USAID/UGANDA HEALTH SUPPLY CHAIN (UHSC) PROGRAM

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Annual Progress Report

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Year 3

USAID/Uganda Health Supply Chain
Management Sciences for Health
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ABOUT USAID/UGANDA HEALTH SUPPLY CHAIN

The USAID-funded program, Uganda Health Supply Chain (UHSC), aims to assist the Government of Uganda's and the Ministry of Health's commitment to improve the health status of the Ugandan population by increasing the availability, affordability, accessibility, and appropriate use of good quality essential medicines and health supplies (EMHS).

The five-year $30 million cooperative agreement is implemented by Management Sciences for Health in collaboration with Harvard University/Harvard Pilgrim Health Care, Euro Health Group, Imperial Health Sciences, Health Promotion and Social Development, and Makerere University College of Health Sciences.

The program builds on the achievements and lessons learned under USAID's Securing Ugandans' Rights to Essential Medicines program and focuses on health system strengthening to ensure availability and equitable access to EMHS and contribute to the achievement of Uganda's national health and development goals.

USAID/Uganda Health Supply Chain Program Objectives

- Improve Uganda's policies and strategies to support cost-effective, equitable, and transparent use of available EMHS resources
- Strengthen country capacity for effective management and utilization of EMHS
- Increase availability and access to EMHS for priority populations

By the end of UHSC, Uganda's supply chain management capacity will be built at all levels; optimized systems will be efficient, effective, and transparent; management will be stronger due to evidence-based decision making; and EMHS will be more affordable. In addition, the Ministry of Health will have taken ownership and responsibility for the EMHS supply chain and will have the necessary tools, approaches, skills, and coordinating mechanisms to maintain and expand on USAID's investments.

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Photo front page: *Launch of the Uganda Clinical Guidelines 2016 and Essential Medicines and Health Supplies List for Uganda 2016 at Imperial Royale Hotel on September 12, 2017.*

ACRONYMS AND ABBREVIATIONS

ACT	artemisinin-based combination therapy
AMU	appropriate medicines use
ART	antiretroviral therapy
ARV	antiretroviral
DHIS2	district health information system, version 2
DHO	district health officer
EM	Essential medicines
EMHS	essential medicines and health supplies
EMHSLU	*Essential Medicines and Health Supplies List of Uganda*
FACTS	financial and commodity tracking system
GDP	good distribution practice
GPP	good pharmacy practices
HC	health center
iCCM	integrated community case management
JMS	Joint Medical Store
LLS	Laboratory SPARS supervisors
M&E	monitoring and evaluation
MB MMS	medical bureau medicines management supervisors
MMS	medicines management supervisors
MoH	Ministry of Health
MTCs	medicines and therapeutic committees
NDA	National Drug Authority
NMCP	National Malaria Control Program
NMS	National Medical Stores
NTLP	National Tuberculosis and Leprosy Program
PEPFAR	President's Emergency Plan for AIDS Relief
PFM	pharmaceutical financial management
PIP	pharmaceutical information portal
PNFP	private-not-for-profit
QPPU	Quantification and Procurement Planning Unit
RDT	rapid diagnostic test (malaria)
RMNCAH	reproductive, maternal, newborn, child and adolescent health
SPARS	supervision, performance assessment, recognition strategy
SURE	Securing Ugandans' Right to Essential Medicines [program]
TB	tuberculosis
UCG	*Uganda Clinical Guidelines*
UCMB	Uganda Catholic Medical Bureau
UHSC	Uganda Health Supply Chain [program]
UMMB	Uganda Muslim Medical Bureau

UNHLS	Uganda National Health Laboratory Service
UOMB	Uganda Orthodox Medical Bureau
UPMB	Uganda Protestant Medical Bureau
USAID	US Agency for International Development
WAOS	web-based ARV ordering and reporting system
WHO	World Health Organization

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EXECUTIVE SUMMARY

This annual progress report covers Year 3 of the US Agency for International Development (USAID)/Uganda Health Supply Chain (UHSC) program from October 1, 2016 to September 30, 2017. It highlights the UHSC program's activities and achievements in improving availability, access, affordability, and appropriate use of medicines, as well as the challenges we encountered in implementation during the year.

Figure 1 below provides a quick overview of progress achieved by result area. Each sub-result activity listed in the Year 3 work plan was scored based on its status at the end of Year 3: 0% not started or 50%, 75%, or 100% completed. Using this means of calculating progress, the overall progress by end of Year 3 is 78%, lowest in result area 1.

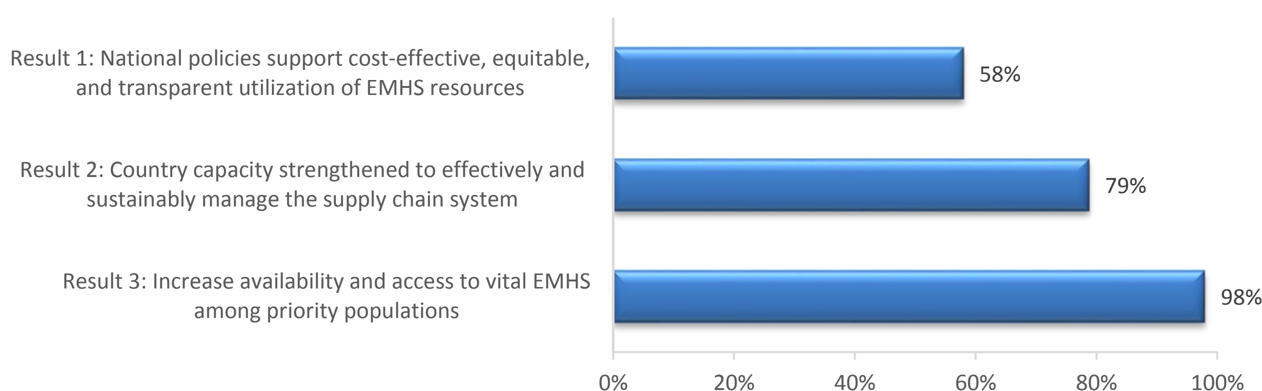


Figure 1: UHSC Year 3 progress by Result Area

UHSC's progress resulted from the high level of cooperation and commitment from Ministry of Health (MoH) programs, particularly the Pharmacy Department, and district health authorities and partners in the 84[1] UHSC-supported districts.

The program's objective is to improve the health status of the Ugandan population by increasing the availability, accessibility, and appropriate use of essential medicines and health supplies (EMHS). The objective will be achieved through three main intermediate results: 1) national policies and strategies support cost-effective, equitable, and transparent use of available EMHS resources; 2) country capacity strengthened for effective management and utilization of EMHS; and 3) increased availability and access to EMHS for priority populations.

UHSC applies four main strategies in its technical framework: strengthen systems, improve management, build capacity, and generate information for decision-making. By intertwining a mix of policy, regulatory, managerial, financial, and educational interventions with routine performance monitoring, UHSC and other stakeholders are further transforming pharmaceutical sector systems and practices in Uganda. To ensure sustainability of these achievements, MoH staff from the Pharmacy Department and technical programs, as well as district-level health managers and providers, are an integral part of designing and implementing UHSC activities.

Major achievements for the year are summarized below.

[1] 75 districts recently increased to 84 by splitting of several district. Total national districts is by end of third year 122

Result 1: National policies support cost-effective, equitable and transparent use of EMHS resources

We achieved a key milestone for transparency and cost-effectiveness this year with the establishment of the EMHS credit line at the Joint Medical Store (JMS) for 539 private not-for-profit (PNFP) facilities. The 7.4 billion shilling credit line replaces the district-managed allocation system that had been in place since 2003 and ensures a basic level of access to vital EMHS in the PNFP sector. The 'push-pull' pilot study is well underway in 50 lower level health centers in 10 districts; facilities have prepared and submitted two bimonthly orders to the National Medical Stores (NMS) after being trained on procurement planning and ordering. We supported the MoH in the design and implementation of a costing study for providing health services in government, private-for-profit, and PNFP health facilities to inform development of the national health insurance benefit package. We submitted two articles for publication in the *Journal of Pharmaceutical Policy and Practice* and are preparing five more articles for submission. Three impact studies designed with our Harvard University partner are underway, and the results will contribute to national programming on how to improve health facility performance.

Result 2: Country capacity strengthened to effectively and sustainably manage supply chain

UHSC's team of logistics specialists continued providing technical support to MoH technical programs and central warehouses. This year, JMS reduced their distribution costs from 5% to 2.3% in just six months after implementing UHSC-recommended changes to transport loading practices, distribution schedules, and routing; managers now have full visibility of distribution operations with a performance indicator dashboard linked directly to their warehouse management information system. We also completed a preliminary costing study of NMS operations; results are intended to inform changes to their fee schedule.

The process of incorporating medicines management modules into the preservice curricula in 13 health training institutions was completed and teaching has begun. Four pharmacy schools will also offer RxSolution and pharmaceutical financial management (PFM) modules as part of their curricula beginning in October 2017. The Pharmacy Department's Appropriate Medicines Use Unit, established last year with UHSC support, participated in developing the national antimicrobial resistance strategy and initiated an Appropriate Medicines Use advisory group to lead and oversee ongoing updates of the *Uganda Clinical Guidelines* (UCG) and *Essential Medicines and Health Supplies List of Uganda* (EMHSLU).

More than 300 medicines management supervisors (MMS) were trained on the updated essential medicine (EM) supervision, performance assessment, recognition strategy (SPARS) assessment and reporting form. In addition, 57% and 51% of government and PNFP facilities, respectively reached the target score of 20 out of 25 points by September 2017. Collaborating with the National Tuberculosis and Leprosy Program (NTLP) and Uganda National Health Laboratory Service (UNHLS), we completed most of the training and equipping of supervisors for tuberculosis (TB) SPARS and Lab SPARS, and the pilot is underway in 20 districts. The development of the antiretroviral therapy (ART) SPARS tool and training materials has been completed, allowing MMS training to begin in early Year 4. RxSolution is now installed in 230 hospitals and health center (HC) IV facilities nationwide.

Result 3: Increased availability and access to vital medicines and health supplies among priority populations

We made important progress in implementing the *Community Health Supply Chain System Strengthening Strategy 2016 – 2020.* The MoH approved four new standardized community logistics management tools (consumption log; dispensed, stock balance; and request summary; magic calculator; and product issue log). UHSC launched an eight-month pilot of the standardized tools and procedures after training 307 district and facility staff in five selected districts. The pilot is being implemented in collaboration with UNICEF, Save the Children, PATH, FHI 360, and RHITES-SW
With our support, the Quantification and Procurement Planning Unit (QPPU) created an integrated community case management (iCCM) commodity pipeline tracking database and is routinely updating it with central warehouse data on receipts, issues, and stock levels. Bimonthly iCCM stock status reports and quarterly iCCM summary performance reports with current iCCM coverage, facility reporting rates, and data on iCCM indicators are now regularly disseminated to stakeholders in the Commodity Security Group and iCCM technical working group meetings.

Michelle Lang-Ali, Deputy Director USAID's Health and HIV/AIDS office, Dr. Jane Ruth Aceng, Minister of Health, and Dr. Birna Trap, Chief of Party, USAID/Uganda Health Supply Chain program at the launch of the Uganda Clinical Guidelines 2016, 12 September 2017 at the Imperial Royale Hotel.

Brian Sekayombya delivers a paper presentation during the drugs and vaccines parallel session at the Joint Annual Scientific Conference on September 28, 2017.

TECHNICAL RESULT AREAS AND ACTIVITIES

This section presents details on the status of activity implementation under the three result areas.

RESULT 1: NATIONAL POLICIES SUPPORT COST-EFFECTIVE, EQUITABLE, AND TRANSPARENT USE OF EMHS RESOURCES

Sub-result 1.1. Policies that improve affordability, availability, and accessibility of EMHS

Resource allocation equity

In July 2017, top MoH management approved the establishment of the JMS EMHS credit line for 539 PNFP health facilities with an annual budget of 7.4 billion Uganda shillings (50% of primary health care funds for the PNFP sector). This credit line is a key milestone in the joint efforts by UHSC, medical bureaus, JMS, and others to establish a cost-effective and transparent EMHS procurement mechanism for PNFP facilities. Implementation details are outlined in a five-year agreement approved by the solicitor general. UHSC will continue to support the primary health care credit line implementation and performance monitoring. The MoH released the tranche of funds to JMS in August, and facilities received their first credit line supplies in September.

The one-year push-pull pilot study is underway in 40 HCIIIs and 10 HCIIs in 10 districts in collaboration with the Pharmacy Department and NMS. MMS in the pilot districts received the PFM classroom and practical training so they could provide on-job training to health facility staff in procurement planning and ordering. NMS delivered one cycle of orders to the pilot facilities and orders for the second cycle were submitted. NMS is a member of the pilot task team and is committed to ensuring that results from the pilot will be used to inform policy decisions about possible transition of lower level facilities to a pull system.

This year, the Medicines Procurement and Management Technical Working Group approved our concept paper for revising the allocation principles to achieve greater funding equity within and between government health facilities. We drafted the terms of reference for an equity taskforce, which is led by the Pharmacy Department, to oversee the development of new allocation guidelines. USAID included the equity-related interventions in the USAID/MoH implementation letter to ensure more progress in this area.

Financial information management and governance

UHSC and its predecessor program, Securing Ugandans' Right to Essential Medicines (SURE), have long advocated for establishing a financial and commodity tracking system (FACTS) to provide an integrated and transparent overview of EMHS financing in Uganda. In Q12, we recruited one staff person to support the MoH Department of Planning and Policy to develop FACTS in Year 4.

Affordability of medicines

In Year 3, we helped the MoH design and implement a study to estimate the cost of health services in government, private-for-profit, and PNFP health facilities that will inform the

development of the national health insurance benefit package. In Q12, we held meetings with the MoH and other stakeholders to validate the costing assumptions used; in Year 4, we will finalize and disseminate the costing exercise results to stakeholders and begin developing cost recovery guidelines.

Challenges

- The ministerial and key stakeholders support needed to establish FACTS may continue to be inadequate, which leaves in question that there will be sufficient time remaining in UHSC to develop and implement FACTS sustainably
- Lengthy MoH bureaucratic processes and delays in MoH decision-making on matters such as the establishment of equity task force affect timely implementation

Sub-result 1.2 Pharmaceutical Sector Research and Advocacy

Operational research—collaborating, learning, and adapting

In Year 3, as part of USAID's collaboration, learning, and adapting strategy, UHSC and our Harvard partners wrote and submitted several papers on various UHSC-supported interventions. Most of the planned articles were completed (Table 1). We also designed three impact assessment studies to measure the effects of the TB SPARS pilot, Lab SPARS pilot, and the push-pull pilot. We will analyze study data and disseminate reports in Year 4.

Table 1. Status of publications planned in Year 3

Article topic	Status
Inter-rater reliability of SPARS performance indicators	Article submitted to *Journal of Pharmaceutical Policy and Practice*
Inter-rater reliability of GPP inspection indicators	Article drafted
Quality of SPARS supportive supervision	Article submitted to *Journal of Pharmaceutical Policy and Practice* and accepted for publication
Access to high cost medicines in low income countries	Book chapter drafted and submitted
SPARS cost effectiveness	Data analysis section reviewed
SPARS longitudinal progress	Article drafted
SPARS supply chain management	Data analysis done and article being drafted
SPARS rational drug use	Data analysis done and article being drafted
Theme series introduction	Drafted

RESULT 2.COUNTRY CAPACITY STRENGTHENED TO EFFECTIVELY AND SUSTAINABLY MANAGE THE SUPPLY CHAIN

Sub-result 2.1. Central supply chain management systems strengthened

Central warehouse performance

Joint Medical Store

This year, JMS reduced their distribution costs from 5% to 2.3% in just six months after implementing recommendations from a UHSC study of JMS' distribution operations. JMS changed their transport loading practices, distribution schedules, and routing and they now have full visibility of their distribution operations with a performance indicator dashboard linked directly to their warehouse management information system. With our support, JMS' central warehouse capacity was increased by 2,000 pallet positions and inventory management efficiency improved with our procurement of shelving racks. These improvements enable JMS to provide affordable and efficient to-the-door distribution services to the more than 550 PNFP facilities under the new EMHS credit line as well as customers receiving donated supplies and commercial customers. After months of preparations by a joint JMS-medical bureau-UHSC task team, the credit line was implemented after the MoH released funds. About 96% of eligible facilities placed and received their EMHS orders.

We achieved another milestone this year with the successful pilot testing of electronic ordering at JMS, enabling eight facilities with RxSolution to electronically submit EMHS order to the JMS warehouse management information system. This will be scaled-up to all 36 computerized PNFP facilities in Year 4.

Our two logistics specialists seconded to JMS succeeded in maintaining a facility reporting rate of over 90% for the 284 facilities receiving USAID-donated antiretroviral (ARV) and opportunistic infection medicines and 646 facilities receiving malaria commodities. To improve reporting and commodity management in private-for-profit facilities, UHSC trained the 13 JMS medical representatives on the web-based ARV ordering system (WAOS) and SPARS and provided them with motorbikes and computers so they can make and report on regular SPARS supervisory visits.

National Medical Stores

The UHSC-funded costing study at NMS was completed by the contracted firm and final results presented to USAID and NMS in July. At USAID's request, we procured the services of a transport provider to deliver 112 40-foot containers to 112 districts to support NMS in establishing cross-docking storage facilities. The distribution will take place in the first quarter of Year 4. We sponsored two NMS staff to participate in a training in South Africa to strengthen their monitoring and evaluation (M&E) knowledge and skills.

Uganda Health Marketing Group

This year's plan to help UHMG review bids to procure a new enterprise resource package was delayed because the UHMG bid solicitation process took longer than anticipated. We recruited a short-term consultant to help UHMG with the bid review in Q13, Year 4.

Challenges

- Using the NMS costing study that is based on weight and volume estimate and not actual weight and volume figures has proven challenging to reevaluate the service fees. A costing study at JMS is underway using actual weight/volume figures.

National Drug Authority

Good pharmacy practice (GPP) certification

With our support, this year National Drug Authority (NDA) inspected 803 public and PNFP facilities for good pharmacy practice (GPP), and 58% of the facilities met the minimum GPP standards and were certified. This year's inspection target of 2,000 facilities could not be achieved because NDA inspectors had to prioritize Good Distribution Practices (GDP) licensing inspections of wholesalers from January to April, 2017. Inspectors uploaded 1,618 GPP inspection reports to the electronic GPP (e-GPP) database. UHSC audited 100% of all GPP inspection reports for quality and to ensure the inspections actually occurred. This year, NDA regional head inspectors also supervised the lower level inspectors in compliance with our recommendation to NDA to assure the quality of facility inspections. As planned, we shifted the server and e-GPP database from UHSC to NDA; NDA will now take over responsible for maintaining the system and ensuring sustainability of electronic reporting.
UHSC collaborated with NDA to distribute GPP posters and SAWA SAWA signage to all GPP-certified health facility pharmacies to be distributed together with the reward schemes.

Good distribution practice

In December 2016, NDA issued licensure guidelines that required that pharmaceutical wholesalers and distributors must comply with the Phase 1 GDP standards by January 31, 2017 to receive operating licenses for the year or risk closure. The Phase 1 standards cover quality management systems, documentation, and standard operating procedures. In January 2017, UHSC and senior NDA inspectors trained 30 NDA inspectors to conduct the GDP inspections. In Q10, all of the wholesale and retail pharmacies and distributors that applied for NDA's 2017 operating license were inspected to determine their compliance with GDP Phase 1 standards, and 497 wholesalers were licensed. In Q11, 54 wholesalers that did not meet the requirements were instructed by NDA to cease operations. The list of the unlicensed entities was published in the public domain. NDA will apply GDP Phase 2 standards—which cover infrastructure standards, complaints, and counterfeit handling and recall procedures—in 2018. Phase 3 standards, which will regulate transportation, will be implemented in 2019.

The formation and operation of four regional wholesaler organizations is underway in the North, West Nile, Western, and South West regions. As appropriate, the wholesaler organizations will receive UHSC support next year on specific areas of GDP implementation.

This year we held two meetings with the Pharmaceutical Society of Uganda to discuss their potential collaboration in training pharmacists on GDP. All distributors and wholesalers are supervised by technical directors who must be pharmacists, so improving their knowledge of GDP will strengthen implementation. We submitted a draft concept for the pharmacist GDP

training as part of continuing professional development to the Pharmaceutical Society for their feedback.

Challenges

- Competing priorities for the NDA inspectors has slowed down the GPP inspection.
- Ensuring that government and PNFP health facilities undertake necessary improvements to become GPP certified and finding the needed funding related to mitigating critical indicators are difficult.

Private not-for-profit sector

EM SPARS implementation and use of data for decision making

In Year 3, UHSC continued building the capacity of the four medical bureaus to implement EM SPARS in PNFP facilities. There are now 75 active medical bureau MMS (MB MMS), covering all 120 districts. Four new MB MMS for new Uganda Protestant medical bureau dioceses were nominated and oriented in addition to three replacements during the year. Ninety-two percent of the 640 PNFP have had at least one EM SPARS visit, and 48% have achieved the target score of 20, which is an increase of 3% over last year. In addition to monthly reviews of EM SPARS performance reports, the bureaus and UHSC carried out joint supervisory visits each quarter to 50 well-performing and poorly performing facilities. Facilities owned by the Catholic and Protestant bureaus (UCMB and UPMB) performed better than the Orthodox and Muslim bureaus (UOMB and UMMB) (Table 2). Well-performing facilities and MB MMS were targeted for recognition in line with the public sector EM SPARS recognition scheme (procurement of the recognition items is underway). The MB MMS and representatives from JMS, diocesan health coordinators, and medical bureaus participated in all our regional and district coordination meetings and receive feedback from District Health Officer (DHO) and district MMS on EM SPARS progress in PNFP facilities within the districts.

Table 2: EM SPARS implementation in PNFP sector support, Year 3

Activity	Medical Bureau	Year 1 Total	Year 2 Total	Year 3 Total
Number of SPARS supervisions conducted	UCMB	287	495	359
	UMMB	52	94	74
	UOMB	5	23	30
	UPMB	249	357	341
Percent of facilities with at least one SPARS visit	UCMB	66	89	95
	UMMB	57	80	91
	UOMB	38	77	92
	UPMB	58	79	89
Percent of facilities with at least 5 visits	UCMB	34	54	65
	UMMB	20	41	54
	UOMB	30	31	62
	UPMB	34	38	57
Percent of facilities with SPARS score ≥ 20	UCMB	36	51	66
	UMMB	23	37	37
	UOMB	0	0	23
	UPMB	32	41	33

One of our key aims this year was to improve SPARS data utilization among the medical bureaus and their facilities. We trained JMS medical representatives and M&E staff, all MB MMS, and select medical bureau staff on how to use the Pharmaceutical Information Portal (PIP) to access information and reports. Within each bureau we also supported the formation of a technical working group that is spearheads the rollout of RxSolution; we trained all working group members to be RxSolution super users so they can provide direct support to facilities. To increase the medical bureau scale-up and sustainability of EM SPARS, RxSolution, and PFM, we worked with the bureaus to incorporate the interventions into their annual work plans. The UOMB and UMMB incorporated support for EM SPARS and pharmaceutical human resources into their five-year strategic work plans to facilitate transition of the activities to the bureaus.

EM SPARS implementation in private-for-profit sector

This year, we supported the 13 JMS medical representatives to implement EM SPARS in 130 high-volume private-for-profit antiretroviral therapy (ART) sites that receive HIV commodities through JMS. We provided them with the full EM SPARS training package, computers and motorbikes, and funding to conduct regular supervision visits. JMS is responsible for managing the performance of the medical representatives to ensure they are productive. Due to the poor performance of the JMS representatives (only 24 EM SPARS supervision visits conducted in one year), JMS revised the approach to supporting the private-for-profit support. In the new strategy, JMS has separated responsibility of facility capacity building from institutional business expansion. Seven of the previous 13 JMS representatives have been assigned new roles of institutional business expansion while five new technical representatives have been employed to focus on capacity building of facilities in medicines management and reporting. JMS has also employed a full time M&E staff person to monitor performance of health facilities and JMS representatives.

Challenges

- MB MMS supervision responsibilities cover several districts and the 35,000 UGX per visit payment is usually insufficient to cover time and transport costs due to the need to stay overnight
- The high turnover of PNFP facility staff poses a problem with the continuity of SPARS and other capacity-building interventions.

Pharmaceutical management information system

National RxSolution rollout

In Year 3, UHSC continued to support the Pharmacy Department to expand RxSolution to 400 hospitals and HCIV facilities by June 30, 2018. In 2010, the MoH selected RxSolution as the best software tool for the country’s health facilities to use in managing their EMHS stock. RxSolution enables facility staff to track, analyze, and report stock information and product usage to prevent stock outs, reduce expiry and overstocks, and improve financial accountability. With RxSolution, facilities can transmit data electronically to the central level for analysis, and they can place orders directly with warehouses.

As of the end of Year 3, RxSolution has been installed and is functioning in 230 facilities across the country and 731 health workers trained to use the system (Table 3).

Table 3: Status of national RxSolution rollout, Year 3

	Year 2 achieved (cumulative)	Year 3 target (cumulative)	Year 3 achieved (cumulative)
Number of facilities with RxSolution installed	127	220	230
Number of staff trained	494	700	731
Number of support activities carried out	229	350	761

In total, UHSC has procured 30 complete sets of computer equipment for RxSolution use (printer, modem, inverter) as well as 31 inverter systems for facilities that received UNFPA-donated computers and printers for RxSolution implementation. In UHSC-supported districts, 170 of the hospitals and HCIV facilities are using RxSolution. Other implementing partners and medical bureaus supported RxSolution installation in 171 facilities. The UHSC team support RxSolution beyond our supported districts including all regional referral hospitals and other high-volume facilities.

This year, we provided the following support to ensure that the national implementation of RxSolution is coordinated, standardized and sustainable (Table 4)

Table 4: Summary of UHSC support for national RxSolution roll out, Year 3

Purpose	Activities carried out
Build MoH/Pharmacy Department capacity to coordinate and monitor RxSolution implementation	— Conducted training for 11 staff members of MoH Division of Health Informatics — Helped Pharmacy Department hold monthly meetings of nine partners involved in the RxSolution national rollout — Set-up internet forum to facilitate communication among the partners and enable them to submit updates on Roll Out Monitoring System. — Disseminated brochure on national RxSolution program to generate additional partner support and resources — Disseminated standardized equipment specifications for RxSolution installation — Carried out joint UHSC/Pharmacy Department visits to 14 facilities to resolve staffing and administrative issues
Provide direct support to facilities to install and use RxSolution	— Installed RxSolution and trained staff of Mulago National Referral Hospital main store, Kawempe and Kiruddu satellite stores, Entebbe General Hospital, Uganda Cancer Institute, and Uganda Heart Institute. — Provided on-job training and technical support to staff in 19 facilities — Procured 16 computers and printers for 16 facilities in UHSC-supported districts — Provided follow-up user support to 85 facilities
Build capacity of implementing partners, medical bureaus and Pharmacy schools to support and sustain use of RxSolution	— Trained 66 staff members from other US government projects and donor partners — Trained 22 lecturers from four pharmacy training institutions to provide RxSolution training in their pre-service curricula
Increase use of RxSolution information for decision making	— Designed and tested a web-based RxSolution dashboard to enable staff to easily monitor key stock management data — Designed and tested an automated feature to enable facility Rx stock status reports to be imported into PIP

Purpose	Activities carried out
	— Demonstrated RxSolution system and reports to 22 DHOs and facility in-charges in South Western region
Expand RxSolution functions	— Provided on-job training for electronic ordering for 15 PNFP staff members and successfully tested electronic ordering in 10 PNFP facilities. — Prepared materials for training facility staff on dispensing module — Trained 25 Baylor Uganda staff on the dispensing module — Trained 22 Makerere University Joint AIDS Program staff on the RxSolution dispensing module

MoH national information and communication technology call center

This year, we trained all MoH call center staff in the RxSolution stock module, which is a first step toward building their capacity to support the system independently. In Year 4, we will continue their training to enable them to support the RxSolution national rollout.

Challenges

- Staffing issues in many public facilities affected the timely update of RxSolution data
- Some implementing partners did not procure the standard hardware requirements (e.g., inverters) which negatively affects system functionality
- Parallel systems are being used in many PNFP facilities, which creates an additional data entry burden
- Lack of mains power in some facilities and inadequate budget for electricity
- Meeting government of Uganda target of 400 facilities by June 2018

Pharmaceutical Information Portal

This year, we accomplished a key aim of improving the PIP design functionality and user features, so that the system is as efficient and as easy-to-use as possible (Figure 2). We finalized migration of the portal to a new SQL server and SharePoint platform. Extract, transform, and load procedures were incorporated to move data from SPARS form submissions to the data warehouse. We installed new SharePoint features for document management and information sharing and incorporated business intelligence features, such as online dynamic analysis using Excel pivot tables, into the portal so users can generate tailored reports on specific areas such as individual medicines management indicators or MMS performance indicators. Users can download maps showing each facility and basic information on the progress of the district package of interventions in the different districts.

Figure 2: Welcome page to PIP

The PIP content was also expanded and a document library set up to make it easy for users to locate pharmaceutical sector documents of interest. PIP now includes all EM SPARS reports, MMS effectiveness and efficiency reports, annual pharmaceutical sector reports, M&E reports, PFM performance reports, RxSolution roll out status reports, as well as PIP system usage reports. SharePoint sites for PFM, ART SPARS, TB SPARS and RxSolution roll out monitoring were also migrated to the new environment. The new features and content have expanded use of the PIP at central level (Table 5).

Table 5: Frequency of user access of the Pharmaceutical Information Portal

Type of PIP user	Year 2	Year 3
District health officer	61	54
Logistics advisor	1,030	834
MMS	2,321	1,085
Regional pharmacist	438	348
M&E, MOH representatives	0	1,386
UHSC district team member	0	6,430
Total	**3,850**	**10,137**

Transition of the PIP to Ministry of Health

UHSC procured and configured four new higher-capacity servers to host and upgrade the PIP system for improved user access. We transferred the servers to the MoH Division of Health Informatics server room where they are hosted. We recruited and seconded three new UHSC staff members to the Division of Health Informatics to train staff and support day-to-day operations to ensure the smooth transition of the PIP. The UHSC PIP team and MOH systems administrator underwent various trainings in South Africa on the Microsoft data warehouse and SharePoint business intelligence platforms on which the new PIP is implemented. The trainings

covered SQL server data warehouse implementation and administration, SharePoint end user and business intelligence solutions development as well as data analytics with Power BI and implementing SQL data models. This strengthens the PIP and MoH teams' ability to implement and maintain the system and deploy enhanced features in the PIP. Security for the PIP servers was extensively enhanced with perimeter firewalls and secure socket layer encryption to prevent intrusion and allow secure access and data submission to the portal.

Challenges

- Low awareness of the capabilities of the PIP system at central and district levels.
- MoH will need to ensure that critical staff are employed at the resource center so that the UHSC secondment can build their capacity in PIP maintenance and support.

Pharmacy Department and other MoH technical programs

Pharmacy Department

Pharmacy Department coordination: UHSC and Pharmacy Department held regular coordination meetings to update the Pharmacy Department on UHSC progress and inform UHSC about MoH supply chain priorities for the quarter.

Pharmacy Department M&E Unit: In Year 3, we continued to support the Pharmacy Department's M&E Unit efforts to strengthen the availability and use of pharmaceutical sector data among stakeholders and monitor progress in implementing the National Medicines Policy. With our support, the unit finalized and disseminated the *2014/15 Annual Pharmaceutical Sector Performance Report* and prepared six bimonthly national facility stock status reports and four quarterly national SPARS reports. Four quarterly M&E health commodity logistics meetings were held to discuss the report, each attended by around 60 participants. These reports and other pharmaceutical sector documents were made available on the new Pharmacy Department webpage on the MoH website (*health.go.ug.publications or library.health.go.ug*). The filing and documentation systems that we helped to create makes it easy for users at all levels to access folders on QPPU, M&E, Appropriate Medicines Use (AMU) Unit, and the Pharmacy Department. We also assisted the National Malaria Control Program (NMCP) to develop a customized report using malaria-related data from SPARS, RxSolution, and district health information system, version 2 (DHIS2) to facilitate decision making on logistics and case management.

UHSC completed a job aid to instruct facility staff on how to complete the section of the monthly facility report (HMIS 105) on the stock on hand and consumption of 41 tracer EMHS. We distributed 5,000 copies of the job aid to 4,000 public and PNFP health facilities. We also worked with the Pharmacy Department and the Division of Health Informatics to clean the data set on the 41 tracer commodities and establish validation rules to improve data quality.

Challenges

- Data for some of the new pharmaceutical sector indicators were not readily available, which constrain data collection.

Quantification and Procurement Planning Unit (QPPU)

We continued in Year 3 to support the QPPU's team of five logistics specialists and two pharmacy interns. They carried out their regular work of gathering information and updating

Pipeline databases for ARVs, opportunistic infection medicines, products for reproductive, maternal, newborn, child, and adolescent health (RMNCAH), malaria, and TB; producing national bimonthly stock status reports; holding monthly Commodity Security Group meetings; and doing quantifications. This year they also held special meetings with stakeholders to plan for the replacement of Kaletra syrup with Kaletra pellets and to discuss the public sector funding gaps for TB and malaria products, ARVs, and HIV test kits.

The QPPU team conducted four national quantification exercises with MoH programs and stakeholders for ARVs and opportunistic infection medicines, laboratory commodities, anti-TB medicines, and antimalarial commodities. Supply plans and funding gap analyses were also prepared as part of the exercises. The quantification reports are available on health.go.ug.publications or library.health.go.ug. In Q11, an MSH quantification expert trained the QPPU team and selected AIDS Control Program partners to compile and analyze data from health management information system 2 (HMIS2), WAOS, warehouses, and other data sources as part of the first biannual review. Activities also included an update of the national quantification and supply plans for ARVs, opportunistic infection medicines, and HIV test kits. Results of the analysis were discussed in two stakeholder meetings and consensus obtained on the updated assumptions, quantification, and supply plans. This exercise will be carried out every six months to ensure the closest alignment possible between forecasts to actual figures.

In addition, the QPPU provided the following support to the President's Emergency Plan for AIDS Relief (PEPFAR) and Global fund:

PEPFAR

- Prepared annual supply plans for PEPFAR-supported facilities for viral load and early infant diagnosis laboratory commodities
- Prepared supply plans for USAID-supported PNFP facilities for ARVs, opportunistic infection medicines, and laboratory commodities
- Held regular meetings with USAID's procurement agent and JMS to review and update shipment schedules
- Placed orders with PEPFAR $11.5 million funds for public sector ARV procurement

Global Fund

- Used funds from reprogrammed activities and procurement and supply management savings of $20.7 million to procure additional underfunded commodities (i.e., ARVs [$14.2 million] and HIV test kits [$6.5 million])
- Prepared supply plans and funding gap analyses for HIV/AIDS, TB, and malaria grant applications for January 2018 to December 2020 (total commodity value $420 million)
- Prepared Global Fund required report on the availability of key tracer commodities in health facilities for period July 2016 to February 2017

AIDS Control Program

Our UHSC team members seconded to the AIDS Control Program supported the program to implement the *2016 National ART guidelines* by:

- Updating the WAOS electronic system, order/report form, job aid, and dispensing log to reflect changes
- Developing training materials and training personnel on the new WAOS form and logistics management components of the new guidelines
- Updating the quantification software (Quantimed) parameters with the new formulations and patient targets

The UHSC team provided ongoing user support to maintain the greater than 90% facility reporting rate among the 1,586 ART sites and produced six WAOS bimonthly reports to update stakeholders about ARV stocks levels, consumption, and patient trends. They also participated in developing facility training materials on how to extract patient numbers from the MoH Open MRS system to fill the patient section of the WAOS form.

To strengthen the management and appropriate use of HIV commodities in ART sites, we collaborated with AIDS Control Program partners to develop an ART SPARS tool and training materials. The ART SPARS supervision tool has four indicator domains: ART patient management, ART stock management, traceability of ART commodities, and ordering and reporting quality. We started piloting the tool, and training and implementation will follow in the next quarter. Like EM SPARS, ART SPARS will be implemented in all public and PNFP ART sites by the 400-plus existing MMS.

National Malaria Control Program

UHSC supported the NMCP's response to the malaria epidemic in the Northern region by compiling distribution plans for indoor residual spraying commodities and following up with the PNFP facilities in the region to ensure that they had sufficient antimalarial medicines and tests. We also assisted the program to carry out the national 2016/2017 mass bed net distribution campaign by checking data accuracy on beneficiary households and the correct quantities of nets allocated and dispatched to the different sub counties.

We conducted two end-user verification surveys (#6 and #7) and presented the results to the NMCP, stakeholders, and USAID's President's Malaria Initiative team. We made changes to the survey data collection tool to reflect current areas of interest, such as the proportion of pregnant mothers who receive a net in their first antenatal care visit and the possible causes of the discrepancy between consumption and patient data.

National Tuberculosis and Leprosy Program

Handover of motorcycles to Ministry of Health's National TB and Leprosy Program

The TB SPARS program was rolled out in 20 pilot districts. UHSC trained the 20 TB SPARS supervisors on the facility assessment and monitoring tool and gave them training on basic computer skills in motorcycle riding; each was provided with a motorbike so they are able to carry out their bimonthly facility visits and reporting responsibilities. Pending finalization of the electronic data entry system, early in Year 4, the TB SPARS supervisors will be provided a computer and trained in electronic data entry. At the end of Year 3, 90 of the 200 TB treatment centers had received at least one TB SPARS supportive supervision visit.

Our analysis of TB SPARS data from the 50 health facilities visited in the practical orientation showed an average facility score of 12.9 out of a possible 25 (Figure 3).

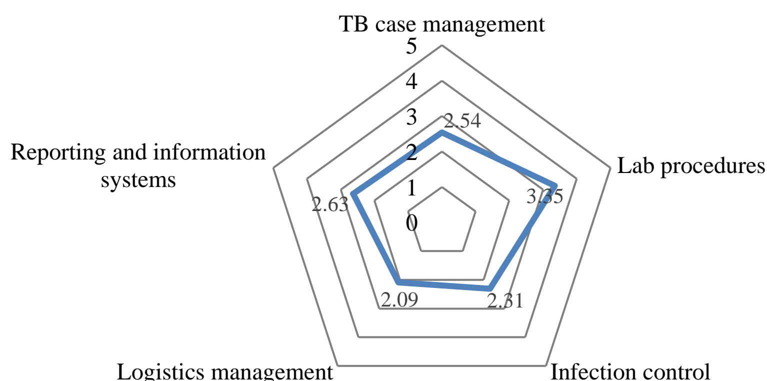


Figure 3: TB SPARS baseline performance for 50 facilities

Together with NTLP staff, we developed national supply plans to introduce the World Health Organization-recommended short-course treatment regimen for drug-resistant TB and new pediatric regimens. Every month we reported on the drug stock situation in 15 multi-drug resistant TB sites and worked with partners to address issues of shortages and overstocks where needed.

Uganda National Health Laboratory Services

In collaboration with the Uganda National Health Laboratory Services (UNHLS) staff, we trained 42 Lab SPARS supervisors (LSS) from 20 pilot districts (classroom and defensive motorcycle riding) and provided 17 of them with motorbikes and accessories required to carry out routine supervision; an additional 25 motorbikes will be allocated in early Year 4. The LSS completed the five-day practical field orientation in 16 of the 20 pilot districts, and they were equipped with Lab SPARS data collection tools, stock books, supervision books, calculators, and other tools to start their facility visits. The remaining four district supervisors will receive field orientation in the first quarter of Year 4. We completed the development of the Lab SPARS electronic reporting system and pretested in the field. All LSS will be trained to use the system in the first quarter of Year 4.

UHSC also supported the UNHLS to update and produce the March 2017 *National Guidelines for Standardization of the Test Menu, Technique and List of Supplies for Laboratories.* The guidelines provide a rational basis for cost-effective procurement and supply chain management of a standardized set of quality laboratory commodities and supplies.

Challenges

QPPU

- Funding gaps for ARV medicines and TB laboratory commodities in the public sector that lead to stock outs at the central warehouse and at facility level
- Poor adherence to procurement plans and unpredicted delays in procurements
- Lack of consumption data on commodities
- Data accuracy, reliability, and timeliness continue to affect QPPU work

AIDS Control Program

- Poor ARV order quality leading to stock out and over stock in a number of health facilities
- Stock-outs of ARVs interrupting service delivery in a number of health facilities
- Lack of availability of some key health management information system and logistics management tools at facility level

NMCP

- Inadequate number and anticipated delay in the delivery of long-lasting insecticide treated nets may delay the completion of the ongoing mass campaign.
- Global shortage in artesunate injections has affected the in-country availability.
- Low central-level stock levels for most commodities except for facility-level overstocks for artemisinin-based combination therapy (ACT)s. This may be attributed to ordering and distribution practices in the public sector.

NTLP

- Development of the TB medicines online ordering system failed to start due to delays in hiring the consultant with MoH resources.
- Short-term stock unavailability for some second line anti-TB medicines at the warehouse

UNHLS

- Delay in procurement of equipment for the Lab SPARS pilot
- Lack of logistics management tools at facility level

Sub-result 2.2 District-level capacity for EMHS management and utilization strengthened

EM SPARS scale up and enhancement

In Year 3, 246 district MMS conducted a total of 3,976 EM SPARS visits to 2,129 facilities in the 84 UHSC-supported districts; 99% of facilities have had a least one EM SPARS supervision visit, and 68% have achieved the target performance score of 20 out of a possible 25 (Table 6).

Table 6: SPARS implementation in UHSC-supported districts, Year 3

Activity	Year 3 Target	Year 3 Achieved
Number of trained, active MMS	255	255
Number of replacement MMS practically oriented	42	42
MMS trained in defensive motorbike riding	0	14
Number of SPARS supervision visits conducted	6120	3976
Number of facilities supervised	2149	2129
Percent of facilities with at least one SPARS visit	100	99
Percent of facilities with SPARS score ≥ 20 of total number public/PNFP facilities	50	68

SPARS in regional referral hospitals

Performance of the regional referral hospitals has been poor, with only four out the 14 hospitals reaching a score of 18 out of 25. In collaboration with the SUSTAIN project, we instituted joint district MMS and regional pharmacist visits to regional hospitals to support EM SPARS implementation. In Q9, UHSC also began directly supporting EM SPARS implementation in Mbarara Regional Referral Hospital, which is not supported by SUSTAIN. UHSC expects to take on direct implementation of EM SPARS in all regional referral hospitals after the SUSTAIN project closes in September 2018.

Use of medicines management information for decision making

We continued to improve district management's use of EM SPARS and other data to identify poorly performing facilities and MMS and take action where needed to correct poor performance. Activities included the following—

- To increase DHOs' use of the information, we expanded the quarterly district EM SPARS report to include performance data on PFM, cost of SPARS implementation in the district, and GPP certification status of district facilities.
- Quarterly discussions were held with DHOs and MMS to discuss performance as well as other medicines issues in the district.
- Posters for individual districts showing EM SPARS performance and progress were produced to be put up in the district health office and chief administrative office early in Year 4.

Coordination, collaboration and sustainability

This year, we continued implementing the peer strategy to build the knowledge and skills of regional pharmacists ('peers') so that they can effectively play a future role in sustaining implementation of the district medicines management package. A UHSC technical adviser was hired and seconded to the Pharmacy Department to support the peer strategy as well as the transition of PIP and other interventions to the MoH. We trained the 14 regional pharmacists were trained on EM SPARS, supportive supervision, and video education. Together with the Pharmacy Department and UHSC, the peers developed quarterly work plans. The focus this year was to support EM SPARS and RxSolution performance within their own regional referral hospitals and other facilities within their area of responsibility. We developed performance targets to structure and monitor their supervisory work as in table 7 below.

Table 7. Regional pharmacist 'peer' activities, Year 3

Indicator	Baseline Year 2	Year 3
Regional hospitals achieving a score of 16 out of 20 in RxSolution	2	6
Regional hospitals achieving a score of 20 out of 25 in SPARS	0	2
Health facilities achieving a score of 20 out of 25 in SPARS	50%	68%
Number of supervisory visits implemented by regional pharmacists	0	132

During their supervisory visits the regional pharmacists targeted poorly performing MMS and strengthened HMIS 105 data quality audits and appropriate use of artesunate injection in the outpatient department.

At district level, DHO and UHSC conducted joint support supervision visits to the best two and worst two facilities in each of the 78 districts (total 312 facilities). We made the visits prior to the district coordination meetings so that observations on successful practices and problems could be shared. The meetings were attended by MMS, MB MMS, regional pharmacists, district health team members, facility in-charges, chief accounting officers, and district political leaders. The purpose of the coordination meetings was for key district stakeholders to review performance as well as to agree on actions to improve medicines management.

We participated in one district health management team meeting in Pader (the district operational plan meetings have since reduced in frequency after the closure of the USAID/SDS project). We made a joint USAID and UHSC field visit in Q9 to districts in the North (Moyo, Yumbe, and Arua) and South West (Mbarara, Kabale, and Sheema). Key findings and recommendations included the following—

- UHSC should take over direct implementation of SPARS in Mbarara Regional Referral Hospital because SUSTAIN and other implementing partners are not supporting it comprehensively
- RHITES-SW and other implementing partners are supporting SPARS implementation, but they are not following the recommended visit intervals and do not provide tools like stock books or have the knowledge and skills to adequately support health facility staff. UHSC needs to help the implementing partners to better manage the rollout of the SPARS package in their districts.
- UHSC needs to expedite the expansion of the roles and capacity of MMS so they can help facilities with SPARS, ART SPARS, PFM and the logistics management needed to reach PEPFAR 90-90-90 goals.

Efficiency and effectiveness of SPARS implementation

This year we intensified our efforts to ensure that EM SPARS is being implemented as efficiently and effectively as possible, with three main areas of focus—

- Strengthen the effectiveness of MMS by improving their knowledge and skills in supportive supervision. Collaborating with Makerere University and Harvard University, we developed a five-day supportive supervision training course covering areas such as communication, problem solving, target setting, feedback, tool use, and data interpretation. Videography was used as a training tool to enhance skills building. Makerere trained 300 participants in Year 3, including MMS, regional pharmacists, and MB MMS. A reference manual was developed and 600 copies distributed to the trainees for their use in the field.

- Roll out the new EM SPARS form, which was updated at the end of Year 2 to reflect current MoH program priorities and changes. In Q9, we conducted 16 two-day training sessions for 312 MMS to use the new form and to better understand specific indicators known to be problematic (e.g., stock book use). Pre- and post-training scores on MMS knowledge of correct use of the stock book improved from 60% to 100%. We also trained 13 JMS medical representatives and 19 implementing partner logistics advisors.

- Intensify performance monitoring of MMS and the linkage between performance and incentives. Table 8 summarizes the various activities we carried out to ensure EM SPARS performance efficiency and accountability.

Table 8. UHSC activities to improve efficiency and effectiveness of EM SPARS implementation, Year 3

Activity	Achieved in Year 3	Comment
Replace poor performing MMS	49 new MMS and MB MMS selected to replace poor performers	All new MMS received the full package of EM SPARS training
Replace most needed old motorbikes issued under SURE	81 new motorbikes procured for replacement	MMS with documented performance (average ≥ 24 SPARS visits per

Activity	Achieved in Year 3	Comment
		year) or MMS never provided a bike, were selected to receive a replacement bike
Replace old laptops issued under SURE	188 new laptops procured	MMS with documented performance (average ≥ 24 SPARS visits per year) or MMS never provided a computer were selected for replacement computer
Motorbike repairs and new tires provided to MMS if they conducted target number of facility supervision visits in the past year	71 motorcycles repaired and 272 sets of tires procured and 159 sets distributed to qualifying MMS	MMS target for repairs (20 visits from last repair), new tires (20 visits in last year)
100% verification of SPARS visit reports and data quality audits; record of MMS visit must be in supervision book for payment	100% of 3976 reported facility visits were verified through phone calls; 4 physical audits made where visit queried	Four visits queried further investigated, all passed audits
Phone calls and emails to MMS about facilities due for visit (from April-September 2017)	There was a 40% reduction of facilities exceeding their supervision intervals from April 2017 to September 2017	All MMS called three times every month for supervision planning, targets and reporting
Track percentage of facilities with improved, decreased or stagnant performance on SPARS indicators	Overall, there is an improvement in percentage of facilities reaching acceptable score of 20 out of 25 in SPARS from 56% at the end of Year 2 to 68% at end of Year 3. Complete filling out of the stock card and correct use of the stock book are the lowest performing indicators, just hitting the 60% mark	Correct use of stock card and stock book will be further strengthened through implementation of PFM
Monthly performance reviews of UHSC district team staff;	In Q11 top rank was West Nile, lowest Karamoja	Ranking based on average facility EM SPARS score and number of visits conducted in a region
Performance targets set for regional pharmacist peers	2 out of 14 regional hospitals scored 20 out of 25	Targets: 7 of 14 regional hospitals will achieve score of 20 for EM SPARS and score 16 for RxSolution
2017 SPARS good performance recognition awards.	Procured rewards worth $260,000; they will be distributed in Q13 of Year 4. Rewards include district posters, clocks, water dispensers, printed materials, wall thermometers, temperature monitoring tools	
Specific reward for facilities and MMS consistently achieving 80% on correct use of stock book	Stock book use increased from 27% to 60%	PFM roll out contributed greatly to improvement in stock book use

Facility commodity tracking and accountability

The HMIS 016 dispensing log was modified after discussions with the Pharmacy Department, regional pharmacists, MMS, and facility storekeepers on how to improve commodity tracking from facility stores to inpatient and outpatient dispensing points. The modified dispensing log was pilot-tested in five health facilities and will be rolled out next year along with detailed guidelines. To improve accountability and optimize medicines management, MMS focused this year on ensuring that facilities adhere to the one facility-one stock card principle. The target is for 100% of facilities to be in full compliance by end of Year 5. At the Pharmacy Department‘s request we developed, printed, and distributed 5,000 copies of a pocket manual on policies and procedures for facility-level commodity management.

Implementing partners

In Year 3, we continued our efforts to improve EM SPARS implementation in the 38 districts supported by other US government implementing partners. We trained 19 logistics advisors and information technology staff on the new EM SPARS form and trained them in how to generate SPARS reports for their districts. The Pharmacy Department approved the SPARS implementation guidelines for partners, and we assisted the recently awarded RHITES EC and IDI projects to prepare work plans for implementing EM SPARS. Partner implementation of EM SPARS improved somewhat in the last quarters of this year (Table 9). Substantive progress can only happen when the implementing partners provide financial and technical resources to implement the full SPARS package in their districts.

Table 9: EM SPARS implementation in 38 districts supported by other implementing partners

Activity	Q9	Q10	Q11	Q12	Year 3 Total
Number of replacement MMS practically oriented	0	0	0	0	0
Number of SPARS supervisions conducted	70	33	94	1	198
Number of facilities supervised	61	33	94	1	172
Percent of facilities with at least one SPARS visit	46	48	59	59	59
Percent of facilities with SPARS score of 20 or more	12	8	7	7	7

Pharmaceutical financial management

Under UHSC contract, Makerere University’s Pharmacy Department conducted the five-day PFM classroom training for 244 MMS (120% of Year 3 target). We also rolled out PFM practical training, which covers the use of the PFM data collection tool, files, and job aids and also how the MMS should mentor and coach health facility staff on PFM. By the end of Year 3, 205 MMS (103% of Year 3 target) completed the practical training on procurement planning as part of PFM. Over 80% of the MMS trained have implemented at least one PFM supervision session. To date, 620 PFM supervision visits have been conducted in 440 facilities (46% HCII, 33% HCIII, 16% HCIV, and 5% hospitals) in 75 districts (Table 10).

We developed and pretested the PFM electronic reporting tool; revisions are being made based on the pretest and the final tool will be rolled out in Year 4.

Table 10: Status of PFM roll-out in government facilities, Q12

Indicator	Year 3 Target	Year 3 Achieved
Number of MMS completed PFM classroom training	204	120% (244)
Number of MMS completed practical orientation on procurement planning (Visit 1)	200	103% (205)
Number of districts with an MMS who is both classroom trained and practical orientated in procurement planning (Visit 1)	75	100% (75)
Number of PFM supervision visits conducted	300	207% (620)
Number of facilities that have received at least one PFM visit	300	177% (531)

To prepare for PFM rollout in the PNFP sector, we briefed managers of the four medical bureaus on the PFM intervention and implementation plan. We drafted a special PFM manual for the PNFP sector to include cost recovery, and Makerere trainers reviewed it. In early Year 4, we will organize a Delphi workshop to finalize the module and training materials and then roll out PFM in PNFP facilities.

Challenges

- It took six months for USAID to approve the UHSC-Makerere contract, delaying implementation
- Procurement planning and ordering rely on stock book use at facility level. While facility capacity on stock book use has been built through SPARS, their use is still suboptimal.
- MMS have multiple roles and thus we have had to work with the district team to develop a strategy that ensures that they are used more efficiently

Appropriate medicines use

Appropriate medicines use unit at MoH Pharmacy Department

As planned, this year we hired a medical officer to work in the Pharmacy Department's AMU unit. The AMU team supported the country's efforts to implement the World Health Organization's new global recommendations on controlling antimicrobial resistance by participating in the development of the national antimicrobial resistance strategy under the coordination of the Uganda National Academy of Science. We also helped prepare the antimicrobial resistance component for the World Health Organization-led joint external evaluation exercise that took place in June 2017, and the team is leading a steering group to establish a surveillance system for antimicrobial consumption and use. A roadmap of activities has been drafted for review in the first AMU advisory group meeting. The AMU unit made presentations on antibiotic use from national SPARS data and antibiotic issues in the *Uganda Clinical Guidelines 2016* in the first national conference on antimicrobial resistance held November 20-21, 2016.

Uganda Clinical Guidelines and Essential Medicines and Health Supplies List of Uganda

In October 2016, UHSC held a one-day stakeholder workshop to discuss the final drafts of the UCG and EMHSLU. UHSC supported the final editing, layout, and printing of 40,000 copies of the UCG and 10,000 copies of the EMHSLU; they will be distributed in the first quarter of Year 4. In September 2017, we also supported a launch event with the first 1,000 copies. An interactive PDF version of the UCG was released online in January 2017. UHSC is proposing

that the AMU advisory group, which was formally appointed this year, oversee future updates of the UCG and EMHSLU as part of their mandate to steer and coordinate policies and interventions related to appropriate medicine use. Dr Monica Imi was invited to attend a consultative meeting in Geneva sharing our experience with the development of the UCG.

National and hospital medicines and therapeutic committees

The UHSC-supported pilot to reactivate medicines and therapeutic committees (MTCs) is well underway. MTC staff in three of the five regional referral hospitals that we assessed were trained on MTC function and roles, AMU principles, and practical steps to identify, investigate, and address medicines use issues. The MTCs successfully carried out drug indicator surveys and medicine use evaluation studies in their facilities and presented their study results and proposed intervention strategies during a workshop in June. The strategies include decentralizing testing services, increasing the availability of rapid diagnostic test (malaria), and additional education and performance feedback for prescribers. The AMU unit is taking the lead in the coordination, integration, and harmonization of the approaches and activities of different stakeholders who want to support MTCs.

Improve diagnosis and treatment for one priority condition

Our literature review and analysis of end-user-verification surveys and other data on malaria case management showed that provider adherence to the test and treat policy has significantly improved in the last two years, especially at lower level facilities; the improvement may be due in part to USAID district interventions and EM SPARS supportive supervision visits, which focus on malaria treatment and testing practices. There are, however, consistent discrepancies between warehouse issues of malaria commodities and morbidity data; the AMU unit is analyzing data on issues of malaria commodities at national level and designing and testing tools for in-depth investigations at facility level in collaboration with the MTCs. We prepared a draft report of the initial findings, which is under internal review.

Challenges

- Coordination and harmonization of AMU activities across multiple stakeholders is necessary but not always easy

Sub-result 2.3: Country capacity to manage EMHS enhanced through pre-service education

Medicines management, information technology, and pharmaceutical finance incorporated into pre-service training

This year, our partner Makerere University College of Health Sciences Pharmacy Department finished helping 13 health training institutions to incorporate medicines management modules into their pre-service training curricula. Makerere provided refresher training to 25 tutors and mentored them to ensure that they are providing consistent, quality student training. The modules are now being taught in 13 health training institutions, including—

- Three pharmacy schools (Kampala International University, Mbarara University of Science and Technology, Makerere College of Health Sciences)
- Two medical schools (Busitema University Medical School, Gulu University Medical School)
- Four nursing schools, three clinical officer schools, and one pharmacy technician school

Makerere University also adapted PFM and RxSolution training modules into their own curricula and assisted one pharmacy technician school and three pharmacy undergraduate schools to incorporate the modules into their own curricula. UHSC trained 20 tutors from the schools, which will add the PFM and RxSolution modules in next academic year that started in October 2017. The incorporation of medicines management topics into the preservice curricula of heath training institutions was backed by the Ministry of Education and Sports, MoH, the National Curriculum Development Centre, and affiliated health regulatory agencies and boards.

RESULT 3: INCREASED AVAILABILITY AND ACCESS TO VITAL MEDICINES AND HEALTH SUPPLIES AMONG PRIORITY POPULATIONS

Sub-result 3.1 Increased access to RMNCAH commodities

Collaboration and coordination with MoH and RMNCAH partners

Throughout the year, UHSC participated in regular coordination meetings with the Pharmacy Department, Maternal and Child Health Technical Working Group, and Reproductive Health Commodity Security Group, among others; however, our participation in the vaccine supply chain group was perhaps the most important. We participated in this year's UNICEF-led assessment of Uganda's vaccine supply chain system, and with the other group members, we made strides towards integrating vaccines into the MoH's mainstream commodity quantification, supply planning, and monitoring structures. Among the recommendations were that the Uganda National Expanded Program for Immunization should adopt the SPARS approach for supervision and capacity building for vaccine supply chain system and to integrate vaccines and immunization supplies into RxSolution. This year, MoH issued a directive for the integrated storage of vaccines and oxytocin in health facilities without suitable cold chain facilities. UHSC supported the MoH to develop a job aid for DHOs and health facilities, and we plan to consult with Uganda National Expanded Program on Immunization to develop comprehensive cold chain management guidelines.

Increasing access through iCCM and the 13 lifesaving commodities

iCCM commodities. With our support, the QPPU established an iCCM commodity pipeline tracking database which is updated with monthly information from NMS on receipts, issues, and stock levels. We also updated the 2017 annual supply plan to coordinate the timing and product quantities coming from the different donors and NMS and developed commodity distribution plans for 26 districts that are scaling up iCCM with Global Fund support. We distribute bimonthly iCCM stock status reports, quarterly iCCM summary performance reports with current iCCM coverage, facility reporting rates, and data on iCCM indicators to stakeholders in Commodity Security Group and iCCM technical working group meetings. Because of the increased availability of information and coordinated supply planning, the MoH and partners were better able to plan and implement the scale up of iCCM to 66 districts by September 2017 and take action on supply chain obstacles.

Contraceptives and reproductive health commodities.

This year, UHSC helped the MoH develop and implement a phase-in plan to introduce Implanon NXT and Sayana Press into the country's contraceptive method mix. We engaged MMS to collect stock and consumption data from 465 health facilities in 57 districts and identified where

the new products should be introduced with minimal risk of wasting usable products already in the system. We reviewed the quantification of family planning and reproductive health products to ensure appropriate stock of both products during the phase-in and supported the Reproductive Health Division to train staff on the correct usage of these products in three regions. We developed a report format to summarize key reproductive health and family planning commodity data from DHIS2, PIP, and QPPU stock status analyses. This report will be produced quarterly and presented in reproductive health/family planning technical meetings to aid national-level decision making. We also compiled and submitted four USAID Procurement Planning and Monitoring Reports on contraceptive stock status in the country.

Nutrition products.

Following completion of a UNICEF-led nutrition supply chain assessment, we are supporting the integrated supply management of nutrition supplies by including them in QPPU national quantification for EMHS.[2] The quantification exercise for 2018-2020 will be carried out in October 2017 with support from UNICEF, NMS, and the MoH Child Health Division. The result will help NMS include nutrition commodities in their routine deliveries to health facilities.

RMNCAH supply chain management strategy

Working together with the MoH and partners, we successfully implemented the Year 3 planned activities under the *Community Health Supply Chain System Strengthening Strategy and Implementation Plan 2016–2020.* The aim of the strategy is to strengthen the community-level supply chain system to increase access to RMNCAH commodities approved for distribution at the community level and to build central and district capacity to implement the harmonized community supply system.

With our support, the MoH-led multi-stakeholder Community Supply Chain Task Team developed and pre-tested new standardized demand-based community logistics management procedures, tools, and job aids. The Maternal and Child Health Cluster and MPM TWG approved four new standardized tools: (i) consumption log, (ii) dispensed, stock balance, and request summary, (iii) magic calculator, and (iv) product issue log. The eight-month pilot phase is well underway in four of the five selected districts (Kayunga, Mubende, Abim, and Ntoroko). Under the pilot, 18 national trainers trained 496 community health workers, 46 health facility staff members, and 21 district health team members to implement the standardized community logistics management tools and procedures in iCCM and community-based family planning programs. The pilot is being implemented in collaboration with UNICEF, Save the Children, PATH, FHI 360 and RHITES-SW. Feedback from community health workers and facility staff has been very positive; they welcome the standardized, streamlined needs-based tools. Results from the study we designed to evaluate the pilot will inform future scale-up.

Saving Mothers Giving Life

There were no Saving Mothers Giving Life activities this year. Instead, UHSC collaborated with the MoH to ensure continuity of the group antenatal care approach initiated under the STAR-E Program. Currently implemented in six health facilities in Mbale and Bududa districts, the initiative is an innovative women-centered approach to antenatal care using facilitated discussions. A cohort of six to10 women meet as a group with the midwife as facilitator and

[2] Nutrition commodities include: F75 therapeutic diet, sachet 410g/CAR-20,F100 therapeutic diet, sachet 456g/CAR-30,therapeutic spread, sachet 92g/CAR-150, ready-to-use therapeutic feeds (RUTF), combined mineral vitamin mix powder, ReSoMal, iron tablet, and vitamin A

share information and experiences and also learn how to care for their pregnancy and unborn child. A qualitative assessment conducted in May 2017 by a team from MSH home office found that the groups enhanced individual learning, and because of the closer relations with the health workers, the women were more willing to deliver at the health facility. We presented these preliminary qualitative findings to the Maternal Child Health Cluster.

Challenges

- Insufficient funding and irregular, kit-based supply of iCCM commodities hampers scale up of iCCM program
- Delays in release of funds by implementing partners affected timeliness of community supply chain implementation in some districts
- MoH has not defined a standardized set of products for village health teams to distribute, making it a challenge to standardize recording and reporting tools
- Lack of appropriate technology to collect and aggregate logistics data from community level
- MoH directive temporarily halting village health team training delayed implementation of the community supply chain pilot

MONITORING, EVALUATION, AND REPORTING

M&E reporting

Activity, monitoring, evaluation, and learning plan indicator narratives

Table 11 summarizes UHSC and Presidents Malaria Initiative indicator data for Year 1, Year 2, and Year 3. The final column of the table compares Year 3 results with Year 3 targets: green shows 100% or more achievement, yellow 50% to 99% achievement, and red indicates less 50% achievement. (* indicates cumulative totals).

Table 11: Activity, monitoring, evaluation, and learning plan indicator summary

#	Indicator	Disaggregation	Baseline	Y1	Y2	Y3	Y3 Target	Achieved
1	Number of policies/guidelines completing each process/step of development as a result of USG assistance	Analysis	-	2	3*	6	4*	Green
		Stakeholder consultation	-	2	3*	4	4*	Green
		Drafting	-	2	3*	3	4*	Yellow
		Approval	-	1	1*	3	4*	Yellow
		Dissemination/ Implementation	-	1	1*	3	3*	Green
2	Percentage availability of supplies for a basket of 41 medicines and health supplies in last 3 months at NMS and JMS	EMHS	-	-	48%	68%	70%	Green
		ARVs	-	-	76%	67%	70%	Green
		TB	-	-	79%	73%	70%	Yellow
		LAB	-	-	57%	59%	70%	Yellow
		RMNCH	-	-	62%	66%	70%	Yellow
3	Average percentage availability of a basket of 41 commodities based on all reporting facilities in the previous quarter	EMHS	-	-	89%	86.3%	89%	Yellow
		ARVs	-	-	92%	82%	89%	Yellow
		TB	-	-	85%	79%	89%	Yellow
		LAB	-	-	88%	84%	89%	Yellow
		RMNCH	-	-	89%	83%	89%	Yellow
4	Number of wholesalers licensed according to the new GDP guidelines		-	-	-	497	350	Green
5	Number of government and PNFP health facility pharmacies inspected for Good Pharmaceutical Practices (GPP)	Government	797*	797*	797*	1363*	1500*	Yellow
		PNFP	142*	142*	142*	255*	500*	Yellow
6	Percentage of government and PNFP health facility pharmacies certified according to Good Pharmaceutical Practices (GPP)	Government	54%	54%	54%	55%	60%	Yellow
		PNFP	59%	59%	59%	64%	65%	Yellow
7	Number of hospitals with a functional Logistics Management Information System	Government	28	7	7	18	45	Red
		PNFP	15	4	6	12	40	Red
8	Number of health workers trained in electronic stock management		-	126	123	152	98	Green
9	Number of individuals trained to conduct supply chain, inventory management, and supportive supervision.	Supportive Supervision	-	-	138	153	275	Yellow
		Medicines Management	-	97	146*	-	-	Green
		PFM	-	-	-	245	204	Green
10	Percentage of facilities with a SPARS score of 20 and above	Government	41%	41%	48%	68%	50%	Green
		PNFP	35%	35%	43%	50%	50%	Green
11	Percentage of order based facilities with a PFM score of 80% and above	Hospitals	63%	63%	63%	17%	30%	Yellow
		HCIV	51%	51%	51%	25%	30%	Yellow
12	Average percentage of cases of priority diseases treated in compliance with standard treatment guidelines in reporting period	Malaria	70%	68%	74%	85%	70%	Green
		Upper respiratory tract infection	41%	33%	35%	51%	60%	Yellow
		Diarrhea	45%	50%	54%	66%	60%	Green

#	Indicator	Disaggregation	Baseline	Y1	Y2	Y3	Y3 Target	Achieved
13	Percentage of health facilities submitting a quarterly iCCM report		-	8%	7%	12%	15%	
President's Malaria Initiative Indicators								
14	Number of artemisinin-based combination therapy (ACTs) treatments purchased with USG funds		799,620	1,769,100	3,292,680	2,063,160	2,383,996	
15	Number of malaria rapid diagnostic tests (RDTs) purchased with USG funds		-	445,850	2,217,375	947,600	2,953,886	
16	Number of insecticide treated nets (ITNs) purchased with USG funds		6,199,795	3,926,080	490,000	1,000,000	1,991,632	
17	Number of artemisinin-based combination therapy (ACTs) treatments purchased in any fiscal year with USG funds that were distributed.		43,140	1,660,860	3,062,610	1,241,040	2,383,996	
18	Number of rapid diagnostic tests (RDTs) purchased in any fiscal year with USG funds that were distributed		179,950	750	2,086,400	1,725,300	2,953,886	
19	Number of insecticide treated nets (ITNs) purchased in any fiscal year with USG funds that were distributed		-	640,860	3,020,691	1,914,744	1,991,632	
20	Average stock out rate of contraceptive commodities at Family Planning service delivery points.	Depo-Provera	-	-	-	20%	11%	

1. Number of policies/guidelines completing each process/step of development as a result of US government assistance.
The Year 3 target of completing the first four stages of development—analysis, stakeholder consultation, drafting, and approval—was achieved for two UHSC-supported policies. The policies include the establishment of a PNFP credit line at JMS for essential medicines and equity in the allocation of Vote 116. The establishment of a PNFP credit line at JMS for essential medicines has gone through all stages including dissemination.

2. Percent availability of 41 tracer medicines and health supplies over a period of 12 months at NMS and JMS[3]. During the reporting period, the overall availability of the 41 tracer items was 68% at the central warehouses. Availability of one basket—TB—surpassed the Year 3 target by 3 percent points whereas the EMHS, ARV, laboratory and RMNCH baskets were all below the Y3 targets. Availability of EMHS was lowest at central warehouses in the third quarter of Year 3 at 50%.

3. Average percentage availability of a basket of 41 commodities based on all reporting facilities in the previous 12 months. The average availability of the 41 commodities was 84% in 2,743 reporting facilities. The EMHS basket had the highest average availability of 86% and was closely followed by the laboratory and RMNCH baskets, with 84% and 83% availability respectively. Compared to the Year 3 targets, all the baskets of 41 commodities were below 89%.

4. Number of wholesalers licensed according to the new Good Distribution Practices guidelines
In total, 497 wholesalers were licensed according to the new Good Distribution Practices guidelines in Year 3, surpassing the target of 350.

5. Number of government and PNFP health facility pharmacies inspected for Good Pharmaceutical Practices. A total 1,618 of health facilities (1,363 government and 255 PNFP) were inspected in the final weeks of Year 2.

6. Percentage of government and PNFP health facility pharmacies certified according to GPP out of the number of inspected facilities. In total, 55% of government and 64% of PNFP facility pharmacies inspected by NDA are now certified as meeting GPP standards.

7. Number of hospitals with a functional logistics management information system. This year, the UHSC continued to support the rollout of RxSolution in both the UHSC and in other implementing partner-supported districts. Presently, 121 facilities have RxSolution installed. Among these, 61 are hospitals in UHSC supported districts, of which 49 were assessed and had an average score of 74%. A total of 13 (seven government and six PNFP) hospitals were fully functional with a score of 100%. For a facility to be fully functional, it must meet all the criteria set without failing one criterion. For instance, of the 36 hospitals that did not have a score of 100%, 83% (30) had not either entered their stock, purchase orders, requisition, or orders into RxSolution, which could be attributed to lack of human resources or heavy workload at the facility stores. Given the stringency of the indicator, we are considering a revision to consider a facility to be fully functional if it has a score of at least 64%.

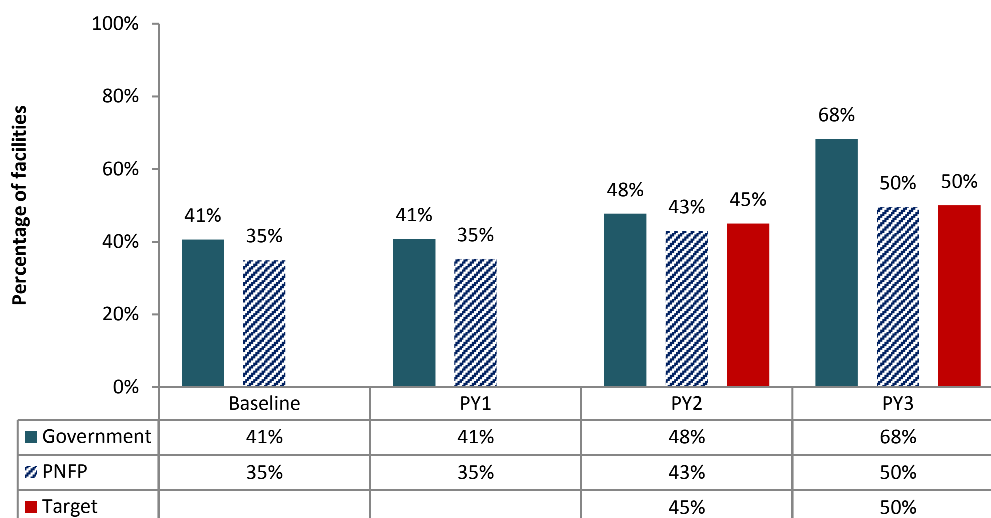
8. Number of health workers trained in electronic stock management (RxSolution). In Year 3, we trained 237 health workers on the use of RxSolution. Of these, UHSC is only counting the 152 health workers who were trained in courses sponsored by UHSC and trained by UHSC staff; the

[3] JMS manages 16 of the 41 commodities.

other 85 workers were trained in courses facilitated by UHSC staff but sponsored by other implementing partners.

9. Number of individuals trained in supply chain and PFM and supportive supervision. In Year 3, 244 MMS and one Makerere University staff person were trained in PFM, surpassing the Year 3 cumulative target of 204. This year, 153 individuals were trained in supportive supervision, which was 56% of the year's target of 275. No individuals were trained in medicines management this year because UHSC had already achieved the project target.

10. Percentage of facilities with a SPARS score of 20 and above. This year, more than half (64%) of all health facilities attained a SPARS score of 20 of 25. The percentage of government facilities with a score of 20 and above was 68%, which was higher than the Year 3 target of 50%. Among PNFP facilities, 50% attained a score of 20 or more. Compared to Year 2, this was a 20 percentage point increase for government facilities and an 8 percentage point increase for PNFP facilities (Figure 4).

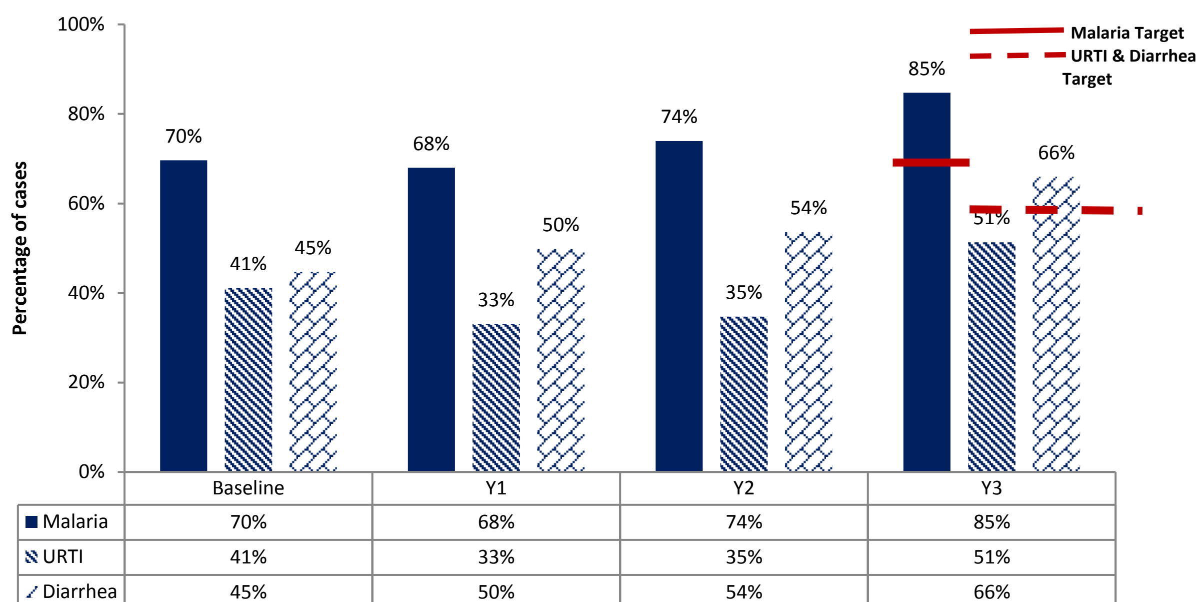


	Baseline	PY1	PY2	PY3
Government	41%	41%	48%	68%
PNFP	35%	35%	43%	50%
Target			45%	50%

Figure 4. Cumulative percentage of facilities with a SPARS score of 20 or more

11. Percentage of order-based facilities with a PFM score of 16 and above. In Year 3, MMS were trained and oriented to conduct PFM supervisions; 23% of order-based facilities visited attained a SPARS score of 80% or above. The percentage of hospitals and HCIVs with a score of 80% or above was 17% and 25%, respectively, which was lower than the Year 3 target of 30%.

12. Percentage of priority conditions treated in compliance with standard treatment guidelines. Adherence to standard treatment guidelines was 85% for malaria cases and 66% for diarrhea cases, exceeding this year's targets of 70% and 60%, respectively. Only 51% of upper respiratory tract infection cases were managed in compliance with standard treatment guidelines, below the 60% target for this year (Figure 5).



	Baseline	Y1	Y2	Y3
Malaria	70%	68%	74%	85%
URTI	41%	33%	35%	51%
Diarrhea	45%	50%	54%	66%

Figure 5. Adherence to standard treatment guidelines for three conditions

13. Percentage of health facilities submitting a quarterly iCCM report. The percentage of facilities submitting the quarterly iCCM/village health team report was 12%, showing a improvement of five percentage points in performance as compared to the previous year. While this is an improvement, the observed performance is below the Year 3 target of 15%. This could be as a result of delays in the processes that are currently followed to prepare and submit these reports to the national system.

14. Number of ACT treatments purchased with US government funds. . In Year 3, 2,063,160 ACT treatments were purchased with US funds, a decrease from 3,292,680 last year. However, the number of treatments purchased in Year 3 was 13% less than the 2,383,996 treatment estimated to be procured.

15. Number of rapid diagnostic tests purchased with US government funds. A total of 947,600 malaria RDTs were purchased with US funds this year, 32% of the estimated 2,953,886 tests to be procured. This was a 57% decrease in the quantity of RDTs procured by PMI last year.

16. Number of insecticide treated nets purchased with US government funds. A total of 1,000,000 insecticide treated nets were purchased with US funds, 50% of the 1,991,632 nets estimated to be procured this year.

17. Number of ACT treatments purchased in any fiscal year with US government funds that were distributed in this reported fiscal year. A total of 1,241,040 ACT treatments purchased with US funds were distributed to PNFP health facilities by JMS this year, which was 52% of the projected quantity. This year, 1.8 million less ACTs were distributed than last year (Figure 6).

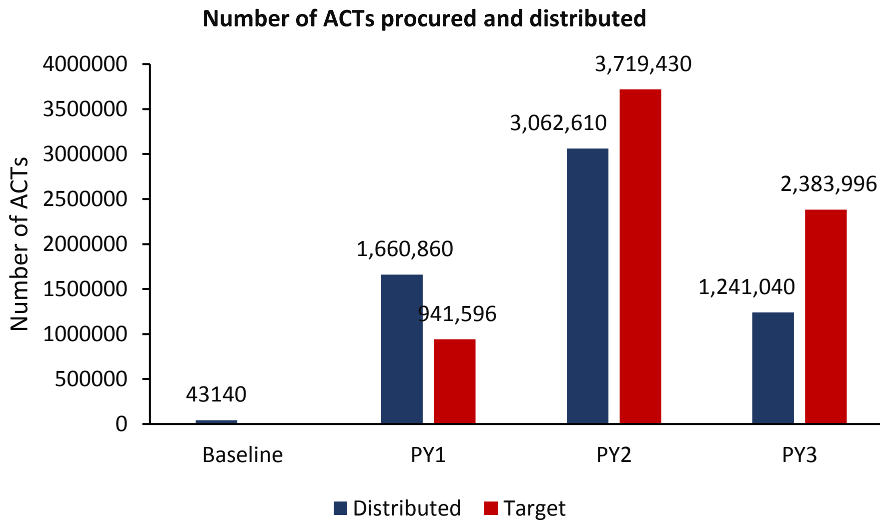


Figure 6. Number of ACTs procured with US government funds and distributed this year

18. Number of RDTs purchased in any fiscal year with US government funds that were distributed in this reported fiscal year. A total of 1,725,300 RDTs procured with US funds were distributed this year, which is 58% of the estimated annual quantity to be distributed. This is a decrease from 2,086,400 procured and distributed in year 2 (Figure 7).

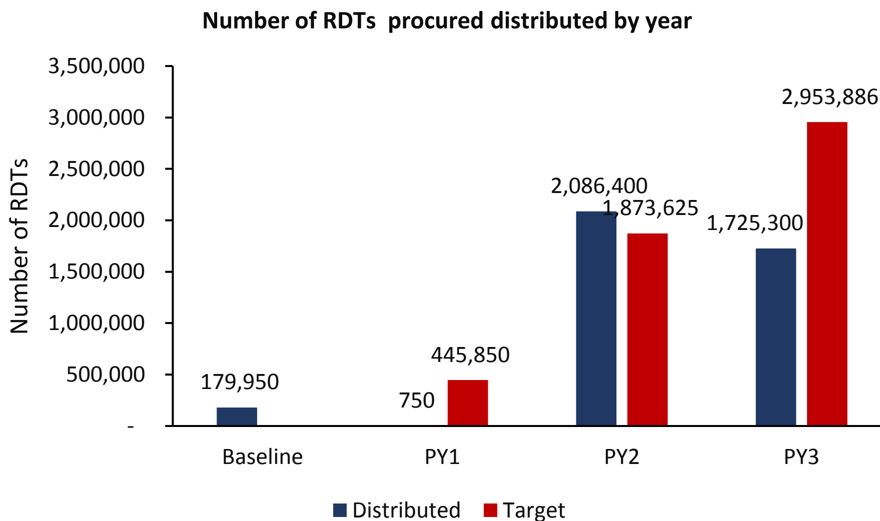


Figure 7. Number of RDTs procured by US government that were distributed this year

19. Number of insecticide treated nets) purchased in any fiscal year with USG funds that were distributed in this reported fiscal year. This year, 1,914,744 insecticide treated nets procured with US funds were distributed, which was 96% of the 1,991,632 nets projected to be distributed during the year.

20. Average stock out rate of contraceptive commodities at Family Planning service delivery points. This year, 20% health facilities were stock out with Depo-Provera which is above the target of 11% for the year.

Progress by result area and activity

Figure 8 provides a quick view of progress achieved in Year 3 for each sub-result area. We scored each activity listed in the Year 3 work plan related to its status at end of the year: 0% for not started, 25% for initiated, 50% for half-way completed, 75% nearly completed, and 100% for completed. Using this means of calculating progress, the overall average progress was 81% at end of Year 3.

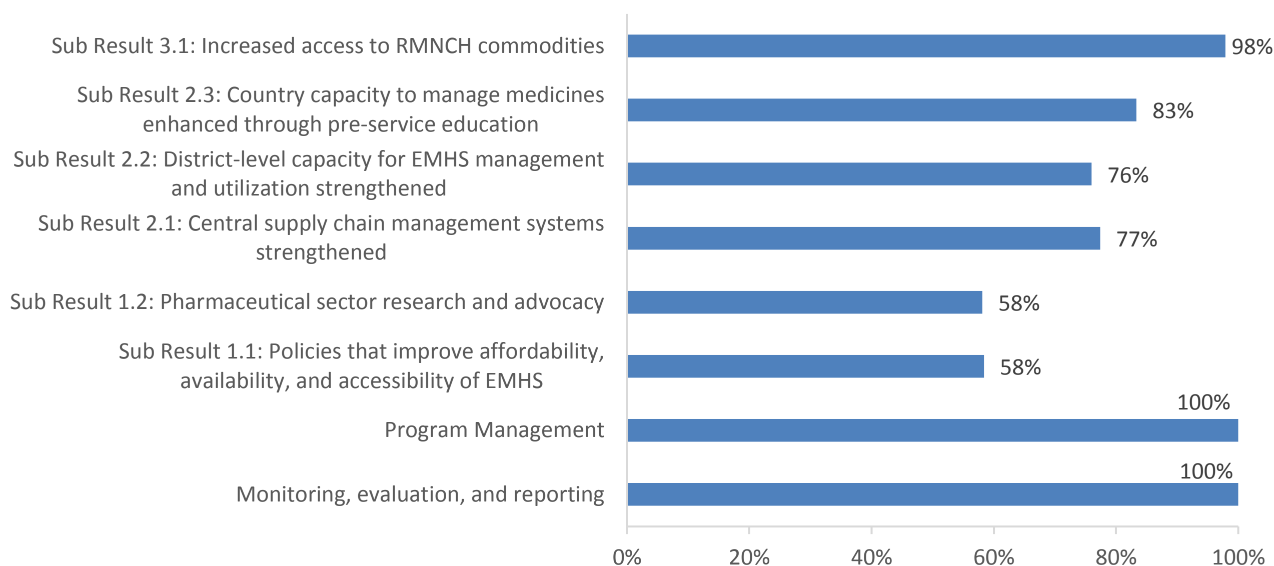


Figure 8. Progress by result area in year 3

MSH President Marian Wentworth visited Joint Medical Store and inspected the warehouse.

Figure 9 gives an overview of progress for sub-sub-result areas as per the approved Year 3 work plan. All activities (sub-sub-results) are measured and scored on the same five-level scale as above.

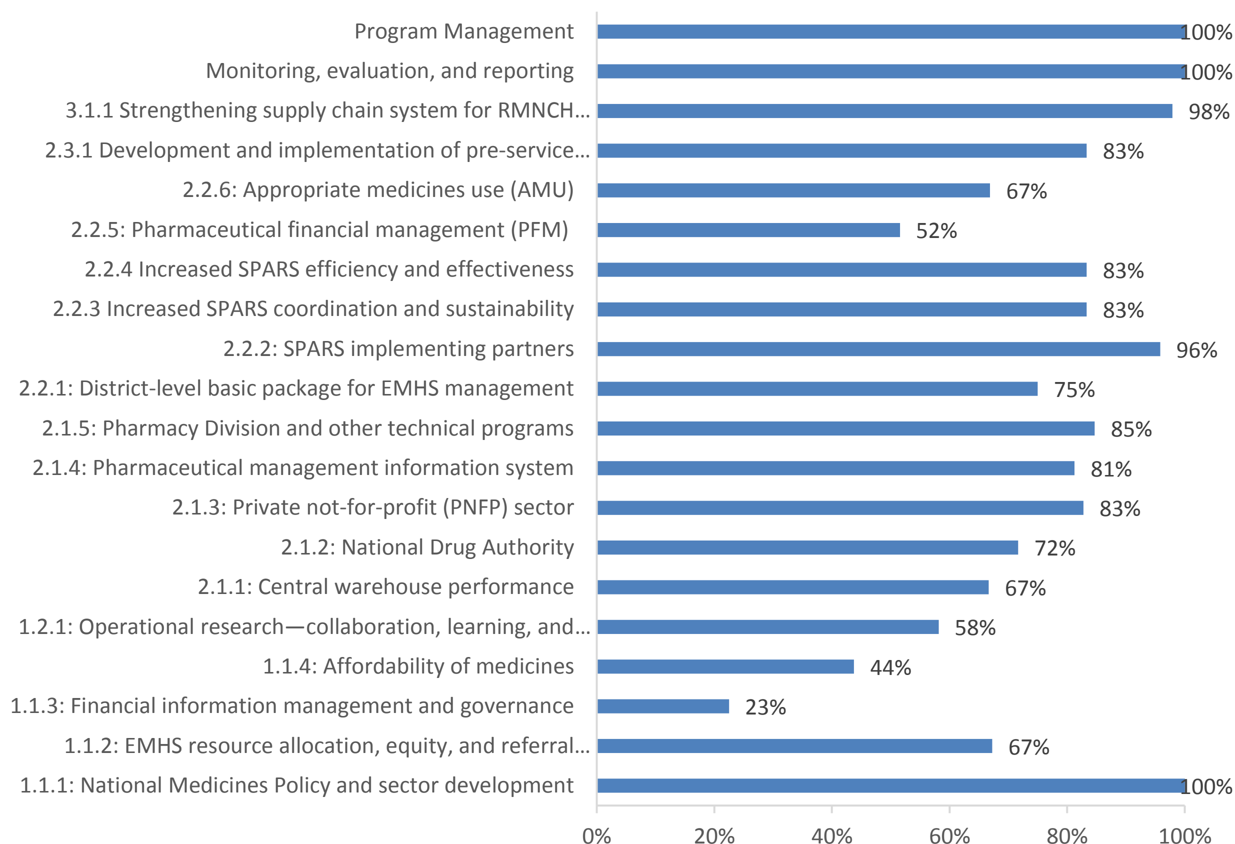


Figure 9. UHSC progress by sub-sub result (activity) in year 3

PROGRAM MANAGEMENT

In Year 3, UHSC's program management unit continued to support program implementation in collaboration with the MSH country operations management unit and home office. The unit prepared contracts, recruited staff and consultants, supported procurement, carried out regular budget monitoring and submission of financial reports, and coordinated the production and distribution of program information and branding materials.

The UHSC management team met every week, and regular meetings were held with Pharmacy Department and the USAID team. The Year 4 work planning retreat included wide stakeholder involvement, and the Year 4 work plan was drafted and submitted on time. We also submitted a revised program document for UHSC to include expansion to support scale up of Uganda's HIV/AIDS response with a budget of $35,590,862 over five years. The expansion plans covering Year 4 were included in the submitted annual Year 4 work plan. The proposed expanded budget also increased cost share to $1,779,543

Contract Management

With Harvard Pilgrim Health Care, UHSC signed Task Order #5 for their visit to the UHSC Kampala office on December 4–9, 2016 and Task Order #6 for their visit on August 6–11, 2017.

We signed a fixed-price contract #MAK 004 with Makerere University College of Health Sciences to conduct training in PFM.

Procurement

In Year 3 we completed the following procurement and distribution activities. Distribution of some of these items will be continued in the first quarter of Year 4—

- 250 laptops for MMS
- 156 motorcycles for MMS
- PIP support and server software
- 2 program vehicles
- 20 JMS utility shelves
- Printing of 40,000 copies of *Uganda Clinical Guidelines 2016*
- Printing of 10,000 copies of *Essential Medicines and Health Supply List of Uganda 2016*

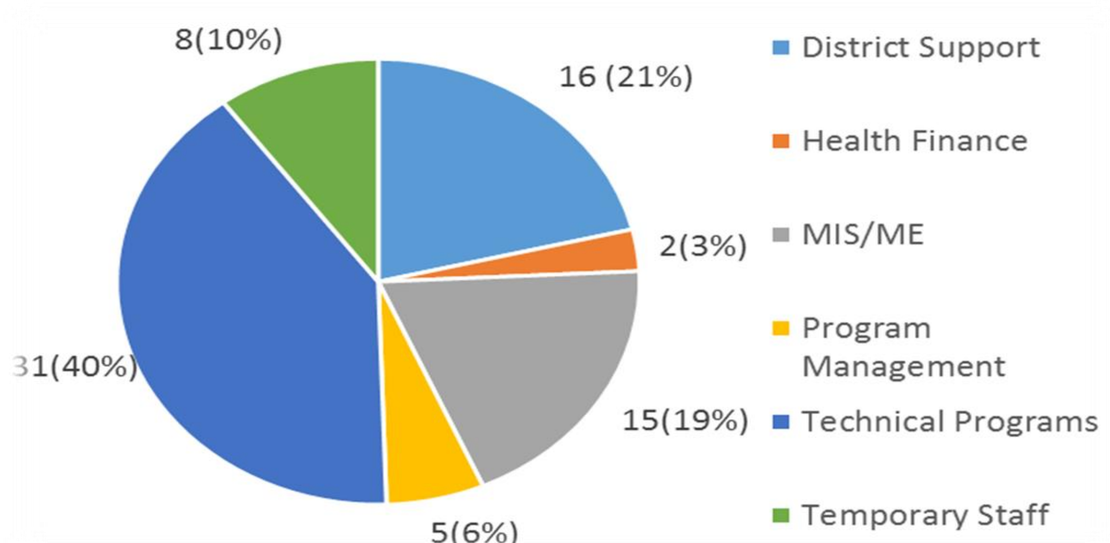
Procurement of the following items is underway—

- 13 motorcycles for Lab SPARS
- 29 motorcycles for viral load lab hubs
- Reward items for 2017
- Transportation of NMS containers to 112 districts
- Computers and accessories for pharmacy schools RxSolution pre-service training
- JMS costing study

Staffing

UHSC recruited 19 new staff members during the year: a Health Finance Technical Officer, SPARS MoH Coordinator, PIP/M&E Data Use Coordinator at the Pharmacy Department, two technical officers, two PIP principal programmers, a PIP Senior Technical Officer, a Senior Communications Officer, a Senior Communications Specialist, an M&E associate, a SPARS Technical Coordinator, and a Senior Operations Specialist. As of the end of Year 3, UHSC had 77 permanent and temporary staff members, including two partner staff members. Figure 10 shows the distribution of UHSC staff by program area.

Figure 10. UHSC staffing categories as of September 30, 2017



Staff training

During the year, we supported the following local and international training—

- Two NMS staff members to participate in an M&E training course in South Africa and one UHSC staff member and one MoH Pharmacy Department staff member to attend an international conference in Tanzania
- One staff member received training in "Quality of medical products and public health" at the Boston University School of Public Health
- One MOH and 11 UHSC and staff members received training in South Africa in eLearning training, Microsoft SharePoint development, and developing and implementing SQL databases to support functioning of the PIP

Visibility and communication

We produced two issues of the MoH Pharmacy Division's *Value Chain* newsletter and distributed 2,400 copies to USAID, implementing partners, MoH, national and regional referral hospitals, district health offices, and MMS. We promoted UHSC and USAID visibility by participating in different pharmaceutical sector conferences and workshops and by producing and distributing branded program items such as banners, posters, and stickers. UHSC staff attended and presented papers at five local conferences. As part of our visibility strategy, UHSC sponsored some of the activities of the Joint Annual Health Scientific Conference organized by the Makerere University and the first National Conference on Antimicrobial Resistance organized by Busitema University. We organized and supported the launch of the *Uganda Clinical Guidelines 2016* and *Essential Medicines and Health Supplies List for Uganda 2016*. We produced and submitted one success story to USAID and posted six success stories in the MSH intranet.

Program Finance

The current total obligation amount is US$21,988,165. The program spent an estimated 82% of its current obligations as of September 30, 2017. This is 60% of the total contract amount. Inception-to-September data includes contractual commitments and accruals. Note: August and September are not closed at this point, so reported expenditures are provisional. We are still working with the Uganda Global Fund Focal Coordination Office on getting supporting documentation for recording cost share expenses in the Navigator.
Table 12 summarizes the UHSC program annual budget against estimated expenditures as of September 30, 2017.

Table 12. UHSC budget against actual expenditure

	Line item	Expenditure			Project Budget (5 years)	% of Project Budget to date
		through June 2017	Jul-Sep 2017 (Provisional)	Total to date		
I	Total Direct Costs	$ 11,303,910	$ 1,710,188	$ 13,014,098	$ 19,409,635	67%
II	Subawards/Grants	$ 2,095,004	$ 244,115	$ 2,339,119	$ 6,111,232	38%
III	Total Indirect Costs	$ 2,448,430	$ 210,000	$ 2,658,430	$ 4,469,995	59%
	TOTAL	**$ 15,847,343**	**$ 2,164,304**	**$ 18,011,647**	**$ 29,990,862**	60%
	COST SHARE	**302,607**	-	**302,607**	**$ 1,500,000**	20%

Obligation to date	$ 21,988,165	100%
Expended to date	$ 18,011,647	82%
Obligation remaining	$ 3,976,518	18%

Life of project budget	$ 29,990,862
Expended to date	$ 18,011,647
Balance remaining	$ 11,979,215

Challenges

- Obtaining the needed documentation of cost share related to Global Fund activities