS, tuberculosis, vaccines and reproductive health commodities are provided by Global Initiatives.

The USAID/Strengthening Uganda’s Systems for Treating AIDS Nationally (SUSTAIN) project is mandated to ensure the provision of improved quality HIV/AIDS, TB, elimination of mother-to-child transmission (eMTCT) and laboratory services at supported healthcare facilities and Ministry of Health (MOH) stewardship. Health supplies are central for the provision of these quality services as the project supports over 50,000 clients in HIV care.

At the inception of the SUSTAIN project, supply chain management assessment activities were conducted at all supported hospitals to establish the status of the HIV logistics management systems. The major findings of the assessments reported: frequent stock outs of key HIV commodities (40%) coupled with poor reporting/order submission rates (only 44% reported on time), inadequate logistics management skills, unavailable (40% of facilities) and out-of-date logistics management tools (i.e. stock cards, dispensing logs, requisition and issue vouchers), parallel systems for handling HIV commodities at the healthcare facilities, a multiplicity of partners at some facilities and inadequate use and availability of second line and pediatric regimens.

To address the identified gaps, in the past five years, SUSTAIN has collaborated with various partners handling supply chain activities such as:

- Supply Chain Management Systems (SCMS) and Joint Medical Store (JMS) to continue the supply of antiretroviral (ARV) commodities for the U.S. President’s Emergency Plan for AIDS Relief (PEPFAR) cohort of clients until the group was transitioned to the national supply chain system.
- National Medical Stores (NMS) to obtain the right delivery schedules, to refill orders sent on time and provide feedback to the project on the healthcare facilities that do not comply with the schedule for ordering and reporting.
- MOH-Pharmacy Division and AIDS Control Program to equip staff with skills by providing logistics trainings and on-site mentorships to overcome existing gaps in quantification, reporting and inventory management of supplies, and to streamline the supply of commodities for an improved national logistics supply chain system.
collaborating partner contributions continued...

- The Securing Ugandans’ Right to Essential Medicines (SURE) project to train the regional pharmacists in medicine management and other key supply chain areas, such as electronic stores management systems.
- JMS to re-activate the Medicines and therapeutics committees and also train stores, pharmacy and laboratory staff in Good Storage Practices including conducting practical sessions at the JMS facilities.
- The hospital teams to integrate the antiretroviral therapy (ART) pharmacy services into the facility pharmacy departments/units, especially at the regional referral hospitals. This resulted in efficient management of the pharmacy services in the ART clinic.
- Other implementing partners such as Uganda CARES, Baylor-Uganda and Infectious Diseases Institute that were at the same facilities to avoid duplication of supplies to the healthcare facilities.

All supported hospitals have updated logistics management tools and streamlined pharmacy services between the ART pharmacy and the mainstream hospital pharmacy department. The commodities, including those for management of HIV, go through the hospital main stores.

USAID/SUSTAIN Strategic Approach

The USAID/SUSTAIN approach aims at strengthening the capacity of hospitals to be self-sustaining in pharmaceutical and laboratory logistics management.

In order to build sustainable supply chain systems, the project focuses its efforts on streamlining facility supply chain systems and improving healthcare worker skills in quantification, ordering and commodity management through targeted and integrated mentorships, periodic supervision performance assessments (SPAS) and on-site logistics management trainings. The project also utilizes quality improvement approaches such as 5S (sort, set in order, shine, standardize and sustain) and collaborative meetings to improve the quality of supply management systems at 14 high-volume hospitals.

Key Activities and Interventions

Ensuring uninterrupted supply of ARV drugs and HIV-related commodities. At the onset of the project, multiple parallel HIV supply chain systems were set up by different implementing partners to rapidly expand access to services. This approach created challenges for long-term sustainability. In order to build a sustainable health system, the project supported facilities to integrate the supply chain for HIV commodities in the mainstream hospital systems.

Strengthening ordering and reporting quality through identification of order focal persons. At the beginning of the project, most HIV commodity reports were prepared by designated nurses/dispensers/laboratory staff at the HIV clinics without involving the hospital pharmacy and laboratory departments. Through identification of order focal persons, the ordering/reporting for HIV commodities, including ARVs, TB medicine and laboratory reagents, was integrated into the general logistics systems at each facility. The project developed an order checklist to assist order focal persons in compiling orders from various units before submission to NMS. For each ordering cycle, the order focal person completes the checklist, documenting who completes the orders to ensure that all commodity orders/reports are submitted to NMS and JMS on time and at the same time. This approach has led to improved reporting for commodities.

Currently the project has achieved over 90% on time order submission rates with 90% availability rates for HIV commodities.

Use of Short message platforms to improve ordering. In addition to the order focal persons, SUSTAIN introduced use of the short message service (SMS) platform where periodic reminder messages were sent to different order persons before NMS order schedule deadlines. The use of the SMS platform led to improved on-time ordering thus increased adherence to the delivery schedules. This improvement led to a reduction in the need for emergency orders to the hospitals.

Ensuring availability of HIV commodities:

- The project provided buffer supplies for HIV commodities to avoid interruption of service delivery. The buffers were provided during periods of national stock outs or in cases when the item is not provided under the national system. Some of the buffer supplies provided include laboratory reagents for chemistry, hematology and CD4 analysis following the procurement and installation of automated laboratory platforms in 2011.
- The project continues to facilitate monitoring of stock levels and redistribution of medicines and supplies. Medicines and supplies are redistributed from overstocked facilities to facilities with impending stock outs to minimize wastage and service delivery interruptions.

Training service providers in logistics management/good storage practices:

The project trained hospital staff involved in supplies management, including unit heads, pharmacy and laboratory staff in logistics and stores management. A training of trainers (TOT) workshop was organized for regional referral pharmacists and senior health staff who later passed on the skills and knowledge acquired on good storage practices to over 355 healthcare staff at the hospitals. These trainings were
followed by on-site coaching and mentorship sessions conducted by USAID/ SUSTAIN and MOH officials.

Improving storage conditions for medicines and related supplies: In January 2012, the MOH-recommended SPAS approach was adopted to strengthen medicines management. The project has worked with the hospitals to identify, prioritize and address needs for improving storage space and conditions. In addition to training the stores’ personnel in good storage practices, the project supported the installation of key items, such as pallets, shelves, cold chain storage fridges (laboratories) and hygrometers (maximum-minimum thermometers). USAID/ SUSTAIN also supported the teams to sort, set and rearrange commodities in the stores following the 5S principles for workplace environment improvement.

Advocating for and planning quantification activities with individual hospitals, MOH and development partners: In order to ensure a stable supply of ARV medicines through NMS, the project facilitated the development of ARV regimen registers for each facility through a client data validation exercise that reviewed both clinical and drug consumption data. These lists continue to inform quantification, reporting and forecasting at all facilities.

Reviewing Standard Operating Procedures for supplies management: The project, in partnership with MOH Pharmacy Division, held collaborative meetings for 14 healthcare facilities to review supply chain performance at individual hospitals and standardize procedures for improvement. The agreed operating procedures were drafted and shared with MOH. As a result, the project achieved harmonization of systems for requisition, authorization, issue and accountability of supplies at the facility level. Additionally, the project improved accountability for supplies by using key recommendations for the use of dispensing logs, daily consumption log books for medicines and HIV test kits at all user points.

Supporting installation and use of electronic medicines management software and web-based ordering: The project provided desktop computers to pharmacy and stores departments at each facility to facilitate electronic management of supplies especially use of Rx Solution—the MOH recommended electronic medicines management information system software. The project installed Rx Solution software on the desktop computers and trained selected staff (storekeepers, pharmacists, intern pharmacists and pharmacy technicians) on its use. All supported hospitals are also provided internet services to enable the use of the web-based ordering system.

Integrating quality improvement approaches and activities in supply chain management: Working with the MOH and individual hospital teams, the project reviewed and consequently redesigned processes for supply chain management to improve performance. Some of these activities include the distribution and use of job aides and simple human resource management improvement initiatives, such as working with supervisors to routinely clarify staff roles and performance expectations.

Key Achievements and Progress To-date

Support hospitals to conduct routine, accurate and timely reporting and ordering to the NMS: During the four years of consistent support to facilities in forecasting and quantification, reporting and ordering rates at 13 supported hospitals have improved from as low as 35.1% to 100% in June 2017. This resulted in the consistent supply and availability of ARVs, eMTCT drugs, EMHS, laboratory commodities and HIV test kits from both NMS and JMS. The following graph (Figure 1) shows improvement in average order submission rates for selected hospitals across project years.

Trained healthcare workers: USAID/ SUSTAIN trained a total of 167 unit managers and other operational staff in HIV logistics and supplies management. In addition, the project trained 70 laboratory and stores personnel from 22 healthcare facilities in laboratory logistics management.
Continued up-to date Inventory management: Twelve project-supported hospital stores at Arua, Gulu, Mbale, Masaka, Jinja, Mubende, Hoima, Moroto, Soroti, Kabale, Lira and Fort Portal Regional Referral Hospitals have the computerized stock management software (Rx Solution) fully installed and selected staff trained to track storage and inventory records electronically.

Continued stock monitoring and redistribution: The project supply chain and logistics team collects and analyzes monthly stock status data on HIV commodities from supported hospitals. The data helps to inform planning and support redistribution of health supplies to avoid wastage and stock outs at facilities. As a result, the project has reduced the stock-out rate from 40% at the start of the project to only 4.1%.

Improved storage and management of medical supplies: Through the utilization of 5S principles and the institutionalization of quality improvement approaches, the hospital stores are well arranged. As well, through the use of hygrometers, the storage environment conditions organisms are assessed to avoid denaturing of the commodities during storage. On a five-point scale, the project improved its storage and supply management from 3.9 at baseline to its current score of 4.51.

Increased availability of Key HIV commodities: The high order submission rates have translated into product availability for the health supplies including Cotrimoxazole, TB medicines, ARVs and laboratory reagents hence improved laboratory monitoring and clinical management of clients at the supported facilities. Where national stock-outs were experienced, the project team continued to facilitate redistribution of commodities from other supported health facilities.

### Table 1. Trends in Key HIV-related commodities availability at hospitals

<table>
<thead>
<tr>
<th>Commodity Type</th>
<th>Q1-14</th>
<th>Q2-14</th>
<th>Q3-14</th>
<th>Q4-14</th>
<th>Q1-15</th>
<th>Q2-15</th>
<th>Q3-15</th>
<th>Q4-15</th>
<th>Q1-16</th>
<th>Q2-16</th>
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<th>Q4-16</th>
<th>Q1-17</th>
<th>Q2-17</th>
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<td>85%</td>
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<td>Adult ARVs 2nd line</td>
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<td>92</td>
<td>81</td>
<td>68%</td>
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<td>81%</td>
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<td>Children ARVs 1st line</td>
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<td>93</td>
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<td>Children TB 1st line</td>
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<td>eMTCT Medicine</td>
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<td>Syphilis test kits</td>
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<td>Quarterly average</td>
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**USAID Strengthening Uganda’s Systems for Treating AIDS Nationally (SUSTAIN) Project**

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