

SIAPS Quarterly Report

Project Year 5, Quarter 4

July-September 2016



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SIAPS 

The SIAPS logo features the word "SIAPS" in a bold, green, sans-serif font. To the right of the text is a stylized blue graphic of a person with arms raised in a 'V' shape, symbolizing achievement or progress.

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About SIAPS

The goal of the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program is to assure the availability of quality pharmaceutical products and effective pharmaceutical services to achieve desired health outcomes. Toward this end, the SIAPS result areas include improving governance, building capacity for pharmaceutical management and services, addressing information needed for decision-making in the pharmaceutical sector, strengthening financing strategies and mechanisms to improve access to medicines, and increasing quality pharmaceutical services.

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ACRONYMS AND ABBREVIATIONS

AAH	Action Against Hunger
ACT	artemisinin-based combination therapy
AIDS	acquired immunodeficiency syndrome
AMI	Amazon Malaria Initiative
AMR	antimicrobial resistance
APTS	Auditable Pharmaceutical Transactions and Services (Ethiopia)
ART	antiretroviral therapy
ARV	antiretroviral
CAMEBU	Central Essential Medication Purchasing Agency (Burundi)
CDC	US Centers for Disease Control and Prevention
CECOMA	Central Medical Stores (Angola)
CENAME	National Essential Drugs Procurement Center (Cameroon)
CHAI	Clinton Health Access Initiative
CMS	central medicine store
CNLS	AIDS Control Program (Cameroon)
CRMS	Continuous Results Monitoring System
DGFP	Directorate General of Family Planning (Bangladesh)
DIGEMID	General Directorate of Drugs and Medical Supplies (Peru)
DNME	National Directorate of Medicines and Equipment (Angola)
DPML	Department of Pharmacy, Medicines, and Laboratory (Burundi)
DRA	drug regulation authority
DRC	Democratic Republic of the Congo
DRS	Direction Régionale de la santé
DTC	Drug and Therapeutics Committee
EDT	Electronic Dispensing Tool
EHRIG	Ethiopian Hospital Reform Implementation Guideline
EMF	Emergency Medicines Fund
EUV	end-use verification (survey)
FDA	US Food and Drug Administration
FMHACA	Food, Medicines and Health Care Administration and Control Authority (Ethiopia)
FP	family planning
FY	fiscal year
GDF	Global Drug Facility
Global Fund	Global Fund to Fight AIDS, Tuberculosis and Malaria
HCW	healthcare worker
HIV	human immunodeficiency virus
HPD	Hospital Pharmacy Department
IMCI	Integrated Management of Childhood Illness
JSI	John Snow, Inc.
LMIS	Logistics Management Information System
M&E	monitoring and evaluation
MCH	maternal and child health

MDG	Millennium Development Goal
MDR	multidrug resistant
MNCH	maternal, neonatal, and child health
MOH	Ministry of Health
MOHFW	Ministry of Health and Family Welfare
MOHSS	Ministry of Health and Social Services
MSH	Management Sciences for Health
NDoH	National Department of Health
NHTC	National Health Training Centre (Namibia)
NMCP	national malaria control program
NMRC	Namibia Medicines Regulatory Council
NTP	national TB program
PAHO	Pan American Health Organization
PEP	post-exposure prophylaxis
PEPFAR	US President's Emergency Plan for AIDS Relief
PFSA	Pharmaceutical Fund and Supply Agency (Ethiopia)
PMI	President's Malaria Initiative
PMIS	pharmaceutical management information system
PMTCT	prevention of mother-to-child transmission
PNILP	national malaria control program (Burundi)
PNLP	national malaria control program (Guinea)
PNLS	national AIDS control program (DRC and Togo)
PNME	Program for Essential Medicines (Angola)
PPMRc	procurement planning and monitoring report for contraceptives
PPMRm	procurement planning and monitoring report for malaria
PSI	Population Services Inc.
PSM	procurement and supply management
PTCs	Pharmaceutical and Therapeutics Committees
PV	pharmacovigilance
RDT	rapid diagnostic test
SCMS	Supply Chain Management System (project)
SIAPS	Systems for Improved Access to Pharmaceutical Services
SOP	standard operating procedure
SPS	Strengthening Pharmaceutical Systems [Program]
STG	standard treatment guideline
SUGEMI	national pharmaceutical management system (Dominican Republic)
TB	tuberculosis
TIPC	Therapeutics Information and Pharmacovigilance Center (Namibia)
TOR	terms of reference
TOT	training of trainers
UCDC	Ukrainian Center for Disease Control
UNAM	University of Namibia
UNCoLSC	UN Commission on Life-Saving Commodities
UNICEF	United Nations Children's Fund
USAID	US Agency for International Development
WAHO	West Africa Health Organization

WHO World Health Organization
XDR-TB extensively drug-resistant tuberculosis

INTRODUCTION

The Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program, awarded by USAID in September 2011, strengthens the management of essential medicines and health supplies so that more people can access the health care they need. Now in its fifth year, SIAPS works with local counterparts and partners in 22 countries, and 2 regional programs in, Latin America and West Africa. SIAPS takes a comprehensive approach to improving pharmaceutical systems: enhancing countries' capacity to procure and distribute high-quality medicines and health technologies, while working with local partners to develop strong systems for pharmaceutical financing, human resources, governance, information, service delivery, and pharmacovigilance. By promoting local ownership of wide-ranging initiatives, stronger, more sustainable health systems overall are fostered.

The program's five result areas are as follows:

- Intermediate Result 1: Pharmaceutical sector governance strengthened
- Intermediate Result 2: Capacity for pharmaceutical supply management and services increased and enhanced
- Intermediate Result 3: Information for decision-making challenge in the pharmaceutical sector addressed
- Intermediate Result 4: Financing strategies and mechanisms strengthened to improve access to medicines
- Intermediate Result 5: Pharmaceutical services improved to achieve desired health outcomes

This report presents highlights of SIAPS's activities organized both by intermediate result area, representing multiple countries where we work, as well as by our global, regional, and country portfolios for the July through September 2016 period.

SELECT PROGRESS TOWARD RESULT AREAS

IR 1. Pharmaceutical Sector Governance Strengthened

The SIAPS approach to improving governance focuses on assisting countries in establishing policies and legislation that are supported by rule of law; organizational structures that can exercise appropriate decision making, authority, and oversight; transparent, ethical, and accountable systems and processes that are based on best practice norms and guidelines; and human resource management systems that promote effective performance and ethical practices. One of SIAPS' primary strategies for improving governance in the pharmaceutical sector is to strengthen regulatory systems that ensure the safety, quality, and efficacy of medicines by regulating pharmaceutical products, establishments, professionals, and practices. SIAPS provides support to national medicines regulatory authorities to build their technical capacity; adopt standards that are harmonized with relevant international and regional regulatory standards; reform processes to make them more efficient and transparent; and upgrade information management systems for improved transparency, oversight, and accountability to enable timely access to medicines and other health supplies.

Policy, Legislation, and Contractual Agreements

In this reporting period, **Swaziland** made significant progress toward approval and enactment of the Medicines and Related Substances Control Bill and the Pharmacy Bill, which will replace existing legislation that dates back to 1929. Both bills, which were developed with the support of SIAPS and its predecessor project, were presented to the House of Assembly for final deliberations, and the Medicines and Related Substances Bill was approved by both houses of parliament for presentation to the king for his endorsement. SIAPS will now assist the chief pharmacist in preparing a report for submission to the king for enactment of the Medicines and Related Substances Bill which provides for the establishment of Swaziland's first medicines regulatory authority. SIAPS will also support the Chief Pharmacist's Office in preparing for a joint House sitting on the Pharmacy Bill, which is expected to occur in the next quarter.

In **South Africa**, several policy and legislative instruments developed or updated with assistance from SIAPS were finalized for approval prior to close out of the project's country office. Over the course of the project, SIAPS has helped the South African government develop or update 18 policy documents to improve processes for making and implementing decisions and to support good governance in the country's pharmaceutical sector. Notable achievements in this reporting period include:

- Finalization of the Department of Correctional Service's pharmaceutical services policy for submission to the Minister of Justice and Constitutional Development for approval
- Development of a policy document for the establishment and management of pick-up points where patients can collect antiretrovirals (ARVs) and medicines for other chronic diseases dispensed under the Central Chronic Medicines Dispensing and Distribution (CCMDD) Program, which was developed and implemented with assistance from SIAPS; SIAPS also joined a delegation that presented the CCMDD Program to the South

African Pharmacy Council and deliberated on legislative barriers and revisions needed to enhance access to medicines for chronic diseases across the country

- Development of a tool to assess how authorizations for nurses to perform functions listed in Section 56(6) of the Nursing Act 33 of 2005 (including the prescribing of medicines) are currently issued in order to support implementation of the recently approved policy for issuing such authorizations

Standards, Guidelines, and Procedures

As SIAPS moves toward project closeout, SIAPS country teams worked with partners and counterparts to revise, finalize, and implement a number of guidelines, lists, and standard operating procedures (SOPs) that provide the foundation for good governance and better practices in pharmaceutical systems.

- **Bangladesh's** Ministry of Health and Family Welfare (MOHFW) approved the standardized table of medical equipment for 500-bed hospitals and issued a government order that provides for its use as a reference document for procurement. SIAPS also helped the MOHFW's Procurement and Logistics Management Cell to review and revise the draft pricing guide and submit it for approval.
- In the **Dominican Republic**, SIAPS developed guidelines for quantification and programming of medicines and supplies to assist country counterparts to perform these tasks independently after SIAPS closes. The guidelines include links to the relevant electronic applications for data entry and analysis.
- SIAPS assisted **Ethiopia's** Federal Ministry of Health in updating the drug management handbook for health extension workers to include reproductive, maternal, newborn and child health (RMNCH) and other medicines for use at health-post level. The manual is now ready for presentation at a final review workshop. The RMNCH formulary was also revised in this reporting period and will go to the national drug advisory committee for final review.
- In **South Africa**, SIAPS helped the contracting unit of the National Department of Health (NDOH) revise and finalize terms of reference (TORs) for the committee responsible for evaluating bids for pharmaceutical and medical product tenders.
- **Namibia's** essential medicines list was revised to ensure that the medicines procured by the central medical stores are aligned with updated national standard treatment guidelines (STGs) for antiretroviral therapy (ART) and HIV-related opportunistic infections, tuberculosis (TB), and family planning.

Transparency and Accountability

In **Ethiopia**, the Somali Regional Health Bureau enacted a directive to support implementation of the Auditable Pharmaceuticals Transactions and Services (APTS) Initiative, which was introduced to achieve greater transparency and accountability in the management of pharmaceuticals and related finances. This brings the number of regions that have enacted APTS regulations to ten; only one region—Harari—has yet to approve APTS regulations, which support expansion and, ultimately, the sustainability of the initiative. APTS is now being implemented in 67 health facilities throughout the country.

Bangladesh has introduced the e-Government Procurement (e-GP) system as part of efforts to enhance transparency and promote good governance in public procurement. In this reporting period, the Directorate General of Health Services (DGHS), with assistance from SIAPS, completed its registration in the national e-GP system. Beginning in FY 2016-17, all DGHS national competitive bidding processes will be conducted through the e-GP system and SIAPS will provide technical assistance to build capacity and support implementation of the system.

SIAPS has been assisting **South Africa's** NDOH to establish a national multi-stakeholder forum as part of efforts to enhance transparency, equity, efficiency, responsiveness, and accountability in the supply chain. In this reporting period, SIAPS helped the NDOH to draft TORs for the Forum to Promote Transparency and Multi-Stakeholder Engagement Regarding Medicine Availability and facilitated a workshop with stakeholders to discuss and plan for its establishment. In addition, the national pharmaceutical services management dashboard developed by SIAPS was successfully migrated to a web-based platform and went live on August 11; the dashboard enables the NDOH to monitor the provision of pharmaceutical services and compliance to standards relating to rational medicines use, access, availability, financing, and human resource management in all provinces. Provincial and national users have been trained on the new system; the user guide, technical guide, and source code were handed over to the NDOH.

Coordination, Partnership, and Advocacy

In the **Philippines**, SIAPS is assisting the Quezon City Health Department in scaling up the Barangay Health Management Council (BHMC) Initiative in all six city districts. The initiative brings together community-based groups, officials, and health providers to improve TB program management and service delivery in urban-poor settlements (barangays). In this reporting period, meetings were held with the Quezon City district health officers to discuss the future directions of BHMC implementation and scale-up in the rest of the city. Recommendations were made for the strategic planning, monitoring, and technical support for BHMC scale-up.

Other examples of coordination efforts supported by SIAPS to promote more-informed decision making, foster transparency and accountability, streamline supply chain management and service delivery, and improve the efficiency of planning, allocation, and mobilization of government and donor resources include the following:

- As the secretariat of the pharmaceutical technical working group, SIAPS assisted **South Sudan's** MOH to convene two meetings during a period of violence and civil unrest. These partner coordination meetings provide a platform for sharing pharmaceutical information to support more-informed decision making and are a critical component of the country's efforts to address gaps in essential medicines stock management. During these meetings, SIAPS made a presentation on the stock status of malaria commodities across the country.
- In the **Democratic Republic of Congo (DRC)**, SIAPS helped provincial health divisions across the 13 USAID-supported provinces to organize and hold meeting to ensure that MOH's partners' support is well coordinated and to address challenges.

- In **Mali**, SIAPS helped organize a meeting of the national technical committee for the coordination and monitoring of health commodities, which includes representatives from MOH, USAID implementing partners, UN agencies, and civil society organizations. The purpose of the meeting was to orient members on the optimal use of the OSPSANTE tool, a dashboard that captures, aggregates, and tracks information on antimalarial, family planning, HIV, and nutrition commodities and to present and validate the results of the updated procurement plans for contraceptives and malaria commodities. SIAPS also assisted the MNCH technical working group to quantify MNCH commodity needs on the basis of the new international MNCH quantification guide.

Strategic Planning

In 2015, SIAPS began working with **South Africa's** NDOH and the USAID-funded Supply Chain Management System (SCMS) to develop a national strategy for improving availability of health products. In this reporting period, the strategy was finalized and presented to the National Health Council Sub-Committee on Pharmaceutical Services.

In the **Philippines**, SIAPS provided inputs and recommendations to inform revision of the Philippine Action Plan to Control Tuberculosis (2010-2015) and development of the national strategic plan to eliminate TB in the country. SIAPS provided inputs specifically on the regulation and management of pharmaceuticals, laboratory supplies, and related services.

To prepare for the review and revision of **Swaziland's** national pharmaceutical strategic plan, which expires later this year, SIAPS helped draft TORs and propose members of the technical working group (TWG) that will be appointed to lead this process. The MOH approved the TORs and the proposed members; the next step is to facilitate appointment of the members.

Regulatory Systems Strengthening

SIAPS assisted the national regulatory authority in **DRC** to hold its quarterly registration session, during which 165 applications were reviewed. Of the total applications, 120 (73%) were approved for registration; 45 did not have sufficient information to complete registration and thus were deferred to the next session. The total number of products now registered in the country is 4,606—up from 400 five years ago when SIAPS started providing technical assistance for product registration. To enable the regulatory authority to appropriately carry on with its registration activities after the project ends, SIAPS has planned a session to hand over selected activities to other partners as of October 2016.

During this quarter, SIAPS worked with the Directorate General of Drug Administration (DGDA) in **Bangladesh** to finalize the last set of templates and forms used in product registration and the respective roles of screeners, reviewers, and moderators in the registration process. These inputs will enable SIAPS to make final programming modifications to the Pharmadex software in advance of its official inauguration planned for early in the next quarter. In addition, applicant information was solicited from selected pharmaceutical companies and used to create a database of users who will have access to the system for registration application submission, once it is launched. SIAPS also collaborated with the USAID-funded Promoting

Quality of Medicines (PQM) Program to help the DGDA identify and prioritize the technical assistance needs of the National Control Laboratory as it works toward achieving WHO accreditation.

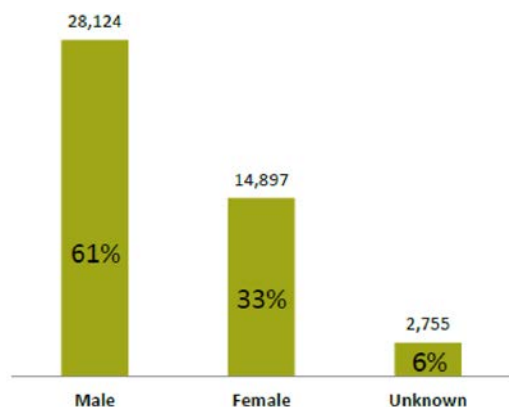
In **Mozambique**, SIAPS helped the Pharmacy Department transfer data on 4,232 products registered prior to the implementation of an electronic registration system from the physical archive into the new database. As a result, renewal and variation applications for these previously registered products can now be processed through the electronic system. This effort will help streamline the review process and reduce the registration time for these application types. SIAPS also assisted the Pharmacy Department to continue implementation of its monitoring and evaluation plan for regulatory functions. Activities included preparation of a quarterly report, selection of impact indicators, finalization of the results framework, and revision of the performance indicator reference sheets. By introducing greater transparency and accountability into the national regulatory authority through regular reporting of key performance indicators across regulatory functions, including indicators that demonstrate the impact of its work, the Pharmacy Department will have the information needed to monitor its performance and identify strengths and weaknesses in its system.

SIAPS supported the **Namibia** Medicines Regulatory Council (NMRC) to identify and address issues arising with the functioning of its electronic tool for registration; update the registration status of over 100 medicines; and verify the registration status of TDF/FTC products for pre-exposure prophylaxis (PrEP) to accelerate adoption of PrEP guidelines. Routine review of medicine dossiers for product registration, which was previously supported by SIAPS, has been officially handed over to NMRC.

As part of its effort to increase access to quality TB medicines in the **Philippines** through addressing regulatory constraints, SIAPS conducted a situation analysis of the regulatory information management system currently in use at the Philippines Food and Drug Administration (FDA) and proposed recommendations for improvement. In conjunction with the FDA, SIAPS worked to develop an action plan for the introduction of a new, more robust and efficient regulatory information management system as per the recommendations. The proposed system will have the capability to manage product registration, license drug establishments, and other FDA operations. The results of the situation analysis and the steps outlined in the action plan for introducing the new information system were presented, discussed, and agreed upon at a meeting with the director general and key officers at FDA.

In **Swaziland**, SIAPS provided technical support for the development of the medicines quality control laboratory action plan, which will help ensure that there are adequate resources and capacity to conduct vital quality assurance activities for imported medicines. In addition, the program worked with the Office of the Chief Pharmacist to more effectively regulate narcotics in the country by closely monitoring importation, consumption, and supply. As part of this effort, SIAPS supported inspections and oversight at 12 community pharmacies where narcotics are managed.

IR 2. Capacity for Pharmaceutical Supply Management and Services Increased and Enhanced



Lack of qualified pharmaceutical professionals, institutions for pharmaceutical training, and updated curricula are challenges faced by resource-constrained countries. SIAPS collaborates with stakeholders to assess their capacity to manage pharmaceuticals at all levels, identifies areas for improvement, and develops interventions to strengthen the system and build capacity. To date, SIAPS has trained over 45,700 professionals from 22 countries in several areas of pharmaceutical management (33 % female and 61% male; see figure for details).

Pre-service Training

In the **Dominican Republic**, the first module of the second Certified Course (Diploma) on Rational Use of Medicines was facilitated by SIAPS consultants on August 27; 32 students initiated the course, and 20 tuition fees were sponsored by USAID. A revised and updated version of the educational modules is available on the SUGEMI “tool box kit”/National Health Service website.

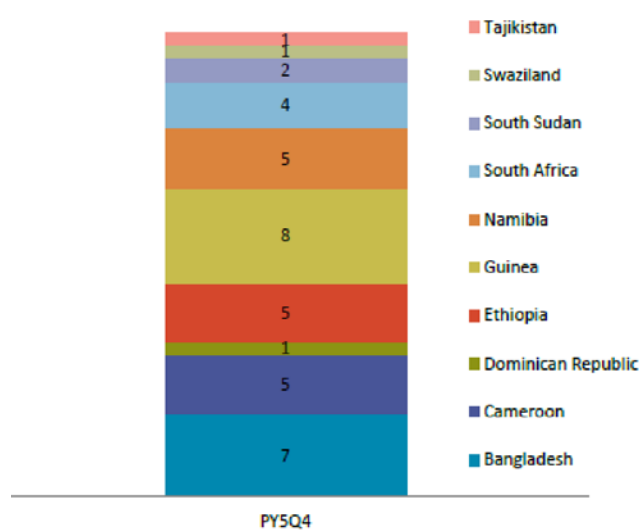
SIAPS **DRC** continued supporting the Faculty of Pharmaceutical Sciences (FOPS) of the University of Kinshasa to complete the FOPS curricular revision process. In the previous quarters, significant milestones were achieved, and a team comprised of three members from FOPS and two SIAPS staff members participated in a technical consultation meeting held in Chicago in April 2016. During this quarter, based on directives received from the consultation meetings, SIAPS supported FOPS to hold two curricular revision sessions, during which the curricular mapping was conducted and coursework modules for the ten competencies for pharmacists were defined. A coursework description fact sheet template was developed and distributed to all FOPS departments and services to provide specifications for each coursework and related modules. During the next session, different departments and services will present their filled course description fact sheets to the Curriculum Committee for validation and adoption; this will conclude the FOPS curricular revision process.

Currently, two institutions offer a pre-service pharmacy training program in **Swaziland**; however, the curriculum has not been standardized. The pharmaceutical recruitment and training task team chaired by the chief pharmacist met to review all the programs currently on offer and proposed minimum competency and quality standards for pharmacy training. This will also assist new institutions that may be interested in offering pharmacy training programs in the future.

In-service Training

Through the end of September 2016, SIAPS worked on the development of in-service training programs to improve capacity for pharmaceutical supply chain management and services. To

date, 10 countries have developed or revised 39 in-service health professional training curricula with SIAPS assistance (see figure).



In collaboration with the new Global Fund principal recipient, CARITAS-Burundi, SIAPS **Burundi** trained and equipped 58 community health workers (CHWs) in Mutaho health district to scale up integrated community case management of child diseases (iCCM). To complete the five districts planned for this fiscal year, in collaboration with the Directorate for the Supply and Demand of Health Services (DODS), the Integrated Health Project Burundi (IHPB), the National Malaria Control Program (PNILP), and Department of Health, Hygiene, and Sanitation Promotion, SIAPS organized the enrollment of 112

CHWs in Giteranyi district to introduce iCCM. Selected CHWs will be trained to diagnose and treat malaria, diarrhea, and pneumonia and to detect acute malnutrition among children aged 2 to 59 months. Training will take place in October 2016 and activities will start in November.

In **Ethiopia**, 21 different training events were organized on APTS (9), the SOP for Pharmacy ART Information Management Manual (6), electronic/EDT (1), DTCs (2), and ART (3). These events were attended by 839 professionals (370 females and 469 males).

Additionally, in collaboration with the Addis Ababa Regional Health Bureau (RHB) and the Pharmaceutical Fund and Supply Agency (PFSA) Addis Ababa Hub, SIAPS provided DTC training with the objective of building the capacity of health center DTC members and health professionals and improving drug supply management and rational drug use; 79 (30 female and 49 male) medical directors and pharmacy heads of health centers from 43 health centers and 8 sub-cities in the region attended the training. After the training, all participants developed action plans to establish/strengthen DTCs at their respective health centers.

In support to the Pharmacie Centrale de Guinee project “Medicines for All (*Medicaments pour tous*)”, SIAPS **Guinea** sponsored trainings in pharmaceutical management of 67 supply chain professionals (7 female and 60 male) in the regions of Labe, Faranah, Mamou, and Kankan. This training aimed at strengthening the capacity of supply chain professionals in health facilities of the two regions to correctly manage pharmaceutical products and use pharmaceutical management tools.

In **Namibia**, on-the-job training on inventory management and practices was conducted during the installation of FESC at 21 district hospitals. These trainings were targeted at pharmacists, pharmacists’ assistants, clerks, and work hands involved in the management of pharmaceuticals and health commodities. Moreover, SIAPS trained 42 health workers in the 21 district hospitals during 5-day facility-based training. In addition, SIAPS trained 27 regional pharmacists, district

pharmacists, and managers from the Division of Pharmaceutical Services on FESC during the annual pharmacists' forum held September 27-28, 2016. The regional and district hospital pharmacists developed action plans to ensure continued and efficient implementation of FESC, uploading data on the pharmaceutical dashboard for visibility and use of such data for decision making.

To help the National TB Reference Laboratory (NTRL) strengthen the laboratory network, SIAPS **Philippines** provided technical assistance for the review and revision of policies, guidelines and standards for the National TB Control Program (NTP) laboratory trainings. Through a series of meetings and consultations, SIAPS worked with the NTRL training manager and selected senior Department of Health (DOH) regional medical technologists to develop a draft laboratory training-guidance document. The document contains the revised policies, selection criteria for trainers and trainees, and standards for training facilities. The document will provide guidance to regional and provincial NTP laboratory network managers in planning and implementing effective laboratory trainings.

Moreover, SIAPS provided assistance to enhance the curriculum and design of the TOT Course for Basic TB Microscopy to improve training effectiveness. The enhancement includes the addition of new topics such as introduction to training program management, training data management, report writing, creating effective teaching materials, effective teaching skills, waste management, and biosafety. After completion of the enhanced curriculum, SIAPS organized and implemented the TOT course; 12 laboratory managers from eight DOH regional laboratories (Cagayan Valley, Central Luzon, Southern Tagalog, Bicol, Western Visayas, Davao, Northern Mindanao, CARAGA), and four provincial/city laboratories (Nueva Ecija, Bohol, South Cotabato, and Zamboanga City) participated.

SIAPS **South Sudan** reviewed and incorporated inputs from the MOH into the Public Sector Pharmaceutical Management Training Manual. SIAPS delivered a three-day pharmaceutical management training workshop to 25 health care workers (9 female and 19 male) in Juba for the Central Equatoria State. The purpose of the training workshop was to strengthen the capacity of health workers in Juba County in pharmaceutical management. The participants developed 16 action plans during the training.

Supportive Supervision and Mentoring

SIAPS **Mali** supported 13 public institutions in the organization of 18 trainings and mentoring sessions. SIAPS also continued to support the Regional Directorate of Health (DRS) to conduct coaching visits to trainees in 5 regions (Kayes, Koulikoro, Sikasso, Segou, and Mopti); 238 (45 female and 193 male) trainees in 5 regions and 6 districts were mentored. Such activities had significant impact on the number of trainees successfully completing the post-training action plan—77% of trainees successfully completed post-training action plans (out of 71% planned as the program target).

SIAPS **Mozambique** supported the MOH Hospital Pharmacy Department to perform one supportive supervision visit to a province hospital to strengthen hospital DTCs' capacity to continuously improve the safe use of medicines at the health-facility level. In this visit, SIAPS

staff provided training to hospital pharmacists on how to collect, analyze, and report prescription indicators, medications errors and aggregate consumption studies.

SIAPS **South Sudan** conducted supportive supervision to four primary health care centers—Sakure, Nzara, Good Samaritan and Tambura—and six primary health care units—Nangrimo, Yabwa, Matoto, Ngboko, Bakrigba, and Nzara. SIAPS also conducted supportive supervision visits to Nzara, Tambura, and Yambio County medical stores in Western Equatoria State and Tambura and Yambio County medical stores in Central Equatoria State. During the visit, SIAPS collected Continuous Results Monitoring and Surveillance (CRMS) system data, provided on-the-job training and mentored dispensers based on identified needs, rearranged medical stores, and distributed standard storage checklists, thermometers, and temperature charts. This was done to improve storage of pharmaceutical commodities in the two states. The CRMS data collected showed that two out of the nine health facilities visited had stock-outs of tracer medicines at the time of the visit. All three county medical stores visited received feedback on previously submitted data and they all had available stock of tracer medicines. Additionally, together with USAID and the United Nations Development Programme (UNDP), SIAPS conducted a supervisory visit to the UNDP warehouse in Juba. The team was briefed on the operations at the warehouse and ongoing plans for integration of the malaria, HIV, and TB warehousing as well as areas of collaboration between the PEPFAR and Global Fund commodities management.

Institutional Capacity Building

In **Bangladesh**, diet procurement at local-level hospitals is not currently done with guidance from Public Procurement Rules and Public Procurement Act. To address this issue, SIAPS customized documents for sub-national level procurement, which have been validated in a workshop headed by the health secretary, MOHFW, on July 19, 2016. A first training event for MOHFW procurement officials of the Directorate General of Family Planning and the Directorate General of Health Services took place September 27-29, 2016.

Following training from previous quarters in **Ukraine**, the second training on health technology assessment for the members of the Essential Medicines List (EML) Expert Committee was completed in September 2016. Currently, the Expert Committee is drafting the EML.

In the **West Africa region**, a two-day training session was conducted for selected West Africa Health Organization (WAHO) staff at their headquarters in Bobo-Dioulasso, Burkina Faso. The goal of the training was to familiarize and make WAHO staff comfortable with the management of OSPSIDA. WAHO has expressed concerns about rolling out and managing OSPSIDA since they are not an executive body and their main task is to assist country-level/local organizations. Currently, WAHO is exploring the possibility of transferring OSPSIDA management and related activities to the Central Medical Stores of Cote d'Ivoire (Nouvelle PSP-CI).

A similar capacity-building exercise was given by the SIAPS team where participants from the National AIDS Control Program (CNLS) of **Cameroon** were trained on regular management of the OSPSIDA system; four participants (an IT engineer and three logisticians) from CNLS attended the training.

Tools for Capacity Building

In **Ethiopia**, the EDT has been operational in about 210 ART sites whereas more than 800 facilities use the manual system. To effectively use the tools for identification, prevention, and management of treatment errors for patients on ART, it was necessary to provide training to relevant government stakeholders (i.e., RHBs, ZHDs, and PFSA) so that the system continues to serve its intended purpose. To contribute to the eventual ownership of the Pharmaceutical Management Information System (PMIS) at the RHB level, training was provided for 27 (8 female and 19 male) pharmacy and IT professionals from Tigray Region. The training created a favorable environment to discuss the basics of the tools, how they can be used for facilitating dispensing activities, and further utilizing them to prevent medication errors and monitor patients' adherence to medications.

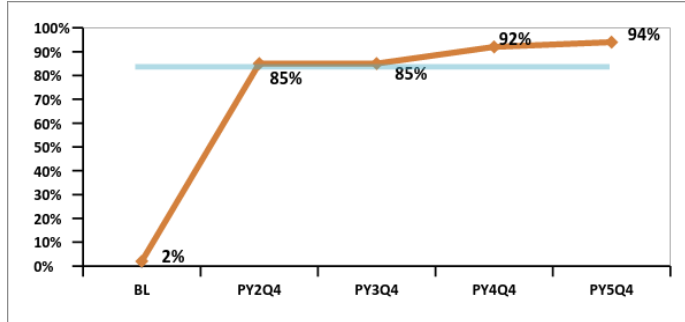
In **South Africa**, the web-based national pharmaceutical services management dashboard was finalized and successfully migrated to a new domain (www.perseus.org.za) which went live on August 11. This significant innovation replaces the Excel-based tool developed in 2014. Provincial and national users were trained on use of the system, providing an opportunity for users to provide input on the system and strengthen their sense of ownership. Involvement of the NDOH staff in the development and training process has been critical in facilitating country ownership.

In **Swaziland**, 27 health workers were trained on inventory management and RxSolution software troubleshooting, bug fixing, and warehouse management. SIAPS also provided mentorship at 15 ART treatment sites (5 hospitals, 4 health centers, 6 clinics), reaching 16 health care workers. Health care workers were mentored on rational dispensing of medicines, active surveillance, and inventory management through Rx Solution.

IR 3. Utilization of Information for Decision Making Increased

SIAPS's approach to management information systems is to harmonize and integrate the collection and presentation of accurate, quality pharmaceutical and other commodities data in a timely and consistent manner. This data is intended to assist decision makers and health workers at all levels of a country's health system to make evidence-based decisions, manage health and laboratory commodities and pharmaceutical services, and measure, monitor, and evaluate progress. SIAPS's approach includes careful assessment of interventions related to information systems to determine the feasibility and long-term effect of their implementation; striving to find the best solution to address health-related data collection, processing, reporting, and decision-making challenges; and supporting country ownership and sustainability. SIAPS' pharmaceutical management information tools, such as RxSolution, Pharmadex, e-TB Manager, QuanTB, OSP-SANTE, OSPSIDA, the Electronic Dispensing Tool (EDT), the PV Data Collection and Analysis Tool (DCAT), and the recently launched Pharmacovigilance Monitoring System (PViMS), support both product and patient information. The demand for these tools in SIAPS and non-SIAPS countries keeps growing, and SIAPS is working with various partners to expand the use of these tools.

Data Utilization



Data use project-wide has improved significantly since the beginning of SIAPS, on the basis of country-level indicators, such as the “percentage of health facilities that used consumption data to inform ordering at last assessment,” which, during PY5Q4, reached 94% of all SIAPS health facilities (figure 1).¹

In **Ethiopia**, stock status data for antimalarial drugs collected from 61 health facilities (20 hospitals, 41 health centers) in 5 regions were compiled, and the reports shared with the respective RHBs, zonal health departments, and PFSA hubs. Using the stock status reports, facilities were able to transfer excess and near-expiry antimalarial drugs among themselves. For example, 90 ACT strips and 2,000 chloroquine tablets were transferred from Melka Logo, Fallana, and Ela Health Centers to Bati Health Center.

As a member of **South Sudan**’s Logistics Management Unit (LMU), SIAPS presented the stock status report for last quarter, which was generated from the data analysis system (South Sudan Pharmaceutical Dashboard) to the director general for Pharmaceutical Services. Data generated from the dashboard is used to determine the availability of the tracer medicines. The dashboard is being piloted with data from three counties in Central Equatoria State.

Since the nationwide roll-out of the service delivery provider (SDP) dashboard module in **Bangladesh** (June 2015) with the support of SIAPS, the Directorate General of Family Planning (DGFP) has been able to consistently maintain stock-out rates for contraceptives at the SDP level at less than 2%. SIAPS also provided technical assistance for the quantification of TB medicines by using QuanTB. The NTP of Bangladesh was able to place an emergency order to the Global Fund for five second-line TB drugs used for extensively drug-resistant TB patients. Through the use of QuanTB, the emergency situation was identified and action was taken accordingly in an attempt to avoid stock-outs. Another good example of data utilization in PY5Q4 was the identification and correction of 116 treatment errors through the use of the EDT by collecting patient uptake data from 681 health facilities and regimen breakdown data from 381 facilities. EDT is operational at over 200 ART sites while more than 800 facilities use the manual system.

In the **Dominican Republic**, SIAPS continued supporting the integration of laboratory reagents and materials into the unified national pharmaceutical management system (SUGEMI, by the Spanish acronym). By the end of PY5Q4, 21% (8/38) of laboratories made their requisitions by using the SUGEMI forms. The decentralized estimation of needs exercise and programming for the procurement for 2017 was carried out in June 2016, and submitted to health authorities in

¹ Cohen, M. Mahadevan, V. Ostrega, A. SIAPS Quarterly PMP review: PY5 Quarter 4.

July. The reports and presentations included a financial gap analysis to be used for the mobilization of additional resources.

SIAPS supported the National Malaria Control Program (NMCP) of **Mali** in conducting an end user verification (EUV) study, which demonstrated that 94.87% (74/78) of the surveyed health facilities used the malaria standard guidelines and 81.61% of the staff received formal training on their use. Significant results of the survey demonstrated that malaria commodity stock levels are adequate in the country and 90% of patients under age 5 with uncomplicated malaria were treated with ACT, as per recommended by the STGs.

In **Swaziland**, 88% of ART facilities completed and submitted the SIAPS-supported ART LMIS report for the quarter ending June 2016. The reporting rate from ART facilities has been slowly declining since PY5Q1 when it was 98%; however, the laboratory LMIS reporting rates have been consistent and have maintained at 100% since PY5Q3.

Facilities in the Gauteng and Limpopo Provinces of **South Africa** have seen significant improvement of medicine availability following SIAPS support. The dashboard was used to identify facilities with low stock availability and institute interventions. In one of the facilities where SIAPS provided technical assistance, Chris Hani Baragwanath Academic Hospital, medicine availability improved from less than 70% to between 80 and 90%. SIAPS provided further technical assistance in South Africa to conduct a study to test the feasibility of extracting data from RxSolution related to dispensing of antibiotics and antibiotic stewardship for decision making. The findings indicated that RxSolution data can be used to conduct medicine utilization studies. The study also highlighted gaps in the use of information available in RxSolution, which could assist in the evaluation of prescribing and dispensing practices and their alignment with clinical guidelines.

Swaziland hosted research experts from the Harvard Pilgrim Health Care Institute and colleagues from Namibia and Arlington in a regional workshop on advanced data analysis of ART and antibiotic dispensing patterns using data extracted from RxSolution, the ART Patients Monitoring and Reporting System (APMR), and EDT.

Data Quality

The **Dominican Republic**'s SUGEMI pharmaceutical management system continued to operate as expected in PY5Q4 with over 90% of health facilities reporting their data and receiving feedback. Similarly, in **Mali**, 91% of surveyed facilities submitted their LMIS reports and orders on time, which has been a direct consequence of the implementation and monitoring of the dashboard OSPSANTE.

SIAPS' continued to support the Directorate General of Family Planning (DGFP) of **Bangladesh**, resulting in 100% timely reporting of contraceptive stock status from 488 DGFP upazilas. The stock-out rates for contraceptives at SDP level decreased to 1.05% in PY5Q4.

SIAPS supported **Swaziland**'s Data Management Unit at the Central Medical Stores to provide feedback to 18 (42%) ART sites; 85% of ART sites managed to complete and submit an ART

LMIS report for this quarter. The laboratory LMIS recorded a 100% reporting rate consistent with the previous quarter. Timeliness of reports for facilities that provide ART services continues to improve—in PY5Q4, 81% of facilities reported in a timely fashion, up from the 63% recorded for PY5Q3.

In **South Africa**, SIAPS provided further technical assistance to the NDOH in monitoring data entry. Ten facilities in Limpopo, Gauteng, and Mpumalanga were assisted with data clean-up, including aligning product lists with the master procurement catalogue, deactivating obsolete items from the RxSolution database, and improving integrity and quality of data. In addition, an information sharing session regarding the hospital dashboard was held with provincial pharmaceutical services in KwaZulu-Natal.

SIAPS continued to provide routine IT support to **Namibia**'s 50 main EDT sites, the national EDT database (NDB), and e-TB Manager to ensure optimal availability of data for improving pharmaceutical service delivery. In PY5Q4, SIAPS continued to validate the data in EDT and the electronic patient management system. The validation exercise was done by analyzing variances in patient data between the systems and by obtaining explanations for the variances from the health workers who manage and use these electronic tools.

Information System Design and Collaboration

SIAPS is supporting the Food and Drug Administration (FDA) in **Philippines** on the adoption of PViMS, a web-based application that streamlines and simplifies data collection and analysis of pharmacovigilance information. SIAPS supported several activities in preparation for the adoption of PViMS, such as system testing with the FDA pharmacovigilance unit and Lung Center of the Philippines and National Center for Pulmonary Research (LCP-NCPR).

Fifty ART sites in **Namibia** benefitted from remote technical assistance from SIAPS on the facility EDT, NDB, and e-TB Manager to ensure optimal availability of data for improving pharmaceutical service delivery, especially for people living with HIV and AIDS and those with multidrug-resistant TB (MDR-TB). Of these 50 sites, 21 were supported to implement the Facility Electronic Stock Card (FESC), whereas 10 sites continued to receive support on piloting the EDT patient mobile phone short messaging service (SMS) adherence reminder service.

SIAPS continued to roll out the Commodity Tracking System at laboratory facilities in **Swaziland**. The software was installed at four additional laboratory facilities; making functionality upgrades on the software, including customizable product lists per facility, modifiable data entry forms (limited to the system administrator), and updated algorithms for calculating the average monthly consumption, also continued.

In **South Africa**, the roll-out of RxSolution accelerated in PY5Q4. SIAPS installed RxSolution at 135 sites in PY5Q4, bringing the total to 577 sites from the 442 sites reported in PY5Q3, including hospitals, primary health care facilities, sub-depots, district offices, and tertiary institutions; a further 36 sites are in the process of installing RxSolution. The NDOH plans to continue its implementation and management. The web-based national pharmaceutical services management dashboard was finalized and successfully migrated to a new domain, thus replacing

the Excel-based tool developed in 2014. The Essential Medicines List Tool was renamed the Essential Medicines Electronic Access (EMeA) system and successfully migrated to its online domain. Following the user acceptance testing period, EMeA will go live on October 20 and will be handed over to NDOH. All SIAPS management information system information will be documented and handed over to NDOH by the end of November 2016.

Finally, In Mali, SIAPS assisted in the process of adding nutrition and HIV commodities into OPSANTE, including preparation of the user acceptance test of the portal. SIAPS will also work with the Ebola coordination unit for entering Ebola commodities into OPSANTE and will conduct the acceptance test of HIV and nutrition portal.

IR 4. Financing Strategies and Mechanisms Strengthened to Improve Access to Medicines

The SIAPS approach for strengthening financing strategies and mechanisms for improved access to medicines encourages proper use of existing financial resources, advocating for greater resource mobilization, and reducing monetary barriers prohibiting access to medicines by those most in need. During this quarter, SIAPS supported countries by distributing donated pharmaceuticals and working as an advocate to address pharmaceutical funding gaps and the inclusion of the private sector in health insurance systems. By fostering collaborative relationships among partners, SIAPS continued to strengthen countries' quantification plans for medicines procurements from the Global Fund, PMI, and other funders. Furthermore, SIAPS promoted transparent financial transactions at hospitals and health facilities, highlighting the need to develop alternative procedures for resource allocation after analyzing medicines utilization and spending.

Mobilizing Additional Financial Resources

Last quarter, SIAPS assisted **Angola's** National Malarial Control Program (NMCP) in receiving a donation of antimalarial products from PMI to address a known shortage. This quarter, SIAPS participated in three meetings organized by the National Directorate of Medicines and Medical Equipment and the Central Procurement Agency for Medicines and Medical Supplies to ensure that the commodities donated were distributed and subsequently properly managed. A series of supervision visits were conducted at hospitals and the provincial health office in Luanda to stress the correct use of pharmaceutical management tools to track commodities from the donation.

This quarter, SIAPS **Bangladesh** assisted the NTP in conducting quantification and forecasting exercise for five second-line TB drugs used for patients with XDR-TB. The information gathered using QuanTB informed NTP's submission of an emergency procurement order to the Global Fund.

In **Burundi**, SIAPS is working closely with the National Malaria Control Program (PNILP) to address the availability of malaria commodities in response to the ongoing upsurge in malaria cases. In support of the Roll Back Malaria Initiative, SIAPS participated in PNILP's quarterly coordination meeting during which the role of PNILP as a Global Fund principal recipient was

discussed for 2016-17. In addition, SIAPS supported the delivery and receipt of 690,300 ACT treatments for children between 1 and 5 years of age and 979,150 ACT treatments for newborns. This delivery signified the last series of shipments of PMI-donated antimalarials to meet shortages filled by PMI emergency orders. This quarter, SIAPS assisted PNILP in analyzing the stock of malaria commodities at the Central Medical Stores to inform supply plans and pending orders with PMI and the Global Fund. The quantification of malaria commodities estimated that there is a gap of 3,179,248 ACTs and 10,363,525 RDTs within the 2016-17 fiscal year. These gaps were presented to PMI and the Global Fund in hopes of mobilizing additional funds for future orders of ACTs and RDTs.

In collaboration with the National Malaria Control Program (PNLP), SIAPS assisted with preparations for a visit to **Guinea** by the Global Fund by participating in a multi-stakeholder meeting during which plans for malaria-related supply chain activities and funding were discussed to increase collaborative efforts. During the meeting, stakeholders discussed the country's anticipated commodity needs and paid particular attention to how the country will work within the Global Fund's new funding model to reprogram funding as needed.

In **Swaziland**, the National AIDS Program (SNAP) and Central Medical Stores (CMS) are mobilizing resources to support the Test and Start Initiative, in which treatment is made available to all patients who test positive for HIV. In partnership with the Swaziland Ministry of Health, SIAPS supported a comprehensive funding analysis to determine the availability of funds to procure ARVs. The analysis highlighted that current government funding will only cover 71% of the total funding needed to procure ARVs. This exercise identified a funding shortfall of 29%. With the assistance of SIAPS, CMS revised their supply plan to use government funding and placed orders of ARVs. Additionally, SIAPS provided assistance to SNAP to analyze the scale-up targets associated with the Test and Start Initiative. SIAPS recommended that additional stock of first-line ARVs be procured, while emergency orders of ARVs were placed through USAID/PSM. Additional funding will be needed to meet the objectives of Test and Start.

Analyzing and Tracking Costs

In collaboration with **Ethiopia's** Federal Ministry of Health and the Ethiopian Pharmaceutical Association, SIAPS conducted a national assessment of APTS, its intervention for improved financial accountability of medicines expenditure and availability. The assessment indicated that the intervention has contributed to significant improvements in health facility-level indicators, such as patient satisfaction, medicines availability, medicines revenue, waste reductions, and overall improvements in the use of the medicines budget; 93.8% of APTS sites were observed to be producing monthly financial and service reports, improving the availability of data for decision making. Another significant finding from the assessment was that wastage at APTS sites is on average 1.1%, which is below the national target of 2%. The assessment also found that the availability of key tracer medicines was higher at APTS sites than non-APTS sites. Significant increases in availability of medicines were evident when comparing baseline data at APTS sites to their current stock status. Additionally, stock-out duration is shorter at APTS sites than non-APTS sites. Internal audits and the implementation of corrective measures at APTS sites have influenced these results. The draft report also addresses challenges inherent with scaling up and sustainability. This quarter, APTS was introduced at ten hospitals in the Oromia

region, Suhul Hospital in Tigray, St. Paul Hospital in Addis Ababa, and Bona and Chenchu Hospitals in the SNNP region. SIAPS hosted nine training events to expand the adoption of APTS, while health facility-level mentoring was provided to all ten hospitals implementing APTS in the Oromia region. Including the most recent introductions of APTS this quarter, APTS is now operational in 67 facilities throughout Ethiopia. An additional accomplishment was the adoption of APTS regulations by the Somali RHB this quarter. APTS regulations have been enacted in 10 regions and at the federal level.

Last quarter, SIAPS led a nationwide assessment of the Government of **Ethiopia**'s health insurance initiatives and the pharmaceutical supply chain, pharmacy benefit management practices, and systems in the public and private sectors. During this quarter, a draft report entitled "Ethiopia National Health Insurance Scale-Up Assessment on Medicines Financing, Use, and Benefit Management: Findings, Implications, and Recommendations" was produced and submitted for review to key stakeholders.

In this quarter, SIAPS submitted the draft report of the **Ghana** National Health Insurance Authority (NHIA) medicine utilization analysis to USAID and NHIA for comments and feedback.

Before the Provincial Department of Pharmaceutical Services in Gauteng, SIAPS **South Africa** presented the advantages of using the ABC/VEN analysis as a routine monitoring tool. Since late 2015, facilities across Gauteng Province have been implementing quality improvement projects that incorporated ABC/VEN analysis for monitoring spending on pharmaceutical products. In the second quarter of PY5, pharmacy and store managers extracted data for their facilities to conduct ABC/VEN analyses and, subsequently, developed quality improvement projects. This quarter, 16 facilities finalized their post-intervention ABC/VEN analyses for the provincial office in Gauteng. In collaboration with their pharmaceutical therapeutic committees (PTCs), 11 facilities conducted medicine use evaluations that highlighted noticeable improvements in the use of 13 products and an estimated decrease in spending per month by 51% overall. Three facilities showcased their findings at the Gauteng Pharmacy Managers Conference, which was held in September 2016.

IR 5a. Supply Chain Management

During the fourth quarter, SIAPS supported capacity building through formal training, mentoring, and supportive supervision for strengthening supply chain management systems in over 11 countries. SIAPS conducted quantification and stock status updates of health commodities to inform procurement and distribution plans, identify funding gaps, and mitigate stock-outs and expiry of products. In partnership with government partners and donors, SIAPS provided critical technical assistance to improve processes and systems pertaining to product selection, quantification, procurement, warehousing, distribution, and inventory management.

Through collaboration with **Angola**'s national Directorate of Medicines and Medical Equipment (DNME) and Central Procurement Agency for Medicines and Medical Supplies (CECOMA), SIAPS conducted a three-day multi-stakeholder workshop to draft the country's national

pharmaceutical supply chain strategic plan. Rich with inputs from the MOH, other government ministries, private sector stakeholders, and key donors, the final strategic plan contains five priority areas that will guide the country's pharmaceutical supply chain over the next five years. In close coordination with DNME, SIAPS organized one Logistics, Operations, and Procurement Subcommittee meeting this quarter, bringing together all public supply chain management stakeholders and organizations. SIAPS and the Instituto Nacional de Luta Contra a Sida (INLS) finalized and submitted for approval the national standard operating procedures manual for the pharmaceutical management of HIV and AIDS commodities. Once the manual is approved by INLS, it will be rolled out at the national, provincial, and health-facility levels. SIAPS will also facilitate dissemination of the SOP manual to PEPFAR-supported health facilities in Luanda. Additionally, SIAPS contributed to efforts to strengthen the supply chain for malaria and family planning commodities. SIAPS continued its partnership with Angola's National Malaria Control Program (NMCP) by compiling provincial-level malaria case management reports and monitoring stock status of antimalarial commodities at provincial warehouses and CECOMA. SIAPS worked alongside the United Nations Development Program, CECOMA and the National Reproductive Health Program (NRHP) to oversee a physical inventory count of all family planning commodities and develop a distribution plan for products donated by UNFPA and USAID. Additionally, through its mentorship program with the nine PEPFAR-supported health facilities, SIAPS supported the routine use of stock cards during each transaction, resulting in increased reliability of monthly reports on stock data.

This quarter, SIAPS provided technical assistance in **Bangladesh** for quantification (forecasting and supply planning), updating inventory management tools, and waste management. Interventions are being rolled out to strengthen the Directorate General of Health Services' inventory management system. SIAPS introduced a series of uniform inventory management tools in ten districts this quarter and facilitated trainings on use of these tools and logistics management in Noakhali, Habigonj, and Jhalokathi districts. To date, 23 out of 64 health districts are using the standardized inventory management tools. As new staff was on-boarded at the National Tuberculosis Program (NTP), SIAPS provided them with training on e-TB Manager. Using QuanTB, SIAPS also assisted NTP with the quantification of five TB medicines used for patients with extreme drug-resistant TB. As a result of the exercise, an emergency order was placed with the Global Fund for the same TB medicines. Furthermore, SIAPS facilitated a Logistics Coordination Forum meeting at the Directorate General of Family Planning (DGFP) in August to discuss the status of current procurements, the upcoming fiscal year's procurement plan, and the overall stock status report. SIAPS drafted and submitted national pharmaceutical condemnation guidelines to the Ministry of Health and Family Welfare for approval. As a result of continued SIAPS' advocacy for good warehousing practices and site-level waste management visits, 13,500 cubic feet of space was made available in sub-district stores, sub-district hospitals, and district hospitals. SIAPS' continued efforts resulted in 100% timely reporting on contraceptives stocks from 488 DGFP upazilas, and the reports showed further reduction in service delivery point-level stock-out rates from 1.22% in January 2016 to 1.05% in July 2016.

In collaboration with **Burundi's** National Malaria Control Program (PNILP) and Central Medical Stores (CAMEBU), SIAPS coordinated the delivery and distribution of 1,669,450 PMI-donated ACT treatments for infants and children 1 to 5 years of age. The antimalarial commodities were distributed to 46 health districts on the basis of calculations of consumption

data and stock on hand. To ensure the accuracy of future requests made to the Global Fund and PMI, SIAPS worked with PNILP and the sub-committee on malaria commodity security to review stock availability at CAMEBU, to update supply plans, and to undertake a funding gap analysis. For 2016-2017, a gap of about 3 million ACT treatments and about 10 million rapid diagnostic tests (RDTs) was identified. Support has been sought from PMI to place orders for ACTs and RDTs to avert potential stock-outs of these commodities in Burundi.

In **Benin**, SIAPS collaborated with the Pharmacy and Medicines Department of the MOH and with USAID-funded Advancing Newborn, Child and Reproductive Health Program to carry out a physical inventory of Ebola-related products in warehouses and health facilities in 10 health zones across 4 health districts. Additionally, 27 stock managers were trained on how to manage Ebola commodities. Stock managers were also instructed on the importance of completing electronic records using quality assured data in Health Management Information Systems and Logistics Management Information Systems.

In the **Dominican Republic**, the SUGEMI pharmaceutical management system continues to encourage health facilities to report on their stock status and receive feedback, ensuring that medicines are supplied promptly and availability at service delivery points remain high. Health facilities reported this quarter that adult ARV availability is at 93% and essential medicines availability is at 92%. SIAPS also facilitated a workshop during which the implementation plan for the SOPs for PROMESE/CAL (Programming, Procurement, and Distribution) was drafted. A highlight of this quarter's activities was the dissemination of the results of the quantification and programming of medicines and supplies to be procured in calendar year 2017. The analysis was conducted under the assumption that the allocated budget would remain the same based on the prior year. A gap of approximately USD 4.6 million has been identified and thus the need for solicitation and mobilization of additional resources was emphasized. SIAPS developed guidelines for the quantification and programming of medicines and supplies. It includes links to all electronic applications for data entry and analysis. These guidelines will facilitate future quantification exercises, without the need for external technical assistance.

In partnership with **Ethiopia's** Pharmaceutical Fund and Supply Agency (PFSA), SIAPS collected data on the stock status of antimalarial commodities from 20 hospitals and 41 health centers in 5 regions of the country. After the reports were compiled, they were shared with RHBs, zonal health departments, and PFSA for follow-up. Using information generated from the stock status reports, health facilities transferred stock of antimalarials between one another to avoid stock-out and expiry and reduce wastage. Organized by PFSA, the Clinton Health Access Initiative (CHAI), and USAID | DELIVER, SIAPS provided technical guidance during the National Malaria Commodities Quantification workshop, assisting with developing forecasting and procurement requirements for malaria commodities for 2017-2019. Data from SIAPS' Continuous Results Monitoring System report was used to inform requirements and discussions.

In unison with **Guinea's** National Malaria Control Program (PNLP), SIAPS organized a workshop to validate the results from a recent malaria commodity quantification exercise. The Procurement and Supply Management Technical Working Group (PSM-TWG), made up of several partners including SIAPS, presented the approach used for the quantification as well as data sources, assumptions, and the procurement quantities and financial gap analysis. The

forecasting of malaria commodities covers a six-year timespan, whereas the developed supply plan covers a three-year period. A technical report outlining the quantification process and outcomes has been produced and is currently being reviewed by PNL. PNL engaged SIAPS' support to conduct the seventh end user verification in Guinea, submit the PPMRm, and monitor the stock status of malaria commodities across the country. SIAPS was also tasked with assisting PNL to distribute emergency orders of commodities to health facilities, especially in the Gaoual prefecture, which helped avert imminent stock-outs. SIAPS remain a partner in Guinea's effort to integrate all health commodities into one supply chain. This quarter, SIAPS hosted a workshop with the National Directorate of Pharmacy and Laboratory to analyze existing supply chain systems and discuss practical solutions for integrating supply chains. In a related activity, a system strengthening plan for supply chain management of family planning commodities, in particular contraceptives, was developed this quarter with support provided by SIAPS. The plan addresses critical bottlenecks by recommending interventions that may be implemented over the next 18 months to bring Guinea closer to reproductive health commodity security.

Throughout **Latin America and the Caribbean**, SIAPS provided oversight to the inventory levels of antimalarials in eight countries as part of efforts to sustain gains recorded in quarter 3. In quarter 3, central warehouses reported that the availability of antimalarials was 85% during the period April to June 2016, illustrating 10% improvement compared to the previous quarter. Additionally, 12 countries have currently joined the PAHO strategic fund for pooled procurement and have submitted their procurement requirements; this will help circumvent issues inherent with local procurement and further increase availability of products.

During this quarter, SIAPS enhanced coordination and accountability within **Mali's** public pharmaceutical supply system. SIAPS participated in the Comité National de Coordination's quarterly meeting in August to update the country's malaria supply plan, ensuring that donations were properly recorded in logistics management systems and strategies were in place to avoid stock-outs. In collaboration with La Direction de la Pharmacie et de Medicament, the MNCH TWG conducted a quantification exercise that incorporated new international guidelines and recommendations from WHO and the UN Commission for Life-Saving RMNCH Commodities. During the quantification workshop, in addition to the estimation of commodity requirements for 2017-2020, numerous challenges related to product selection, data quality and completeness, STGs, and rational use of RMNCH commodities were identified and possible solutions were forwarded. Furthermore, SIAPS provided recommendations to Pharmacie Populaire du Mali regarding the need to make structural and operational changes to its warehouse design to ensure health commodities are properly stored. Working with USAID and Cooperation Neerlandaise, SIAPS helped finalize the vendor preselection process and adopt timelines and project management objectives for the warehouse construction project at central and regional levels in Mali. To monitor stock availability, SIAPS submitted PPMRm and PPMRc reports this quarter using data collected from OSPSANTE on stock status from the central and facility levels. Overall, stock levels of malaria commodities were adequate for the period.

In the **Philippines**, SIAPS provided specific inputs to revisions of the Philippine Action Plan to Control Tuberculosis and the National Strategic Plan to Eliminate TB that focused on the regulation and supply management of pharmaceuticals, laboratory supplies, and services. The NTP recently increased its target number of patients for treatment of drug-resistant TB. To

ensure uninterrupted supply of medicines for all patients, NTP with support from SIAPS quantified the additional medicines needed by using QuanTB software. As part of the quantification process, SIAPS also provided assistance to NTP in reviewing quality of data and improved the current drug supply management reporting template in Excel to include the new anti-TB drugs.

Despite ongoing political unrest in **South Sudan**, SIAPS coordinated two Pharmaceutical TWG meetings during the fourth quarter. During these meetings, SIAPS made presentations on the stock status of malaria commodities in the country. SIAPS has also been working closely with the Logistics Management Unit to generate stock status reports from the newly created South Sudan Pharmaceutical Dashboard. The dashboard is being piloted with information from three counties in the Central Equatoria State. Data generated from the dashboard is used to monitor the availability of tracer medicines.

Availability of quality assured ARVs and the rational use thereof continues to be an area of focus for SIAPS **Swaziland** as the country implements strategies toward an AIDS-free generation. SIAPS has continued to support the Swaziland National AIDS Program (SNAP) and the Central Medical Stores (CMS) to plan and mobilize resources in anticipation of the Test and Start Initiative. SIAPS supported the quantification committee to analyze program targets, taking into account increased levels of treatment eligibility and the current funding outlook into consideration. Based on SIAPS' analysis, CMS revised the forecast and procurement plan to ensure that adequate availability of ARVs as Test and Start commences. A comprehensive financial analysis was then conducted to determine the availability of funds for the procurement of drugs. A funding gap of about SZ 17.5 million was identified for quarter 2. The funding gap analysis was provided to the MOH for their feedback on how to address the financial resource gaps associated with SNAP's latest initiative. An emergency order of 600,000 packets of adult TDF/3TC/EFV was placed by USAID/PSM as a buffer for the new Test and Start Project. This consignment is expected to be delivered in the next quarter and will be sufficient for four to six months. The Swaziland Procurement Regulatory Agency and the MOH's Procurement Unit are closely working with SIAPS to strengthen the country's medicines procurement system. Recent collaborations have resulted in a draft procurement procedure manual and procurement systems strengthening plan. Swaziland continues to maintain a 0% stock-out rate of indicator ARV medicines at the facility level. However, stock-outs of nevirapine suspension and HIV RTKs (Determine and Unigold) occurred during the same quarter at CMS and Swaziland Health Laboratory Stores level, respectively. The stock-outs were then reversed through delivery of emergency shipments. Finally, as part of the capacity building and development effort, a group of eight warehouse officials were supported to attend a public health supply chain management training and study tour to South Africa, facilitated by Imperial Health Science's Training Academy.

IR 5b. Pharmaceutical Services Improved To Achieve Desired Health Outcomes

SIAPS improves pharmaceutical services by using a holistic approach that ensures that patients receive medicines optimized to their clinical needs in doses that meet their individual requirements for an adequate time and at the lowest cost to them and their community. During

this quarter, SIAPS provided support to countries through various technical areas and strategies, including pharmacovigilance (PV), rational medicine use (RMU), pharmaceutical care, essential medicines lists (EMLs), formularies, standard treatment guidelines (STGs), drug information and patient education, antimicrobial resistance (AMR), drug and therapeutics committees (DTCs), medicine use reviews, treatment adherence, and case management.

Pharmacovigilance

To create greater awareness on the importance of PV in **Ethiopia**, SIAPS held face-to-face discussions with 176 health providers at 12 health facilities in 4 regions. Participants received adverse drug event (ADE) report forms, newsletters, allergy cards, and guidelines. During the reporting period, 32 ADE reports were entered into the PV data management system.

In support of the Test and Start Initiative in **Swaziland**, SIAPS is continuing to integrate the PV system into the national AIDS program as a routine part of monitoring treatment quality and patient safety. Currently, 4,176 patients are enrolled in the active surveillance program (52% female, 48% male) and 1,212 adverse drug reactions (ADRs) have been reported by clinicians (68% related to anti-TB medicines and 32% related to ARVs) since inception of the program. The sentinel surveillance system is currently being implemented at seven hospitals and health facilities; it detected 157 ADRs this quarter. Also during this quarter, SIAPS supported the PV system through monthly supportive supervision and feedback visits and dissemination of ADR surveillance job aids.

With SIAPS technical assistance, the Adverse Drug Reaction Monitoring (ADRM) Cell in **Bangladesh** has made significant progress in strengthening their adverse event reporting system. SIAPS and the ADRM Cell organized a joint visit to the National Institute of Ophthalmology, National Institute of Cardio Vascular Diseases, and National Institute of Orthopedic and Traumatology Rehabilitation to promote greater awareness of the importance of PV. During this quarter, more than 150 ADR reports have been received by the Directorate General of Drug Administration (DGDA) from 30 hospitals and pharmaceuticals companies. A technical session of the Sub-Committee of Adverse Drug Reaction Advisory Committee (ADRAC) was facilitated by SIAPS on September 5, 2016, to analyze ADE reports. The sub-committee was able to review 67 ADE reports, which will be further validated by the full ADRAC in the next technical meeting planned for October 2016. Finally, to communicate to the public on the progress made in strengthening the PV system and conveying medicine safety news, the first PV newsletter is being finalized for printing. SIAPS also began work on integrating DGDA portal post-marketing surveillance data into DHIS2 in collaboration with the Directorate General of Health Services (DGHS).

In **Ukraine**, the recent approval of the revised MOH order on PV has garnered renewed interest from the State Expert Center and has helped move this activity forward. During this quarter, the Pharmacovigilance Working Group resumed progress on development of the national PV guideline modules. Modules 7, 8, 11, and 12 have been developed, while modules 9 and 10 are still under development.

In **Namibia**, to enhance the spontaneous reporting of ADRs to the MOHSS Therapeutics Information and Pharmacovigilance Center (TIPC), SIAPS supported the TIPC in mounting wall holders for yellow medicine safety forms in patient consultation rooms for ART and TB programs; 23 holders were mounted in 12 health facilities.

Rational Medicine Use

SIAPS **Ethiopia** supported nine health facilities in the Oromia, Dire Dawa, and Amhara regions in conducting medicine use training sessions. Topics covered included antibiotic resistance, medicines safety for administering multiple drugs, and medicine use considerations for chronic diseases, RMNCH, diabetes, and ART.

In the **Dominican Republic**, the first module of the second Certified Course on Rational Use of Medicines was facilitated by SIAPS on August 27; 32 students initiated the course. The updated course modules have been made available on the SUGEMI/National Health Service website. SIAPS also developed visual aids to promote the rational use of ARVs in accordance with the national STGs. The materials were validated with a group of prescribers in August 2016. Finally, in August, SIAPS also provided financial support for and helped organize the launch of the Diagnostic and Therapeutic Guidelines and the Pharmaceutical Formulary at an event in which the Dominican Republic's vice president delivered the opening remarks. In **South Africa**, SIAPS worked with the rational medicine utilization subcommittee of the Gauteng Pharmaceutical and Therapeutics Committee (PTC) to assess implementation of the 2014 STGs for primary health care facilities. The results show an increase in the use of medicines that were added to the new STGs, but did not show the expected decrease in medicines that were no longer included in the STGs. Overall, only 21% of medicines were prescribed in accordance with the STGs, signaling a need to continue raising awareness on the STGs and RMU.

In **Namibia**, SIAPS collaborated with MOHSS Directorate of Special Programs (DSP), Project HOPE, IntraHealth, and CDC to support implementation of community-based programs for improving access to ARVs. SIAPS participated in site-level visits to Nyangana and Engela districts to implement community-based ART (CB-ART) strategies. SIAPS support includes ensuring that dispensing tools are adapted to make ARVs accessible to CB-ART groups while maintaining product quality and accountability, and not compromising the quality of patient care. The EDT at these ART sites was adapted to allow ARV dispensing to CB-ART groups. Nurse mentors and pharmacy staff in these facilities were trained on the process flow and dispensing of ARVs to CB-ART groups.

In August a SIAPS technical staff presented a poster entitled “Strengthening preservice pharmacy training on rational medicine use, antimicrobial resistance, and PV” at the 76th FIP World Congress of Pharmacy and Pharmaceutical Sciences in Argentina. The preservice training modules described in the poster were developed in collaboration with the School of Pharmacy of the University of Namibia (UNAM). The poster can be accessed at <http://siapsprogram.org/wp-content/uploads/2016/09/Joshi-Strengthening-preservice-pharmacy-training-FIP-2016.pdf>.

To document achievements made over the life of the SIAPS Program, a legacy technical report has been drafted that describes cumulative results in pharmaceutical services, with a particular

focus on RMU and AMR containment. The legacy document will be finalized and published in the next quarter.

Pharmaceutical Care

In **Ethiopia**, where the increasing prevalence of chronic and non-communicable diseases combined with the high burden of infectious disease has increased the need for patient-centered pharmacy services, SIAPS continues to advance the practice of clinical pharmacy services in collaboration with in-country stakeholders including the Federal Ministry of Health. During this quarter, SIAPS supported nine hospitals in Amhara and Benishangul Gumuz regions in documenting and reporting on their clinical pharmacy services on a monthly basis. Through these services, the hospitals were able to reach 1,593 patients; 669 of these cases were documented with a patient medication profile form. During the reporting period, 411 drug therapy problems were identified, 365 (88.8%) of which were addressed by pharmacists.

During the quarter, SIAPS published a technical brief on pharmaceutical care which describes SIAPS' approach to strengthening the practice of pharmaceutical care in resource-constrained settings. The brief highlights the implementation experience in Ethiopia where 41 hospitals are implementing pharmaceutical care and clinical pharmacy interventions. The technical brief can be accessed at <http://siapsprogram.org/publication/technical-brief-improving-health-outcomes-through-delivery-of-patient-centered-pharmaceutical-care-by-pharmacists-in-low-and-middle-income-countries/>.

STGs, EMLs, and Formularies

In **DRC**, SIAPS worked with the National PV Center and the provincial health divisions in launching and disseminating the STGs which are being piloted in referral hospitals that have an established and effective DTC. The pilot trainings, which also used the opportunity to cover rational use and case management topics, generated interest from health authorities across 13 USAID-supported health zones who expressed a desire to see the STGs distributed to all health facilities in each province. During the quarter, 800 copies of the STGs were distributed to facilities across 80 health zones.

In **Sierra Leone**, a near-final version of the national EML, signed by the MOHS and chief medical officer has been produced. The document is undergoing final editorial review before being finalized.

In **South Africa**, the Essential Medicines List Tool was renamed Essential Medicines Electronic Access (EMeA) and was migrated to a new online domain (www.emela.org.za) and is currently undergoing user testing. STGs will also be migrated to the new site, and SIAPS is currently supporting the National Department of Health (NDOH) in adapting the guidelines to the new digital format. EMeA is expected to go live on October 20, 2016. SIAPS also provided technical support to assess the cost-effectiveness and budget implications of rheumatoid arthritis medicines for the tertiary/quarternary-level EML.

In **Ukraine**, the methodology for the selection of medicines for the EML was approved by the MOH and distributed to other ministries. The methodology is currently undergoing a second round of public dissemination before being finalized.

In **Namibia**, SIAPS continued providing support to the MOHSS in reviewing the National ART Guidelines to ensure alignment with new WHO recommendations. Specifically, SIAPS is working to support incorporation of CB-ART services as part of the new WHO-proposed differential care model, the adoption of pre-exposure prophylaxis, and appropriate ARV dosing in adolescents.

To enable the MOH in **Guinea** to utilize the latest WHO guidelines, SIAPS supported the MOH in launching the national EML (NEML) review process. Two regional workshops were conducted with a wide range of stakeholders to discuss potential reviews to the NEML.

Drug Information and Patient Education

In **Ethiopia**, to ensure updated information is available at health facilities for provider reference and patient education, the following materials were distributed to 3 hospitals, 3 health centers, and 12 health posts in Afar regional state: 22 antimalarial medicines dispensing registers, 50 National Malaria Diagnosis and Treatment Guidelines, 12 Health Education Manuals, and 8 AMR Prevention Policies.

AMR and Infection Prevention and Control

Using data extracted from RxSolution, a study on outpatient antibiotic consumption and antibiotic prescribing practices at district- and provincial-level hospitals was carried out in **South Africa**'s North West Province. The study's key findings include:

- More than one-third (39%) of patients received a prescription for an antibiotic during the two-year study period.
- One-third of patients receiving an antibiotic prescription received two or three antibiotics
- Some patients were prescribed up to eight antibiotics at a time, including two penicillins and two quinolones prescribed simultaneously.

In **Namibia**, SIAPS collaborated with UNAM School of Medicine and the University of Bonn to support the MOHSS Quality Assurance Division in implementing AMR prevention activities including the development of an abstract on "Country coalitions to promote infection prevention and control and prevent antimicrobial resistance" for the 6th Infection Control Africa Network Congress.

Also during this quarter, **Namibia** adapted the WHO generic early warning indicators (EWIs) abstraction protocol and entered the sixth round of integrating EWI collection into the national ART program, with technical support from the WHO, Tufts University School of Medicine, and SIAPS. Namibia selected five recommended WHO EWIs and abstracted data from all ART sites (50 main sites and 163 outreach and integrated management of adolescent and adult illness sites). The five indicators included on-time pill pick-up, retention in care, pharmacy stock-outs,

dispensing practices, and viral load suppression. A draft report consolidating areas of SIAPS support and the performance of the annual reviews since 2010 is under review.

In **South Africa**, SIAPS supported the MOH in preparing for the launch of the Ministerial Advisory Committee on Antimicrobial Resistance and supported the KwaZulu-Natal Provincial Pharmaceutical Services group in holding the province's first AMR task team meeting. SIAPS also provided further input into the "Use Medicines Safely" concept for South Africa's 2016 Pharmacy Week and supported translation of the materials into local languages.

In **Swaziland**, SIAPS continues to facilitate the development of an AMR strategy. As of this reporting quarter, SIAPS has supported appointments to the task team that will lead the development process and supported the approval of the team's TORs. SIAPS is partnering with WHO in development of the strategy and an initial draft is expected to be finalized in the next quarter.

During this quarter, SIAPS finalized and published revisions to the AMR Part 1 course for USAID's Global Health eLearning platform. The course can be accessed at <https://www.globalhealthlearning.org/course/antimicrobial-resistance-part-1-0>. Released in coordination with K4Health to coincide with the UN General Assembly's High-Level Meeting on AMR, SIAPS authored a K4Health blog post (<https://www.k4health.org/blog/post/understand-threat-antimicrobial-resistance-global-health-elearning-center>) to promote the newly revised course and also shared the course widely through social media channels. In the first weeks since its publication, 46 people from 18 different countries have earned a course certificate, including learners from Nigeria, Fiji, Ethiopia, Rwanda, and Kenya. The AMR Part 2 course, published by SIAPS and K4Health in November 2015, has been taken by 345 learners from 48 countries who have earned a course certificate.

SIAPS continues to build capacity of the Ecumenical Pharmaceutical Network (EPN) in the administration of three member-led projects related to antimicrobial stewardship and AMR. The projects are being implemented by the Christian Health Association of Malawi (CHAM), the Zimbabwe Association of Church-related Hospitals (ZACH), and Gertrude's Children's Hospital in Kenya. During the reporting period, CHAM conducted a baseline assessment of hand hygiene practices at Likuni and Daeyang Luke Hospitals, established hand-washing committees, and conducted trainings on proper hand hygiene guidelines. After training 23 journalists, ZACH is following up with each participant to establish a plan of action and is tracking publication of articles related to AMR. As of September, 16 articles have been published. At Gertrude's Children's Hospital, a questionnaire-based study was conducted to assess staff adherence to STGs. Based on the findings of the study, trainings were conducted with physicians and pharmacy staff on appropriate use of STGs and impact on AMR.

During the quarter, SIAPS published a summary technical report on the program's infection control activities (<http://siapsprogram.org/publication/improving-infection-prevention-and-control-practices-at-health-facilities-in-resource-limited-settings-siaps-technical-report/>) and continued making revisions to the Building Local Coalitions for Containing Drug Resistance guidance document.

Drug and Therapeutics Committees

During the reporting period, SIAPS **Mozambique** collaborated with the Hospital Pharmacy Department to perform a supportive supervision visit to the Province Hospital and held one DTC workshop. Based on the findings of previous medicine use evaluations (MUEs), SIAPS staff provided training on how to collect and report on prescription indicators, medication errors, and aggregate consumption. Members from seven DTCs attended the workshop in which they reviewed the results from previous MUE studies, exchanged best practices, and discussed continuous quality improvement strategies.

In **South Africa**, the ongoing support to the NDOH to strengthen PTCs is being transitioned to the local NGO, Right to Care. During this quarter, SIAPS facilitated collaboration between NDOH, Gauteng NDOH (where PTC implementation guidelines were first developed), and Right to Care to continue the development of a national policy and implementation guidelines on PTCs. Right to Care will also become the steward of the SIAPS-initiated PTC audit and geomapping tools.

In **Namibia**, SIAPS continued supporting therapeutic committees in optimizing their functionality at district and regional levels. With support from SIAPS, the Global Fund approved a proposal for a national training of therapeutic committees for the next calendar year. SIAPS will support the MOHSS in the development of materials for the national training in the coming months.

Drug Use Review/Medicine Use Evaluation

SIAPS assisted the Kunene region in **Namibia** to compile, design, and present the poster entitled “Promoting Rational Use of Medicines through Therapeutics Committees in Namibia: Evidence from the Kunene region” at the Medicines Utilization Research in Africa symposium in July 2016 in Botswana and at the National Pharmacist Forum in September 2016. The poster showcased efforts of the Kunene regional therapeutics committee to promote RMU and combat AMR, specifically HIV drug-resistance. It also highlighted the results of the medicine use review that investigated the overuse of paracetamol in the region in March 2016.

In **Ukraine**, the final version of the technical report on drug utilization reviews (DURs) for HIV medicines is undergoing editorial review.

In **DRC**, SIAPS provided technical and financial support to the MOH to evaluate the use of chlorhexidine digluconate 7.1% for umbilical care. The first phase of the evaluation was conducted in a sample of 29 health facilities in 8 health zones. The second and third phases of the evaluation are expected to continue throughout the next quarter.

In **Ethiopia**, SIAPS supported the DTC at Hiwot Fana Hospital in conducting a DUR of crystalline penicillin use in the pediatric ward. A total of 114 patient records were reviewed and assessed according to indication for use, frequency of administration, contraindications, and drug interactions.

In **South Africa**, SIAPS presented the benefits of using the ABC/VEN matrix as a routine monitoring tool to provincial Pharmaceutical Services. During the Gauteng Pharmacy Managers Conference 2015, the province undertook implementation of quality improvement projects at facilities using the ABC/VEN analysis as a monitoring tool. During the data analysis and MUE workshop in PY5Q2, pharmacy managers, drug controllers, and store managers analyzed the ABC/VEN analysis extracted for their own institution for the period April-November 2015 and developed quality improvement interventions. In July, 16 institutions submitted their post-intervention ABC/VEN analyses to the provincial office. Eleven institutions worked with their respective PTCs to conduct MUEs, resulting in improved use for the 13 identified items with an estimated 51% decrease in spending per month. Three institutions presented their results at the Gauteng Pharmacy Managers Conference in September.

Treatment Adherence

In **Namibia**, SIAPS continued supporting the MOHSS Directorate of Tertiary Health Care and Clinical Support Services and the DSP in implementing a mobile phone short messaging service adherence reminder for patients at ten ART sites through EDT. During this quarter, SIAPS helped to ensure that the adherence reminder system is functional at all facilities and that messages were sent through a centralized server.

SIAPS finalized the thought leadership document entitled Improving Medication Adherence through Systems Strengthening Approaches. In the following quarter, the document will be disseminated through appropriate channels

Case Management

In **Burundi**, SIAPS supported multiple government stakeholders in introducing integrated community case management (iCCM) in the health districts of Mutaho and Giteranyi. In Mutaho district, 58 community health workers (CHWs) completed the training and practical internship and received case management kits through support provided by SIAPS, CARITAS/Burundi (Global Fund principal recipient). In Giteranyi, 118 CHWs have been identified to receive iCCM training in October. Of the achievements and lessons learned presented at the SIAPS Burundi close out event held on September 22, 2016, the scale-up of iCCM across multiple health districts was a central highlight.

Portfolios and SIAPS IRs in the Year 5, Quarter 4 Report

COUNTRY/PORTFOLIO	IR1	IR2	IR	IR	IR5
			3	4	
Africa					
Angola	•	•	•		•
Benin		•			
Benin Ebola		•			
Burundi	•				•
Democratic Republic of Congo	•	•	•	•	•
Ethiopia	•		•	•	•
Guinea	•	•	•		•
Mali	•	•	•		•
Mali Ebola		•	•		
Mozambique	•				•
Namibia			•		•
Niger				•	•
Sierra Leone	•		•		•
South Africa	•	•	•		•
South Sudan		•	•		•
Swaziland	•	•	•		•
West Africa Regional	•	•	•		
Asia and Middle East					
Bangladesh	•		•		•
Philippines	•	•			•
Europe and Eurasia					
Ukraine	•				•
Latin America and the Caribbean					
Amazon Malaria Initiative	•		•		•
Dominican Republic	•	•	•	•	•
Core Portfolios					
Cross Bureau	•	•	•	•	•
Malaria Core	•		•		
MCH Core	•				•
NTD Core	•				
TB Core	•	•	•		•
TB Add-On					•
TB Rapid Response					•
Total Portfolios	21	15	18	5	23

CROSS BUREAU

Objective 1. Strengthen Pharmaceutical Sector Governance

The eLearning course “Good Governance in the Management of Medicines,” developed by SIAPS with assistance from the Knowledge for Health (K4Health) Project, was launched on USAID’s Global Health eLearning (GHeL) Center on December 2, 2015. As of September 30, 2016, 188 learners (of whom 66 are female) from 50 countries have completed the course. In July 2016, a video developed by K4Health of user case studies entitled “Hear How GHeL is Impacting the Lives of Our Learners!” was posted on the GHeL website. The video features an interview with the director of Sudan’s MOH’s National Medical Supplies Fund (NMSF)—the national center for procurement and distribution of medicines in Sudan—on the SIAPS-developed course. The director completed the eLearning course and made it compulsory and part of a performance evaluation for pharmacists working at the NMSF and, as of this quarter, 54 NMSF staff members have completed the course.

The eLearning course is one of four courses that make up the GHeL Governance and Health Certificate. In July 2016, the course authors collaborated with the course authors of the other three courses that were developed by the Leadership, Management, and Governance (LMG) Project and K4Health to host a two-week, facilitated, online study group to allow learners the opportunity to share experiences on practical application of governance practices and challenges encountered; 105 participants from 35 countries who had started or completed one of the four courses signed up for the study group, of which 31% contributed actively to discussions, which is the highest participation rate of any of the five GHeL study groups held to date. In the month following the study group, the completion rate of the SIAPS-developed course increased by 18%. K4Health developed and posted an infographic featuring the results of the study group on the GHeL website.

Also in the area of governance, SIAPS was invited to attend the LMG Governance Round Table on September 29, 2016, and participate in discussions on what governance at different levels can do to accelerate the journey to an AIDS-free generation, universal access to family planning and reproductive health services, and ending preventable child and maternal death.

Partner Contributions

The Governance and Health Study Group was led by LMG in conjunction with K4Health.

Constraints to Progress

SIAPS’ support to WHO Good Governance for Medicines Program activities is pending the completion of next steps by WHO.

Objective 2. Capacity for Pharmaceutical Management and Services Increased and Enhanced

SIAPS continued to provide support to the African Medicines Regulatory Harmonization (AMRH) Program, which endeavors to increase the capacity of the regulatory workforce to perform their functions. A committee designated institutions or partnership of institutions with specific regulatory science expertise and training capabilities as regional centers of excellence (RCOREs). Once an institution or partnership of institutions is chosen to be an RCORE, it adopts strengthening the regulatory workforce in Africa as its mission.

As indicated last quarter, SIAPS collaborates with NEPAD's (New Partnership for Africa's Development) AMRH team to review RCORE eligibility and selection criteria and develop a monitoring and evaluation (M&E) framework. SIAPS developed a scope of work for this assignment and evaluated the CVs of consultant candidates proposed by NEPAD.

During this quarter, SIAPS finalized the selection process and recruited a consultant to develop the M&E system for RCOREs. The consultant was hired to draft a monitoring framework and a list of key performance indicators; update RCORE eligibility, selection, and renewal criteria; develop evaluation tools; and revise the selection and renewal procedure for designating RCOREs.

The consultant contract began on September 19, 2016, with work expected to be completed by November 15. SIAPS will provide updates on the consultant's progress to NEPAD. During the next quarter, SIAPS will coordinate meetings with the consultant to monitor technical work and support technical directions. SIAPS will continue to maintain communication with NEPAD to coordinate review meetings with stakeholders.

The pooled procurement guidance document entitled *Establishing Pooled Procurement Systems Among Faith-Based Organizations: A Guidance Document for Successful Implementation* underwent editorial review this quarter. The first edit was completed at the end of the quarter, and the document is awaiting one last review and formatting before it will be finalized. It is expected to be available online by next quarter.

Objective 3. Information for Decision-making Challenges Addressed in the Pharmaceutical Sector

In the previous quarter, SIAPS submitted a manuscript that reviews the literature on pharmaceutical systems and pharmaceutical systems strengthening and proposes definitions and components deemed critical for tracking progress in systems strengthening to the peer-reviewed journal *Health Policy and Planning*. Comments from reviewers were received and addressed and SIAPS resubmitted the manuscript and a response to reviewers.

Also during this quarter, SIAPS technical experts met with SIAPS partner Boston University, School of Public Health (BUSPH), to discuss and finalize indicators to be included in the pilot of a tool under development that measures progress in pharmaceutical system strengthening for each of the seven critical components of a pharmaceutical system. Following the selection of

indicators for piloting, BUSPH submitted a proposed methodology for conducting the pilot to SIAPS. SIAPS HQ staff is currently communicating with country project directors and appropriate counterparts in the proposed in-country pilot sites in Kenya, Ethiopia, Bangladesh, and Afghanistan to finalize the methodology and ensure its appropriateness for each country context. Letters have been sent to the appropriate MOH contacts requesting approval for conducting the pilot in each of these four countries. SIAPS staff is concurrently working to finalize the performance indicator reference sheets (PIRS) for each selected indicator and is preparing the data collection tool in advance of a planned week-long data collector training workshop anticipated for the next quarter.

Partner Contributions

BUSPH submitted the draft data collection workbook, including a draft user guide, and populated the workbook with existing PIRS and/or metadata information as it was available from the indicator sources.

Constraints to Progress

Inconsistency of comprehensiveness regarding the existing PIRS and indicator wording across the source materials for the existing indicators has led to a delay in SIAPS's ability to pilot the tool and initiate data collection. Additional effort beyond what was anticipated is required to re-work existing materials into a cohesive set of indicators with sufficiently clear PIRS to support consistency and quality of data collected through the pilot.

Objective 4. Strengthened Financing Strategies and Approaches

In quarter 4, a new draft of the universal health coverage (UHC) policy paper was finalized. The paper aligns UHC with critical pharmaceutical systems components, namely, pharmaceutical products and services, policy laws and governance, regulatory systems, financing, human resources, information, and innovation, research and development. It is expected to go through technical and editorial reviews in October before being finalized for production. Once the paper is finalized, SIAPS will follow up with the GHeL Center on key design considerations for pharmaceutical management in UHC to be incorporated into the e-learning course.

In this quarter, SIAPS engaged the MSH health financing team on the potential to assist with the pharmaceutical expenditure tracking activity, which is in collaboration with the Health Finance and Governance (HFG) Project. Next quarter, SIAPS intends to meet with HFG to share updates and discuss the proposed way forward to complete this activity.

Partner Contributions

HFG is a key partner in the activity for establishing an institutionalized mechanism for tracking pharmaceutical expenditures.

Constraints to Progress

Delays in finalizing the UHC paper will cause delays with the e-learning curriculum.

Objective 5. Quality of Pharmaceutical Products and Services Improved

During this quarter, SIAPS finalized and published revisions to the AMR Part 1 course for USAID's GHeL platform. The course can be accessed at <https://www.globalhealthlearning.org/course/antimicrobial-resistance-part-1-0>. Released in coordination with K4Health to coincide with the UN General Assembly's High-Level Meeting on AMR, SIAPS authored a K4Health blog post (<https://www.k4health.org/blog/post/understand-threat-antimicrobial-resistance-global-health-elearning-center>) to promote the newly revised course and also shared the course widely through social media channels. In the first weeks since its publication, 46 people from 18 different countries have earned a course certificate, including learners from Nigeria, Fiji, Ethiopia, Rwanda, and Kenya. The AMR Part 2 course, published by SIAPS and K4Health in November 2015, has been taken by 345 learners from 48 countries who have earned a course certificate.

SIAPS continues to build the capacity of the Ecumenical Pharmaceutical Network (EPN) in the administration of three member-led projects related to antimicrobial stewardship and AMR. The projects are being implemented by the Christian Health Association of Malawi (CHAM), the Zimbabwe Association of Church-related Hospitals (ZACH), and Gertrude's Children's Hospital in Kenya. During the reporting period, CHAM conducted a baseline assessment of hand hygiene practices at Likuni and Daeyang Luke Hospitals, established hand-washing committees, and conducted trainings on proper hand hygiene guidelines. In Zimbabwe, after training 23 journalists, ZACH is following up with each participant to establish a plan of action and is tracking publication of articles related to AMR. As of September, 16 articles have been published. At Gertrude's Children's Hospital, a questionnaire-based study was conducted to assess staff adherence to standard treatment guidelines (STGs). Based on the findings of the study, trainings were conducted with physicians and pharmacy staff on appropriate use of STGs and impact on AMR.

SIAPS finalized the thought leadership document entitled Improving Medication Adherence through Systems Strengthening Approaches. In the following quarter, the document will be posted online and disseminated through appropriate channels.

Revisions to the Building Local Coalitions for Containing Drug Resistance guidance document are ongoing.

During the quarter, SIAPS published a technical brief on Pharmaceutical Care (<http://siapsprogram.org/publication/technical-brief-improving-health-outcomes-through-delivery-of-patient-centered-pharmaceutical-care-by-pharmacists-in-low-and-middle-income-countries/>) and a technical report on SIAPS' infection control activities (<http://siapsprogram.org/publication/improving-infection-prevention-and-control-practices-at-health-facilities-in-resource-limited-settings-siaps-technical-report/>).

Also during the quarter, a SIAPS technical staff member traveled to Buenos Aires, Argentina for the International Pharmaceutical Federation (FIP) 76th World Congress of Pharmacy and Pharmaceutical Sciences 2016 Conference and gave a poster presentation on “Strengthening preservice pharmacy training on rational medicine use, antimicrobial resistance, and pharmacovigilance.” The poster can be accessed at <http://siapsprogram.org/wp-content/uploads/2016/09/Joshi-Strengthening-preservice-pharmacy-training-FIP-2016.pdf>.

Additionally, a legacy technical report describing SIAPS’ cumulative work in pharmaceutical services is under development, with a particular focus on rational medicine use and AMR containment. The legacy document will be finalized and published in the next quarter.

During this quarter, SIAPS reconvened with NEPAD and with the WHO regulatory system strengthening (RSS) team to continue discussing plans for revising, adapting, and harmonizing the agencies’ respective regulatory assessment tools. Following these discussions, and careful deliberations internally and with USAID, SIAPS determined that the degree of duplication between the Regulatory System Assessment Tool (RSAT) and WHO’s Global Benchmarking Tool (GBT) was too great to justify the extensive effort still required to complete the planned and on-going revisions of RSAT and adapt it for AMRH. As such, the original version of RSAT will undergo only minor edits and formatting to ensure technical quality and professional presentation. The decision to scale-back the revision of RSAT and its future application for now, and provide an opportunity for the newly developed GBT to be applied and tested, stemmed in part from a new effort to coordinate technical partners working on RSS in low- and middle-income countries and create a coalition of interested parties, which uses common standards, tools, and indicators to help countries strengthen their regulatory systems. This coalition approach was presented and discussed at a meeting convened by WHO, which SIAPS attended in Washington, DC, in early September. SIAPS agreed to serve on a working group to refine the approach.

Partner Contributions

SIAPS’ partner EPN supported three of its member organizations in the implementation of results-oriented AMR projects.

K4Health collaborated with SIAPS to publish the revised AMR Part 1 course on USAID’s GHeL platform and supported its dissemination.

Constraints to Progress

The on-going revisions and repositioning of WHO’s GBT for regulatory systems, which posed serious challenges to SIAPS’ progress on revising RSAT in previous quarters, ultimately made RSAT redundant this quarter. In addition, NEPAD decided to use the regulatory indicators being piloted in the East African Community (EAC) as a basis for the AMRH regulatory assessment and M&E tool, rather than adapting RSAT or GBT.

Objective 6. Contribute to the Generation of New Knowledge and Dissemination of Evidence-based Approaches and Best Practices

The gap analysis of the WHO Essential Medicines and Health Products (EMP) Information Portal was successfully completed in early July 2016. The objective of the gap analysis was three-fold: to identify pharmaceutical management themes that are missing in the portal and determine which themes should be considered priority; determine potential sources of documentation that address the aforementioned technical thematic gap areas; and provide recommendations for alternative processes for screening and capturing (into the portal) national publications, such as essential medicines lists, national medicines policies, and other pharmaceutical resources. In addition to addressing these areas, the report, which was finalized and submitted in July, identifies two other large gaps in the WHO portal: the lack of a strategy that clearly defines the purpose, target audience, and scope of the portal; and the limited reach of the portal (the analysis found that informants and survey respondents from high-income countries were more likely to be aware of the portal than were those from low- and middle-income countries).

The next priority is the development of a sustainability plan that addresses how the portal will be maintained in the future, to include a thorough analysis of maintenance costs, human resources, technical improvements, quality assurance of submitted documents, and continued promotion. The plan ought to incorporate the recommendations outlined in the gap analysis.

This quarter's Google Analytics show a nominal increase in the number of new visitors to the portal (from 79.9% to 81%) and an 8.9% decrease in the number of sessions. There was a modest increase (5.09%) of sessions conducted on mobile phones, which shows that users are accessing the site via this route. However, once on the site, they are not staying very long: there was a slight increase in the bounce rate compared to last quarter (.28% change), and average session duration is just under 1 minute (3.32% less than last quarter). Both organic search traffic and direct traffic decreased by 10% and 3%, respectively, while referral traffic (traffic from sources outside of Google) increased by 4%.

In September, the SIAPS communications team began scheduling tweets on the SIAPS Twitter account promoting the portal. It is expected that this will increase awareness about the portal and increase the number of submissions and demand generation. As of September, the portal contained 5,543 documents.

As reported last quarter, SIAPS collaborated with USAID's Promoting the Quality of Medicines (PQM) Program to propose revisions to module 6 entitled "Medical Products, Vaccines, and Technologies" of the Health Systems Assessment Approach manual. SIAPS is awaiting direction on the USAID-WHO collaboration and the next implementing partners' meeting organized by HFG Project colleagues, who are coordinating revisions of the entire manual.

Partner Contributions

WHO reviewed the gap analysis report and continues to contribute to the WHO EMP portal's management and improvements.

Constraints to Progress

The development of the sustainability plan has been delayed due to conflicts in schedules and other emerging priorities. The SIAPS team will convene to outline a plan for completing the document given current time and budget constraints.

East African Community Medicines Regulation and Harmonization Program (EAC-AMRH) Portfolio

Objective 1. To Develop and Implement Harmonized Pharmacovigilance Requirements, Guidelines, Procedures, and Practices for the Regulation of Medicines, Health Products, and Technologies in the EAC Region

During this quarter, SIAPS reviewed and provided technical input for a concept note that the EAC secretariat sent to the national medicines regulatory authorities in the EAC member states describing the approach and methodology for carrying out a pilot pharmacovigilance (PV) system baseline assessment. The concept note included the harmonized EAC PV indicators, which were finalized by the EAC Expert Working Group for PV at a workshop led by SIAPS in Rwanda, as reported in the previous quarter. The PV assessments were originally expected to take place this quarter; however, they were put on hold by the EAC secretariat due to conflicting activities. They are now expected to take place in the next quarter.

GLOBAL PROGRAMS

Malaria

Goal: Improve access to and appropriate use of quality-assured malaria commodities to reduce the malaria burden

Overall Quarter Progress

Under the first objective, SIAPS is documenting its contribution to controlling malaria through systems strengthening approaches in five countries. Under the second objective, SIAPS facilitated President's Malaria Initiative (PMI) procurement decisions by reporting on the stock status of malaria commodities in Angola, Burundi, Ethiopia, Guinea, Mali, South Sudan, and Uganda.

Objective 1. Strengthen Pharmaceutical Sector Governance

SIAPS participated in a meeting with PMI to discuss the project's transition plan for malaria activities. A detailed transition plan was shared with PMI. SIAPS also participated in a meeting to discuss end use verification (EUV) transitions between SIAPS and the procurement, supply, and management project. The document to showcase how pharmaceutical systems strengthening approaches and activities support efforts to control malaria is still undergoing internal review.

Objective 2. Increase Utilization of Pharmaceutical Information for Decision Making

To facilitate procurement decisions at PMI, SIAPS aggregated data and reported on stock status of malaria commodities from Angola, Burundi, Ethiopia, Guinea, Mali, South Sudan, and Uganda. During this quarter, EUV surveys were conducted in DRC, Ethiopia, Guinea, and Mali.

Neglected Tropical Diseases

Goal: Ensure the availability of quality medicines and supplies and effective pharmaceutical services to increase the efficiency of NTD control and elimination programs

Overall Quarter Progress

The SIAPS Neglected Tropical Diseases (NTD) portfolio hosted two supply chain management (SCM) workshops in Guinea and Benin in late August. Eighty-one people from eight countries attended the workshops. SIAPS completed the post-workshop report and submitted it to USAID and the participants with feedback from the workshop. SIAPS hosted a debriefing of the assessment of the Senegal NTD SCM in July 2016. SIAPS completed the development of the standard operating procedures for the NTD SCM, which are currently with editorial for final review.

Objective 1. Strengthen NTD Global Coordination and Oversight Mechanisms

SIAPS attended the NTD nongovernmental development organization meeting in Washington DC in September 2016.

Maternal, Newborn, and Child Health

Goal: Ensure the availability of quality medicines and supplies and effective pharmaceutical services to reduce maternal, newborn, and child mortality

Overall Quarter Progress

SIAPS Maternal, Newborn, and Child Health (MNCH) continued to contribute to ensuring the availability of quality medicines and supplies and effective pharmaceutical services to reduce maternal, newborn, and child mortality. Because the UN Commission on Life-Saving Commodities (UNCoLSC) and many working groups are now slowing down as the groups are coming to an end, SIAPS has continued to work with various groups to finalize deliverables and document the work that has been done. For example, SIAPS continued to facilitate the merger of the Maternal Health Supplies Caucus (MHSC) of the Reproductive Health Supplies Coalition (RHSC) and the Maternal Health Technical Reference Team (MHTRT) of the UNCoLSC. SIAPS finalized the guidance document for integrating oxytocin into the EPI cold chain. SIAPS also coordinated with the United Nations Children's Fund (UNICEF) and the Program for Appropriate Technology in Health (PATH) to organize a meeting in October to determine how best to disseminate the amoxicillin job aids and support countries to adopt the tools.

Progress was also made toward developing guidance and tools for improving pharmaceutical management for MNCH medicines. Tools for mapping financial flows for MNCH medicines were developed and validated in Nepal, and data collection has begun in Uganda and Kenya through the subnational procurement assessment (SNPA).

Objective 1. Global Awareness of the Importance of Pharmaceutical Management for MNCH Medicines and Supplies Increased

During this quarter, the SIAPS Senior Principal Technical Advisor continued to prepare for the upcoming meeting of the RHSC. She drafted an initial agenda and met with Milka Dinev to further discuss the facilitation methodology. She also reviewed Innovation Fund proposals. Next month, Shafia Rashid and Fabio Castaño from MSH will represent SIAPS at the RHSC meeting in Seattle in the MHSC (Rashid) and Systems Strengthening (Castaño) working groups.

The SIAPS Principal Technical Advisor chaired the August 26 meeting of the Supply Chain Management (SCM) subgroup. During the meeting, it became clear that the role of the group in coordinating technical assistance requests for integrated community case management (iCCM) would be minimal because the Financing Task Team (FTT) had not received any confirmed requests.

In preparation for the Institutionalizing Community Health Conference (ICHC), SIAPS is working with the SCM subgroup and Kerry Ross of the Child Health USAID team to plan a session on commodities; the title and content of the session are still being developed. SIAPS further participated in a meeting of the iCCM FTT to discuss how to document the group's work.

Finally, comments were received from the World Health Organization co-authors on the review of current pharmaceutical management policies and systems that affect access to essential MNCH medicines and supplies. SIAPS will revise the document based on the comments and submit it to the Countdown Health Systems and Policy working group chairs for approval prior to publication.

During the next quarter, SIAPS will continue to assist in planning the ICHC, co-chair the SCM subgroup meetings, and contribute to the iCCM FTT documentation. SIAPS will start to work on the activities that are defined in the MHS caucus work plan during the meeting of the RHSC.

Objective 2. Guidance and Tools for Improving Pharmaceutical Management for MNCH Developed and Disseminated

The SIAPS Technical Advisor reviewed and analyzed data from the SNPA in Kenya. However, to finalize the results, there is a need to follow up with the counties as well as with national-level stakeholders, such as the Ministry of Health (MoH) and the Division of Reproductive Health, to better understand the procurement and budgeting processes. In October, the SIAPS Technical Advisor will travel to Kenya to finalize the results of the SNPA and share them with key stakeholders for input.

The tools for mapping financial flows for MNCH commodities were finalized and field tested in Nepal. The SIAPS Senior Technical Advisor (STA) worked with a local consultant in Nepal to collect data on mapping financial flows of MNCH commodities. The data were shared and discussed with Deborah Armbruster and Helen Petach of the USAID MNCH team. The report for Nepal is being drafted and will be finalized during the next quarter. At the request of USAID Washington, a presentation on the Nepal assessment has been drafted. This will be presented by USAID and the commodities task team for the GFF meeting in November.

In Uganda, the contract for a local consultant for the financial flows activity was finalized, and data collection began at the end of September. The SIAPS STA is working closely to follow up with the local consultant to ensure that all relevant data are collected. The findings from Uganda will be shared early next quarter.

The financial flows activity has been discussed and approved by the Mission and the MoH in Bangladesh. Due to the highly technical and qualitative nature of the data to be collected, it was decided that the SIAPS STA will travel to Bangladesh and work directly with a local consultant to collect the data. The consultant in Bangladesh has been identified, and the consultant is expected to begin data collection by the end of October.

While the Mission in Kenya has approved the financial flows activity, there have been some delays in getting necessary approvals from the MoH due to scheduling conflicts and travel of key MoH personnel. As a result, it was decided to expand the financing section of the SNPA to collect more information on budgeting practices at the county level. This will be collected during the follow up with the counties that will be done to finalize the SNPA.

Finally, in Ghana, SIAPS worked with a local consultant to verify that the information can be collected by speaking to key stakeholders within the MoH, particularly those working on MNCH and budgeting. However, the Mission had concerns regarding the feasibility of collecting the data during an election year and did not approve the activity. As a result, this activity will not be implemented in Ghana.

Constraints to Progress

There were delays getting the necessary approvals for the financial flows activities in Kenya and Ghana and in finding appropriate local consultants in Uganda and Bangladesh.

Objective 3. Evidence Base for Effective Strategies to Improve Access to MNCH Pharmaceuticals and Services Increased

During this quarter, SIAPS continued to participate in the meetings of the MHTRT; the Supply Chain Technical Resource Team; the Chlorhexidine Working Group; the Injectable Antibiotics Working Group; and the Diarrhea and Pneumonia Working Group, which includes the amoxicillin and zinc subgroups.

SIAPS continued to plan for the MHTRT/MHSC merger mentioned previously and finalized the oxytocin in the cold chain document.

SIAPS worked with other TRT members to ensure that the latest versions of documents were uploaded to UNCoLSC website and assisted TRT conveners in preparing for the Geneva meeting. The SIAPS Senior Principal Technical Advisor attended the two-day meeting in Geneva, at which the accomplishments of the TRTs were discussed and the Lifesaving Commodities Practitioners' Network was launched. Also during this quarter, the legacy document for the SCTRT was drafted and sent to the group for review.

As part of the Diarrhea and Pneumonia Working Group, SIAPS coordinated with UNICEF and PATH to organize a meeting to be held in October on the amoxicillin job aids with all the partners involved in the studies and others to determine the best dissemination strategy and how to support countries to adopt the tools. During the next quarter, SIAPS will review PATH's English translation of the French DRC report and disseminate the DRC study on the amoxicillin DT job aids and dispensing envelopes at partners' meetings or at the RMNCH technical committee meeting in DRC.

TB Core

Goal: Ensure the availability of quality pharmaceutical products and support the implementation of effective pharmaceutical services for achieving global and US Government (USG) TB program targets.

Overall Quarter Progress

Substantial progress was made this quarter in completing a number of activities ahead of project close-out. SIAPS continues to be a leader in strengthening pharmaceutical governance at the global and country levels by providing capacity-building exercises to Stop TB partners, national TB programs (NTPs), and international organizations. This quarter SIAPS provided a number of country trainings and workshops and made significant progress in the development of online courses for SIAPS-developed tools.

The SIAPS TB Core portfolio trained over 75 people this quarter alone, increasing country capacity for medicines quantification and strengthening drug management practices to ensure that patients have access to lifesaving treatments. The results of these capacity-building activities include an increased pool of TB pharmaceutical managers and increased awareness by Stop TB partners of pharmaceutical management issues.

Objective 1. Pharmaceutical Governance for TB Strengthened at Global and Country Levels

In preparation for the Union Conference next quarter, staff created and updated nine technical information materials to promote SIAPS tools and results. Staff whose abstracts were accepted began working on posters. Staff also began working on their presentations for symposia and workshops coordinated with partners.

Objective 2. Capacity for TB Pharmaceutical Supply Management and Services Increased and Enhanced

During quarter 3, the SIAPS principal technical advisor for TB traveled to Cepina, Italy, from September 27–30, 2016, to facilitate sessions on pharmaceutical management for TB at the course “Implementing New Stop TB Strategy: Skills for Managers and Consultants (TB, MDR/XDR-TB, TB/HIV).” This course was designed by the WHO Collaborating Centre for Tuberculosis and Lung Diseases in Tradate, Italy. The goal is to further develop the necessary skills to plan, implement, and evaluate a TB control program, based on the Stop TB strategy in the era of MDR/XDR-TB and HIV for country TB managers, international consultants, and donor representatives. With USAID funding, SIAPS developed sessions on pharmaceutical management and has supported the course since its inception.

During this quarter, pharmaceutical management training materials were updated to include recent changes in TB control strategy and pharmaceutical management with a main focus on the introduction of new TB medicines and novel regimens. The daylong session on TB/TB-HIV pharmaceutical management was attended by 23 participants (8 male, 15 female) from 13

countries, including Mozambique, Oman, Kyrgyz Republic, Ghana, Democratic Republic of Congo, Switzerland, Papua New Guinea, Romania, Nigeria, Myanmar, Thailand, Kenya, and Scotland. The first half of the session commenced with a general introduction to TB pharmaceutical management frameworks and a description of challenges and good practices for the introduction of new TB medicines. The sessions utilized case studies and group work to make the training interactive for adult learners. The second half of the day focused on quantification using the SIAPS-developed QuanTB tool. Participants practiced quantification using predefined exercises. The main purpose of the exercise was to expose countries to QuanTB as an option for their country quantification and early warning system needs.

This quarter, SIAPS co-facilitated the Applied TB Quantification Workshop using QuanTB with the Pan American Health Organization (PAHO) and Global Drug Facility (GDF) staff. The workshop was given in Guatemala to representatives of selected Latin American countries. It was attended by 31 participants (25 female, 6 male) from 14 countries from different units and departments of the NTPs, Ministries of Health (MOHs), PAHO TB sub-regional focal points, and the Strategic Fund. In preparation for the workshop, SIAPS created customized QuanTB training materials in Spanish. All participants agreed to update the forecasts that were made with their actual country data during the workshop and send them to PAHO Washington DC's Regional TB Program. In the coming quarters, PAHO will work with countries to create or reinstate national TB drug and supply management working groups and provide technical assistance to countries using QuanTB. SIAPS worked to coordinate activities among stakeholders in the region, resulting in the Strategic Fund's agreeing to create and promote a community of practice for TB pharmaceutical management, based on a platform on the PAHO website. Further plans to replicate this workshop at the sub-regional level were made, allowing participants to be part of the facilitation team in sub-regional trainings. Stakeholders are working to secure funding for the sub-regional trainings.

Quarter 4 saw significant progress in developing the online training course for QuanTB. The team reviewed all module 1 units, which were uploaded on the LeaderNet platform. Functionality was reviewed to make sure the course was loaded correctly and to troubleshoot any issues. Following discussions on demonstration videos for QuanTB, the decision was made to insert video links in the eCourse instead of embedding the videos into the actual units. This will allow the user to click a link and have the video open in a separate browser window. The sizes of the videos were adjusted and reduced as the SIAPS team recorded the videos in a larger screen than the standard size. Introductory messages for the units were developed and provided to the SIAPS consultant to insert into the course. Progress was made on the certificate of completion and it is expected to be finalized in the next quarter. Next quarter SIAPS plans to make the required changes to the course to reflect updates in the new version of QuanTB V4.0. SIAPS also plans to finalize and release the course and begin wide dissemination to target audiences.

Partner Contributions

PAHO played a critical role in the overall organization of the LAC QuanTB workshop. SIAPS developed training materials and led the training for all countries and GDF provided funds. PAHO also assisted SIAPS in facilitating the workshop and will be central to the follow-up with participants' countries, scaling up, and continuation of the activities after SIAPS ends.

Constraints to Progress

SIAPS experienced significant delays in the completion and publishing of the eCourse due to the fact that the updated version 4 of QuanTB is still not ready for release. Module 2 will not be finalized until the new version is released and updates are incorporated in the eCourse, therefore SIAPS adjusted the timeline for QuanTB eCourse publishing to end of October 2016. Further constraints include issues with the course when using an iPhone. Currently, the modules play well on PC and MAC laptops, iPad, Android phones and tablets. The LeaderNet team is still checking with the technical team on this, but SIAPS does not anticipate this to be a major issue as the majority of our users use Android, Apple products being relatively more expensive.

Objective 3. Improved Utilization of Information for TB Control Decision Making

e-TB Manager (e-TBM) use remains high and has been continuously improved with additional functionalities and general fixes for enhanced use. Updated versions have been regularly released and shared with selected countries using the system. e-TBM is currently operating at 1,619 sites in 10 countries. Globally, 2,903 active users are managing 620,345 TB cases, DR-TB cases, and presumptive TB individuals. e-TBM version 3.0 with enhanced functionalities and the ability to run on portable devices is currently undergoing testing in preparation for launch at the Union Conference in Liverpool. SIAPS will continue to provide technical support in the coming quarter, combining SIAPS, Challenge TB, WHO, and country funds for adapting, reviewing, updating, monitoring, and implementing e-TBM in Azerbaijan, Armenia, Brazil, Bangladesh, Cambodia, Indonesia, Namibia, Nigeria, Ukraine, and Vietnam.

By the end of quarter 4, there were more than 250 downloads of QuanTB version 3.0 alone from the SIAPS website, bringing the total number of downloads to more than 1,650 since the tool's inception. Development of QuanTB version 4.0 with enhancements and new functionalities for supply planning continued this quarter. Version 4 is expected to be released next quarter.

The multi-country e-TBM user satisfaction survey concluded. We received 1,753 responses with a completion rate of 86% from 9 participating countries. The average response rate of 76% among the 9 countries significantly exceeded our expectations. Key results of the survey include: 81% of users agree that e-TBM improves patient case management, 80% find e-TBM to be reliable, and 75% agree that having the capacity to use all of e-TBM's features is helpful.

Partner Contributions

Country and international partners have provided continuous feedback for both e-TBM and QuanTB enhancements. SIAPS country presence and strong linkages with local partners for system implementation and monitoring have been critical to achieve desired outputs.

The following entities collaborated with the SIAPS Program to enable administration of the survey: USAID Health Information Policy and Advocacy Project implemented by Palladium (Cambodia); USAID/Challenge TB implemented by KNCV TB Foundation (Indonesia); WHO/EURO (Armenia), and SIAPS country programs in Bangladesh, Namibia, and Ukraine.

Constraints to Progress

- Sub-optimal in-country human resources for e-TBM implementation and monitoring (e.g., high staff turnover, deficiency of dedicated local MIS, IT, and TB specialists)
- Lack of or unreliable data regarding TB cases and medicines inventory remained a problem

Objective 4. Improved Pharmaceutical Services and Access to TB Products to Achieve TB Goals

SIAPS worked with the NTP in Tanzania to strengthen quantification of TB medicines and drug management practices during quarter 4. Several challenges arose during the quarter, as the TB and Leprosy Program remodeled their Logistics Management Information System (LMIS), which tried to stimulate the facilities to request commodities based on their usage and LMIS data. Although the system has several advantages, the challenge of pseudo stock-outs and the ability of health care workers to cope with the new system remain.

SIAPS worked with the NTP and stakeholders to agree on the transition to the new pediatric formulations after intense deliberation; new pediatric patients will be enrolled in Dar es Salaam by June 2017. SIAPS also worked with the NTP and stakeholders to transition 50% of MDR-TB patients to the shorter treatment regimen by May 2017 and the remaining at a later date. SIAPS staff advised on the issue of slow uptake of XDR-TB medicines. During a previous quantification, it was estimated that 1% of all notified MDR-TB cases were likely to be XDR-TB cases, equivalent to 3 patients in 2015, 3 in 2016, and 3 in 2017. However, only 1 XDR patient was detected in 2015, contributing to overstocks of medicines.

SIAPS staff began conducting a review of QuanTB implementation and related technical assistance to determine key achievements, experiences, challenges, and lessons learned from NTPs that worked with SIAPS. During quarter 4, data was collected through a review of relevant background documents and reports, structured in-depth interviews with SIAPS TB home office staff, TB field advisors, and local beneficiaries of the technical assistance (i.e., active QuanTB users and senior NTP decision makers). Additionally, a satisfaction survey of country beneficiaries and global partners was created and administered. Survey data for Bangladesh, DRC, Kenya, Myanmar, Nigeria, Philippines, Tajikistan, Tanzania, Uganda, and Zimbabwe were analyzed and key aspects and results of the evaluations were summarized in draft country briefs shared with the SIAPS in-country or regional TB field advisors for their review and inputs.

During this quarter, the analysis of the economic impact of stock-outs in the Philippines was completed and a final draft of the report was provided to the SIAPS TB Core principal advisor. A visit was made to Kenya in August 2016 to conduct a similar analysis of the impact of stock-outs and other types of treatment interruption. SIAPS in-country and HQ staff collaborated to gather additional data. SIAPS staff met with the NTP and partners to collect provider and patient behavior algorithms and costs. A draft report of the analysis of the economic impact of stock-outs in Kenya is expected in the next quarter.

Partner Contributions

The evaluation is being conducted in collaboration with local in-country beneficiaries (NTP counterparts) and global TB partners (GDF/Stop TB, Global Fund, KNCV Ely Lili Project). In-country NTP beneficiaries participated in in-depth interviews and completed country beneficiary experience and satisfaction surveys. Global partners completed global partner beneficiary experience and satisfaction surveys.

Constraints to Progress

- Delays in obtaining NTP approval to collect data and difficulty securing appointments and remotely interviewing prospective in-country TB respondents, due to stakeholders' competing in-country commitments.
- Unable to schedule and conduct interviews in South Sudan, Uzbekistan, and Zambia

TB Core Add-On Portfolio

Objective 5. Improved Pharmaceutical Services and Access to TB Products to Achieve TB Goals

DRC

During this quarter, SIAPS, in collaboration with the Union provided technical support to the National TB Program (NTP) during the quantification meeting for anti-TB medicine needs for 2017. SIAPS also provided technical support to the NTP in the development of supply chain indicators. SIAPS supported the NTP and CARITAS CONGO to conduct an inventory of anti-TB medicines at the Bollore warehouse to ensure the needed quantity of anti-TB medicines is available for the NTP.

South Sudan

This quarter was marked by significantly building local capacity in quantification of TB medicines. SIAPS staff made a trip to Juba to provide technical assistance to the NTP on pharmaceutical management. A number of achievements were made during the trip, including support to the NTP to conduct a quantification of NTP requirements of adult and pediatric formulations of TB medicines for 2017 and 2018. As a result of this quantification, a supply plan was also developed and submitted to the NTP for approval and initiation of the procurement process. The program will switch to the new pediatric formulations starting in December 2017, and in the coming quarter, SIAPS will assist the NTP in developing an implementation road map.

An early warning system (EWS) report was generated by using the SIAPS-developed QuanTB tool, and the report was shared with the NTP, resulting in the discussion of action points and a debriefing meeting with the NTP, UNDP, and WHO. SIAPS also provided refresher training on QuanTB to NTP staff in charge of commodity logistics to build their capacity in quantification and usage of the tool.

To further strengthen drug management practices, SIAPS supported the NTP in the development of several Logistics Management Information System (LMIS) tools and a LMIS concept note this quarter. SIAPS supported the review and revision of LMIS tools used by health facilities to request TB commodities to include new pediatric formulations. A daily activity register was designed for use in small facilities to record patient transactions and medicine stock to enhance accountability of medicines at the facility level. To clarify roles, SIAPS worked with the NTP manager and deputy NTP manager to designate staff in charge of pharmaceuticals at the three MDR-TB treatment hospitals who will be responsible for managing MDR-TB medicines, including requesting and dispensing to patients. SIAPS supported the development of an LMIS form to request MDR-TB medicines. SIAPS worked with the NTP to draft standard operating procedures (SOPs) to guide pharmaceutical management at the facility level. The SOPs were created for dispensing, requesting and reporting, inventory management, and storage conditions. The SOPs were revised to reflect the new facility TB-medicine forms and tools; the SOPs need to incorporate MDR-TB elements and be submitted to the NTP for approval.

During quarter 4, a concept note outlining the design of the LMIS was drafted. SIAPS held discussions with the designer of the current LMIS on possibilities of expanding the functionality to capture data on commodities. Next quarter, SIAPS plans to follow up to ascertain how LMIS can be implemented and how a mobile-based application that is compatible with the system can be incorporated to be used by facilities without access to the Internet.

Kenya

During this quarter, SIAPS continued to support NTP Kenya to address supply chain and quantification challenges by building local capacity for EWS as the end of the project approaches. Two EWS reports were generated during the quarter, one in August and one in September 2016. Action points that arose from the reports were discussed during two commodity security meetings.

SIAPS continued to provide technical support to the program to transition to the new pediatric formulations during quarter 4. In July 2016, SIAPS planned and implemented a workshop that brought together all partners/stakeholders in childhood TB control to sensitize them on the new formulations and outline the areas of support that they will be required to provide during the transition. Further building in-country capacity to manage childhood TB medicines, in August 2016, two workshops were held to sensitize the county teams on the roll-out plan. The teams comprised the county director of health, county pharmacists, and county TB and leprosy coordinators for each of the 47 counties. These teams were then tasked to roll-out the training for staff within their counties in a cascade approach. SIAPS continued to participate in the weekly new pediatric formulations committee meetings by providing inputs into the national stock situation, designing dosing charts, reviewing LMIS tools and guidelines, and preparing for national launch.

This quarter, SIAPS took part in a national quantification review for TB commodities during a workshop held August 30 to September 2, 2016. During this meeting the quantification conducted in April 2016 was revised to factor in the transition to the WHO approved short-course regimen for MDR-TB. SIAPS also participated in a GDF mission conducted September 12 to 21, 2016. SIAPS provided the GDF consultants with information on key stock status, prepared the report on the quantification review, and participated in the debriefing meeting.

SIAPS continued support to improve TB LMIS and its integration into DHIS2 during quarter 4. The tools have been uploaded into the DHIS 2 platform and pilot testing was conducted in three counties. Preparation for nationwide sensitization of sub-county staff and roll-out is ongoing. This is the final step in transitioning the national LMIS into an electronic system. Further building capacity in-country, SIAPS conducted a hands-on QuanTB training for one NTP pharmacist September 20 to 23, 2016. The training was meant to ensure that NTP can independently generate EWS reports and conduct quantification with minimal support from SIAPS as the project comes to an end.

Philippines

Activities are on-going in the Philippines, and SIAPS worked with the NTP to hold a national quantification meeting and develop a quantification report to prevent stock-outs and expiries in quarter 4.

Nigeria

SIAPS supported the NTP in the training of a new national coordinator during quarter 4. SIAPS provided the new NTP staff member training on QuanTB, LMIS reporting, the zonal quarter template, NTP reports, guidelines, and the link between the NTP and National Supply Chain Integration Projects. SIAPS provided significant technical assistance during the quarter on quantification, transition plan and drug management, active drug safety monitoring, and pharmacovigilance during the development of the road map for the introduction of the new MDR-TB short regimen. SIAPS provided technical inputs on the national quantification regarding building assumptions and assessment of wastage if all patients are completely enrolled by January 2017. Results of the quantification were shared with stakeholders and led to the decision that Nigeria should adopt a phase-in, phase-out plan to minimize wastages in terms of the two commodities (cycloserine and levofloxacin) that are not used in the new regimen. SIAPS also built capacity on QuanTB for users from the NTP (the head, assistant director, and staff of the Logistics Unit), the national coordinator of National Supply Chain Integrated Projects, Global Fund principal recipients (Association for Reproductive and Family Health, Institute for Human Virology Nigeria), staff of the Food and Drug Services with the Federal Ministry of Health, and six zonal pharmacists from the State Ministry of Health during the quarter.

Myanmar

During quarter 4, SIAPS conducted a technical assistance visit to Myanmar and supported the NTP with updating QuanTB with current stock data, generated and analyzed results for decision making, and built capacity of NTP and partners to use the tool. SIAPS also helped define processes for regular data collection and the needs of TB medicine procurement for 2017. SIAPS successfully handed over QuanTB and related EWS activities in Myanmar to the SCMS/PSM Project, as agreed with USAID and Global Fund principal recipient UNOPS.

Constraints to Progress

South Sudan

Human resources were a major challenge in South Sudan during quarter 4. The country has inadequate numbers of qualified staff who can benefit from capacity-building initiatives by SIAPS. Senior NTP staff has also left, further worsening the HR inadequacy. The recent conflict in the country, while short lived, was very disruptive and resulted in senior NTP staff leaving South Sudan.

Nigeria

Staff attrition was a challenge in quarter 4. The departure of the procurement specialist at the Association for Reproductive and Family Health affected procurement initiation and follow-up actions in the quarter. Also a delay in obtaining an import duty waiver certificate for second-line drugs emerged as a challenge this quarter.

TB/HIV Add-On Portfolio

Objective 6. Improved Pharmaceutical Services and Access to TB Products to Achieve TB Goals

In quarter 4, use of the SIAPS-developed QuanTB tool expanded into Ethiopia. At the request of the NTP, QuanTB was introduced, key personnel were trained, and the NTP announced it would be used to quantify first- and second-line TB medicines. SIAPS worked in collaboration with the Challenge TB project (CTB) to jointly organize a national quantification training using QuanTB that was held September 13–17 in Bishoftu. During the quarter, SIAPS trained 18 people (5 females and 13 males) on QuanTB and built their capacity in quantification of anti-TB medicines and use of the tool as an early warning system. Ten of the trainees were from Pharmaceutical Fund and Supply Agency (PFSA), four from the Pharmaceutical Logistics Management Unit (PLMU) of the MOH, two from CHAI, and the remaining two were from SIAPS and CTB. Following introduction of the tool, SIAPS supported regular monitoring of stock status and the early warning system and provided expert advice on medicines management to avoid expiries and stock-outs.

During quarter 4, SIAPS participated in meetings as a member of the national quantification team for anti-TB drugs and related pharmaceuticals in Ethiopia. During the meetings, SIAPS worked with the NTP and PFSA to generate and refine data inputs and build assumptions for the national quantification workshop. In addition to supporting the NTP to prepare, SIAPS helped conduct the national anti-TB drugs forecasting and quantification workshop held June 30th to July 1, 2016, that forecasted medicine needs until 2018. SIAPS participated in developing the report that came out of the meeting and several follow-up meetings to finalize the report. In addition to the quantification workshop, SIAPS provided technical support to the NTP and PLMU in the development and submission of the National Anti-TB Medicines, Equipment, Supplies, and Laboratory Reagents Procurement and Supply Plan to the Global Fund.

The quarter was marked by significant technical assistance to strengthen drug management practices and expand access to new TB medicines and formularies in Ethiopia. SIAPS staff attended monthly technical working group meetings on pharmaceutical supply management-related issues and supported the MOH to finalize the SOP document on the distribution of small volume anti-TB drugs to health facilities, ensuring that every patient has access to lifesaving treatments. SIAPS also participated in the national launching event workshop of the Programmatic Introduction and Use of New TB Drugs in Ethiopia, which was led by the MOH in collaboration with Partners in Health under their Ethiopia program. SIAPS participated in several technical discussions as a core member of the technical working group on the transition

to the newly produced pediatric anti-TB formulations and treatment of pediatric TB patients. SIAPS also worked closely with the NTP and PLMU in giving technical advice on the shift from the existing MDR-TB treatment regimens to the shorter course regimen.

In addition to the work in Ethiopia, SIAPS staff followed up with the Malawi NTP manager, logistics officer, and other stakeholders to set a date and begin preparatory training of NTP and other stakeholders on QuanTB. SIAPS received and reviewed a QuanTB file and Excel spreadsheet from the NTP logistics officer and provided a detailed interpretation of the data and recommendations for action.

Partner Contributions

CTB Ethiopia was involved in organizing the national quantification training on QuanTB in collaboration with SIAPS. The Global Fund, through the principal recipient for MDR-TB, funded the training of in-country users.

Constraints to Progress

Challenges in quarter 4 in Ethiopia included a delay from the MOH/PFSA in acting swiftly to recommendations provided by expert groups, as the MOH was preoccupied by prescheduled competing priorities. Data quality of reports coming from down the health care system and PFSA hubs remains a challenge along with human resources resulting from high staff attrition. Despite SIAPS efforts to coordinate a training on QuanTB, the NTP and stakeholders have not been trained because of scheduling conflicts in Malawi.

TB Bedaquiline Implementation Program

Goal: Provide technical support to the bedaquiline implementation program for pharmacovigilance of new TB medicines

Overall Quarter Progress

Kenya

A number of challenges arose in Kenya this quarter, resulting in stalled progress due to infrastructural challenges with implementing bedaquiline. The National TB Program (NTP) wants to create isolation wards to treat eligible patients using bedaquiline; however, funding for this has been difficult to access. Five patients were treated in an MSF-sponsored facility this quarter, and three additional patients are still awaiting treatment. Furthermore, there were challenges with accessing allocated funds to procure the needed companion medicines that remain ongoing.

Philippines

During this quarter, patients continued to start treatment with bedaquiline through the donation program, and, as of August 30, 2016, 11 patients were on bedaquiline. Uptake of bedaquiline has been slow during this quarter; however, no serious adverse events were reported from those already on treatment.

Swaziland

Patients continued to receive bedaquiline through the donation program and, by the end of the quarter, 68 patients were on bedaquiline treatment. Three patients failed to convert to smear negative while on treatment, resulting in a clinical audit to determine the reasons for the treatment failure. Adverse drug events were tracked and reported for patients enrolled on treatment.

Uganda

Quarter 4 was marked by significantly building local capacity to manage patients on bedaquiline. SIAPS held two additional workshops on August 10-12 and 5-17, 2016, that trained 84 health care workers from 15 treatment initiation sites at the request of the NTP; 54 participants attended the first training and 30 participants attended the second. Participants included 25 physicians, 29 nurses, 16 pharmacists, 10 other health care personnel, and 3 laboratory technicians. Workshops were comprised of sessions on the 9-month regimen, informed consent, patient inclusion criteria for bedaquiline, and the steps that treatment initiation sites take to access the drug. The training also provided a review of WHO recommendations for the introduction of bedaquiline in the country and completion of the checklist for country preparedness. Participants were also trained on the Uganda active TB drug-safety monitoring and management (aDSM) protocol by pharmacovigilance experts from the National Drug Authority.

Georgia

As of the end of the quarter, 228 patients were enrolled on bedaquiline in total. Of the 228, 20 were through compassionate use. Fifty-five patients were enrolled on delamanid, of which 12 were through compassionate use.

SIAPS staff built the capacity of 101 TB doctors on aDSM during quarter 4 over the course of three training workshops held August 25-26, 29-31, and September 12-14, 2016. During the next quarter, SIAPS plans to train 10 more groups of 15 clinicians each for a total of 150 additional health care workers trained on aDSM.

eLearning Course on New TB Medicines

Progress was made during quarter 4 in the development of an eLearning course on the introduction of new TB medicines. This quarter, SIAPS technical experts, the training design specialist, and a SIAPS MDR-TB consultant reviewed all eight modules for the course. Based on the first review, revisions were made for modules 1-6 and 8. Module 7 is currently undergoing a second technical review and is expected to be completed in the coming quarter. SIAPS staff is exploring options for an introductory video and individual module explanatory videos for the course. It is expected that the course will be completed in the next quarter.

PViMS

Quarter 4 saw significant progress in the expansion and implementation of PViMS. PViMS was implemented in Georgia by mid-July 2016. SIAPS trained three specialists from the National Center for Tuberculosis and Lung Diseases on the operation and use of the platform, ensured the system met the needs of the country, and deployed the system at the national level. The NTP was provided infrastructural support in the form of a server that was procured by SIAPS and transported to Georgia to deploy PViMS. PViMS was formally handed over to the National Center for Tuberculosis and Lung Diseases, and data from multiple sites in the country was captured in the system during quarter 4. Given that PViMS is a customizable system, valuable lessons were learned from the implementation of the system in Georgia. These lessons learned were translated into minor modifications and updates to the generic version to enhance functionality for future countries that implement the tool.

In addition to providing support to the Georgia PViMS deployment, requirements for the Philippines deployment were gathered and a scope of work was created during quarter 4. The scope of work informed the issuance of a purchase order to the developer, who is working toward meeting the deliverables. SIAPS continues to coordinate with Philippines MOH personnel on testing and user acceptance of the system, supporting interoperability with existing health information systems, and planning for implementation and training in-country.

Constraints to Progress

Philippines

Quarter 4 was constrained by a slower enrollment on bedaquiline than anticipated. This quarter, bedaquiline availability was expanded to all MDR-TB treatment facilities. However, despite the expansion in availability, the 10 MDR-TB treatment facilities cannot be accessed by all patients needing bedaquiline. Hesitancy to start treatment on bedaquiline by the treating physicians was also a constraint during the previous quarter. To overcome the hesitancy, the SIAPS consultant is working with clinicians, the NTP, and stakeholders to provide further training to clinicians and identify patients who would benefit from bedaquiline.

PViMS

Constraints during quarter 4 for the PViMS activity included late gathering of requirements for implementation in the Philippines. Development of the system for interoperability with other health information systems is slow. In addition, ensuring that needed personnel are available for implementation is challenging because of competing schedules.

REGIONAL PROGRAMS

LAC AMI

Goal: By the end of 2016, AMI countries will have institutionalized national and regional mechanisms to ensure a continuous supply of antimalarials as the key malaria control strategy, particularly in low-incidence locations and areas at risk for the emergence of ACT-resistant pathogens.

Overall Quarter Progress

Eight countries reported the April-June 2016 quarter stock levels for antimalarials. The availability of antimalarials in central warehouses was 85%, a 10% increase compared with the previous quarter. Twelve countries submitted procurement requisitions through the PAHO strategic fund. This may increase the availability of antimalarials in the coming months.

Objective 1. Pharmaceutical Sector Governance Strengthened

In Colombia, SIAPS staff members visited Amazonas, Bolivar, Choco, and Risaralda to conduct evaluations of the malaria control strategies using an adequacy approach (predefined set of indicators to determine a proper implantation), followed by workshops to develop plans to close the performance gaps. For the next quarter, SIAPS will present the results of these assessments and the gap closure plans developed by the malaria technical teams in all these departamentos. A technical report including the results of the assessment was shared with national counterparts during this quarter.

Objective 2. Pharmaceutical Management Information Available and Used for Decision Making at Different Levels of the Health System

Eight regular AMI countries reported stock levels for antimalarials for the April-June quarter. The availability of antimalarials in central warehouses increased to 85%, a 10% increase compared with the previous quarter. The denominator of the formula (the declared number of antimalarials included in the standard treatment guidelines) has been reduced in a few countries, increasing the percentage of medicines available. Some Central American countries are not including medicines for severe cases as products to be compulsorily stocked in their warehouses.

Twelve countries are currently procuring through the PAHO Strategic Fund. This may increase the availability in countries that are still facing problems with local procurement of antimalarials.

Objective 3. Pharmaceutical Services Improved to Achieve Desired Health Outcomes

SIAPS supported the pharmacy directorates in Ucayali, Piura, and Tumbes to implement demonstrative interventions to reduce the temperature in pharmacies. The interventions were

systematized to facilitate the scale-up to other facilities. SIAPS shared a technical report describing the intervention and results.

During the previous quarter, SIAPS completed an assessment on the situation of access to malaria treatment in Roraima gold mining areas, as the basis for the design of interventions. During this quarter, SIAPS analyzed the results with the Roraima team and based on the situation analysis identified the most feasible interventions to confront the lack of access to malaria diagnosis and treatment in gold mining areas.

During this quarter, SIAPS participated in “Malaria Elimination Course” in Brasilia (September 12–16), presenting experiences on pharmaceutical management in low incidence areas and supervision strategies.

Constraints to Progress

The systematization of interventions to improve access to malaria diagnosis and treatment in Brazil has been delayed due to difficulties accessing mining communities during the rainy season, and conflicting agendas of the local malaria program.

West Africa Regional

Goal: Facilitate the availability of quality pharmaceutical products especially those related to HIV and AIDS to achieve high level desirable health outcomes in targeted West Africa countries

Overall Quarter Progress

SIAPS supported National AIDS Control Program of Togo (Programme National de Lutte Contre Le SIDA [PNLS]) to implement new functionalities recently developed in HIV and AIDS Commodity Management Tool (OSPSIDA regional dashboard). These functions will optimize analysis of consumption trends by comparing actual consumption of HIV and AIDS products against forecasted consumption and quantity of products distributed from central level to lower level. Implementation of such functionalities helped Togo to adjust quantity of ARV drugs to procure avoiding stock-out for certain drugs and wastage of others.

SIAPS supported PNLS to conduct site visit in the five ARV dispensing sites where the Electronic Dispensing Tool (EDT) is currently being piloted to identify issues affecting the most recent version of the software installed in May 2016. This version of EDT was adequate for the roll-out nationwide except for a few adjustments to perform, which did not affect the tool's use.

SIAPS built capacity of the West African Health Organization (WAHO) and the National AIDS Control Commission of Cameroon (CNLS) to host and manage OSPSIDA also for the benefit of five focus countries in West Africa (Benin, Burkina Faso, Guinea, Niger, and Togo) and Cameroon, respectively as part of transition plan of OSPSIDA to the above institutions.

SIAPS attended the 21st international conference on AIDS (AIDS 2016) organized in Durban, South Africa, from July 18-22, 2016 where SIAPS presented its poster entitled "Use of an HIV and AIDS Commodity Management Tool (OSPAIDA) to identify the risk and prevent stock-outs of ARVs in West Africa--the Togo experience."

Objective 1. Increase the Use of Pharmaceutical Management Information for Decision Making at National and Regional Levels

The SIAPS regional project director travelled to Togo to work closely with PNLS to analyze consumption data entered into OSPSIDA. This analysis compared the trend of actual consumption data against forecasted data to assess prescribers' adherence to World Health Organization (WHO) recommendations about antiretroviral therapy. One WHO recommendation was to prioritize use of the tenofovir-lamivudine-efavirenz (TDF/3TC/EFV)-based regimen for adult patients on first-line medicines. In applying these recommendations, PNLS decided to switch the majority of patients on the zidovudine-lamivudine-nevirapine (AZT/3TC/NVP)-based regimen to TDF/3TC/EFV regimen by June 30, 2016. This was one of key assumptions used for long-term quantification performed by PNLS with SIAPS technical assistance in February 2016.

Using OSPSIDA analysis reports generated with May 2016 data entry, PNLs noted in July 2016 that actual consumption of AZT/3TC/NVP (300/150/200 mg) was 50% higher than forecasted (20,068 boxes consumed compared to 13,364 boxes forecasted in May 2016). However, the actual consumption of TDF/3TC/EFV 300/150/600 mg) was 40% lower than the May forecasted consumption (15,819 boxes consumed against 26,170 boxes). OSPSIDA reports alerted PNLs to encourage prescribers to put more patients on recommended regimen during the whole month of June, which was set as end point for switching all patients to TDF/3TC/EFV.

OSPSIDA reports generated with June and July 2016 data showed that PNLs was reaching its targets. Actual consumption of AZT/3TC/NVP 300/150/200 mg was only 5% higher than the forecasted June 2016 consumption (12,239 boxes consumed compared to 11,616 boxes). Actual consumption of TDF/3TC/EFV 300/150/600 mg was 2% lower than forecasted consumption for July 2016 (32,278 boxes consumed as compared to 32,880 boxes forecasted).

In July, SIAPS and PNLs staff visited five antiretroviral (ARV) treatment sites where the EDT was piloted to review the new version of the software installed in May 2016. At the end of site visits, SIAPS and PNLs concluded that current version of EDT was adequate for roll-out nationwide. One issue noted at all sites is the common lack of understanding of type of product transaction, especially those related to expiry, damages, losses, adjustments, loans, and borrowings, and their compilation in “transfer” and “expiry/damage” columns of the Rapport Synthèse (Monthly Logistics Report).

Constraints to Progress

SIAPS noted that the lack of supportive supervision and coaching from PNLs is an issue hampering the use of EDT in pilot sites and recommended that PNLs be in touch with pilot sites on a regular basis.

Objective 2. Improve Coordination among Regional and National Stakeholders Involved in Ensuring ARVs and HIV and AIDS Commodity Availability

A poster on Togo’s OSPSIDA’s experience in decreasing the percentage of patients at risk of stock-out of ARVs within a year was presented by SIAPS at the 21st International AIDS conference. The poster highlighted the coordination of effort between key donors and partners (USAID/West Africa, Global Fund, PNLs, and SIAPS) to support Togo in preventing the risk of a stock-out of ARVs starting in December 2014. SIAPS also supported the National AIDS Control Program to use the dashboard to incorporate patient and commodity data to assess the impact of a potential stock-out on patients receiving ARVs. Updating OSPSIDA with 2014 data revealed that 71% of ARVs in use at Togo were at high risk of stock-out at the national level (months of stock was less than six months), putting 96% of patients at high risk of treatment interruption. However, this 96% was reduced to less than 1% in November 2015 with close support from SIAPS. Deploying OSPSIDA in Togo has significantly enhanced the visibility of supply chain data for timely and evidence-based decisions that have contributed to the increased availability of HIV and AIDS products within a year.

Objective 3. Enhance Capacity for Pharmaceutical Supply Management

Since SIAPS West Africa Regional Project is ending in December 2016, the SIAPS Regional Project Director and OSPSIDA system developer travelled to WAHO to meet with key actors involved in Early Warning System Project Management Team held in February 2015 as part of implementation of transition plan. The entire committee was supposed to take over the role of SIAPS' West Africa Regional Project in managing OSPSIDA on behalf of WAHO to ensure sustainability and expansion to other countries in ECOWAS region. Prior to travelling to WAHO, SIAPS remotely hosted OSPSIDA through a WAHO server in France.

A two-day training session was conducted for selected WAHO staff at their headquarters in Bobo-Dioulasso, Burkina Faso. The training was held to make WAHO staff comfortable in terms of OSPSIDA management. However, a senior WAHO manager expressed concern about the fact that WAHO are not an executive body and that other tasks may take priority to the roll-out and management of OSPIDA. WAHO will also explore options to perhaps transfer OSPSIDA management-related activities to the Central Medical Stores of Cote d'Ivoire (Nouvelle PSP-CI) as the Nouvelle PSP-CI hosts and manages the WAHO security stock.

The same capacity building exercise has also been performed in Cameroon by SIAPS team where participants from National AIDS Control Program (CNLS) of Cameroon have been trained on regular management of OSPSIDA system. Four participants— an IT engineer and three logisticians from CNLS—attended the training. SIAPS also assisted CNLS Cameroon in purchasing new domain, and transferring and hosting the new site to an external webserver outsourced by the CNLS.

COUNTRY PROGRAMS

Angola

Goal: Improved availability of quality products for effective pharmaceutical service delivery and better health outcomes

Overall Quarter Progress

During the reported quarter, the program supported the National Directorate of Medicines and Medical Equipment (DNME) to organize a meeting of the Logistics, Operations and Procurement Subcommittee (Sub-Comissão para a Logística, Aprovisionamento e Operações [SCLAO]) as the official forum to jointly coordinate activities for all key public supply chain management stakeholders, including the national public health programs, the Central Procurement Agency for Medicines and Medical Supplies (Central de Compras de Medicamentos e meios medicos de Angola [CECOMA]), and MOH partners.

The program assisted the National Institute for the Fight against AIDS (Instituto Nacional de Luta contra a SIDA [INLS]) to finalize the development of the national manual of pharmaceutical management standard operating procedures (SOPs) for HIV and AIDS commodities to be implemented at the national, provincial, and health facility levels once approved and disseminated.

In the effort to establish a coordinated mechanism to follow up the distribution and management of PMI-donated antimalarial commodities in the Province of Luanda, three meetings were organized by the DNME with CECOMA, the National Malarial Control Program (NMCP), Luanda hospitals that received the donations, the provincial health office of Luanda, and municipal NMCP focal points. Subsequently, different supervision visits were organized to enhance the proper use of pharmaceutical management tools, such as stock cards and delivery notes, to track the commodities up to the end-user.

With USAID/PMI funds, the program assisted DNME and CECOMA in organizing a multi-stakeholder workshop to develop the national pharmaceutical supply chain strategic plan. In this workshop that was attended by high level officials from the MOH; other ministries that are involved in pharmaceutical supply chain; donors, including USAID and the Global Fund; and the private sector, five priority areas and related strategies were selected after a thorough SWOT analysis. An ad-hoc committee was established to finalize development of the strategic plan that will serve as a guiding document to improve the availability and use of safe, efficacious, quality, and cost-effective medicines and other health products in Angola for the next five years.

The program also collaborated with NMCP to continue compiling malaria case management reports from all 18 provinces and to monitor stock status of antimalarial commodities at CECOMA and provincial warehouses. SIAPS prepared and submitted the Angola quarterly procurement plan and monitoring report (PPMRm) to the global database managed by USAID |

DELIVER, as well as the end use verification (EUV) report that was conducted in five provinces in June 2016.

SIAPS collaborated with other local stakeholders in family planning (FP) commodities (UNFPA, CECOMA, and the National Reproductive Health Program [NRHP]) in conducting the physical inventory of all FP commodities and developing the distribution plan for FP commodities that were donated by UNFPA and USAID.

The program continued to provide technical assistance to the nine PEPFAR-supported health facilities in the Province of Luanda to implement good storage and good dispensing practices in the HIV services by mentoring pharmacy personnel.

Finally, USAID communicated to SIAPS the intention to transition supply chain activities to the new USAID-funded mechanism, Global Health Supply Chain, Procurement, and Supply Chain (GHSC-PSM). SIAPS participated in a meeting with USAID to discuss the transition plan and highlight which activities that can continue up to December 2016 and which ones will be transitioned to GHSC-PSM. Activities related to the support of the nine health facilities and the support to DNME to initiate a medicines registration system will continue under SIAPS while CECOMA technical assistance and other supply chain interventions will be transitioned to PSM beginning October 1st. A meeting between SIAPS and GHSC-PSM has been organized, and a transition plan is being developed by GHSC-PSM to be shared with SIAPS for review before being presented to USAID.

Objective 1. Pharmaceutical Supply Chain System Governance Strengthened

During the reported quarter, SIAPS continued to support coordination among pharmaceutical supply chain stakeholders. In September, the program supported DNME to organize one of two bi-monthly meetings of the SCLAO to jointly discuss and identify specific bottlenecks that affect the public health supply chain services. Selected Luanda hospitals participated in sharing the current commodity security situation in their respective institutions with SCLAO members.

To initiate the registration of medicines, an inventory of all medicines that have been imported into Angola for the last three years is needed. SIAPS assisted the DNME in developing an online data collection tool that will be used by importers to provide key information on the products, including their countries of origin and details on the manufacturers and local distributors. Additional data will also be captured, such as quantities imported and sales value for each product. This online tool will facilitate a quick submission from importers and timely analysis of the reported information to understand the current pharmaceutical market in Angola.

At the INLS level, SIAPS finalized the development of the national SOPs manual for managing HIV and AIDS commodities. Once the manual is approved by INLS, the program will assist in disseminating it in the nine PEPFAR-supported health facilities in Luanda.

In the discussions of the above-mentioned national pharmaceutical supply chain strategic plan development workshop, five areas were determined to be priorities, namely, strengthening governance in the supply chain of the national health services, streamlining the sourcing and

procurement processes for pharmaceutical products, improving warehousing and distribution systems up to the last mile, promoting public-private partnerships in pharmaceutical supply chain management, and ensuring the delivery and use of efficacious, safe, quality, and cost-effective medicines and other health products. For country ownership of this strategy, at least 68 participants from institutions that are directly involved in all the components of the pharmaceutical supply chain, were invited and actively participated in the discussions. These participants represented the Government of Angola, UN agencies, USAID, the World Bank, the Global Fund, the private sector, PSI, and World Vision. At the opening and closing ceremonies, high level officials including the secretary of state of the MOH, the US ambassador, and some national representatives of UN agencies accredited in Angola were present to show their support for the pharmaceutical supply chain strategic plan. The Global Fund has already selected some activities in the strategic plan to be considered in the health systems strengthening grant, especially in relation to building CECOMA's institutional capacity and supporting the public-private partnership.

Partner Contributions

- DNME: leadership role in organizing SCLAO meeting and other meetings to advocate for strengthening medicine regulatory systems
- DNME and CECOMA: coordination role in the development of the national pharmaceutical supply chain strategic plan
- INLS: coordination role in the development and validation of the SOPs manual for managing HIV and AIDS commodities

Constraints to Progress

- Low participation of public health programs in SCLAO meetings
- Competing MOH priorities
- Delayed finalization and submission of the national supply chain strategic plan due to competing priorities

Objective 2. Local Capacity for Pharmaceutical Management Enhanced

During the last quarter, there was no formal training planned. SIAPS continued to assist the provincial warehouse of Luanda to conduct regular inventories and use pharmaceutical management tools, especially for HIV and AIDS commodities.

SIAPS also continued its mentoring program in all nine health facilities that have been selected to receive direct support from PEPFAR to address issues in the pharmaceutical management of HIV and AIDS commodities. SIAPS technical advisors continued to play this role after the contract of the part-time consultants hired to provide support to the pharmacy team ended; this support included dispensing ARVs and implementing stock cards in health facility warehouses and the weekly ARV consumption forms in health facility dispensaries. Some health facilities have opted to issue ARV medicines at pharmacy-level which has resulted in more client satisfaction because the waiting time in the clinic has been reduced tremendously. Facilities are

now supported to record each stock transaction so that more reliable stock data can be reported at the end of each month.

The program submitted to CECOMA all the planned documents and tools to be validated and implemented during medicine procurement, warehousing, and distribution.

Partner Contributions

- Provincial Warehouse of Luanda: pharmaceutical management of HIV and AIDS commodities
- CECOMA: developing some guiding documents in medicine procurement
- Management in selected PEPFAR-focused health facilities: coordination in the SIAPS mentorship of their pharmacy staff

Constraints to Progress

- Insufficient skilled human resources at CECOMA and health facilities
- Poor dispensing conditions in some health facilities and poor storage conditions for pharmaceutical products
- Health facility staff still facing difficulties in independently using pharmaceutical management tools in the absence of SIAPS
- Inadequate internal supportive supervisions to reinforce the use of pharmaceutical management tools

To address these constraints, SIAPS continued to advocate for health facility management to avail more staff, improve storage conditions for HIV and AIDS commodities, and conduct more internal supportive supervision and mentoring.

Objective 3. Information for Pharmaceutical Management Decision Making Improved

Through a data analyst seconded to NMCP, SIAPS continued to provide technical assistance in compiling all provincial reports submitted by malaria provincial supervisors and in making necessary follow-up to ensure regular updates of the NMCP database for case management and logistics data at the national level. Feedback on their reports was also sent out regularly to improve the completeness and quality of the reports. These data were also used in finalizing the distribution plans of PMI-donated commodities in selected provinces. Under coordination with DNME, a national coordination task force was created to improve pharmaceutical management of all antimalarial medicines. In the same quarter, SIAPS facilitated site visits at selected health facilities, with more focus on the proper and regular use of pharmaceutical management tools. Meetings were organized with the Luanda provincial malaria control program, municipal malaria focal points, and selected hospitals which received PMI commodities to ensure that these commodities are properly managed through documentation of all stock transactions up to the patient level.

During the same period, the EUV report was submitted to provide a snapshot of the availability and use of antimalarial products in the five provinces visited. The program completed and submitted one quarterly PPMRm in July 2016, after collecting stock information from national and provincial levels. This stock analysis allowed NMCP and CECOMA to continue monitoring the availability of antimalarial commodities and to timely mobilize necessary resources to address any shortfall in the availability of antimalarial products. SIAPS participated also in a coordination meeting with all public health programs and CECOMA, whereby the meeting recommended that CECOMA provide weekly inventory status of all public health commodities, which CECOMA has been providing since August 2016, thanks to its new warehouse management software.

The program assisted the NRHP in conducting monthly inventories of FP commodities at the CECOMA level and in following up the distributions of these commodities at provincial levels. CECOMA continued to be supported in regularly updating stock cards of these commodities to avoid any discrepancies between physical counts and recorded quantities.

Finally, the program assisted the nine PEPFAR-supported health facilities and the provincial warehouse of Luanda in compiling and submitting their monthly logistics reports for ARV products and other HIV commodities and to do their requisitions.

Partner Contributions

- NMCP and provincial malaria teams: coordinated data collection for malaria case management and monthly stock status
- UNFPA, CECOMA, and NRHP: conducted physical inventory of FP commodities
- NRHP: analyzed provincial monthly reports of FP commodities and their use
- Health facilities: submitting their monthly logistics reports

Constraints to Progress

- Delays in sending monthly reports from the provinces due to unreliable, intermittent internet connectivity and not using collected data in monitoring and/or informing decisions to improve the provinces' daily activities
- Staff shortages, resulting in not using the proper patient registers and stock cards at the health facility level to capture all EUV indicators
- Remote collection of stock status data by telephone or email limits the possibility of validating these data for PPMRm through field visits

SIAPS will continue to advocate for adequate staffing at the national public health program levels and to collaborate and capacitate the available staff to sustain the gains of SIAPS interventions. The mandatory use of pharmaceutical management tools at all levels will also be reinforced by supportive supervision and mentoring inside the health facilities.

Objective 4. Pharmaceutical Service to Achieve Desired Health Outcomes Improved

During the reported period, the program continued to provide technical assistance to selected PEPFAR-supported health facilities in coordination with INLS and the provincial HIV and AIDS control team in Luanda to improve the availability of HIV and AIDS commodities. During the same period, some products had been stocked out while others were at high risk of expiring. SIAPS continued to facilitate exchange of products to mitigate stock-outs in health facilities with high needs and to prevent expiration and wastage due to overstocking of supplies with short remaining shelf-life in others. The program also supported the active distribution of rapid tests kits that were delivered in the same period to remediate the generalized stock-outs of these tests. The program also worked directly with the health facilities and the provincial warehouse of Luanda to prepare their quarterly requisitions and supported distribution of these products to health facilities that were short or did not have the proper means of transport available.

With regard to malaria commodities, the program supported stock-level monitoring and participated in coordination meetings to improve pharmaceutical management of antimalarial products. The program continued to advocate with CECOMA, NMCP, PMI, and the Global Fund for the official establishment of the national quantification technical working group for antimalarial commodities as a mechanism to improve stakeholder coordination and supply planning and avoid duplication of efforts.

Partner Contributions

- INLS, DPS Luanda, and selected health facilities in the active distribution of selected HIV and AIDS commodities to avoid wastage due to imminent expiration
- NMCP in stock monitoring of antimalarial commodities

Constraints to Progress

- Continuous gap between quantities of supplies needed by health facilities and what is actually issued and distributed by the central and provincial levels
- Inadequate human resources in the health facilities to work with SIAPS staff; sometimes the majority of pharmacy has to be done by SIAPS staff because the local staff's competing tasks
- Less involvement of health facility management in the pharmacy area (pharmaceutical management) in some health facilities
- Use of a "push" commodity management system (rather than using a customer-driven "pull" system, based on the real needs of health facilities and provinces)

Bangladesh

Goal: Improved availability of quality pharmaceuticals and effective pharmaceutical services to contribute to desired health outcomes

Overall Quarter Progress

The Procurement and Logistics Management Cell (PLMC) in the Ministry of Health and Family Welfare (MOHFW) has played a vital role in coordinating the procurement and logistics functions within the MOHFW and other key entities. The PLMC presented its overall achievements to the MOHFW and stakeholders this year. During this quarter, SIAPS worked with the PLMC to facilitate the approval process of a table of equipment (TOE) for a 500-bed hospital and a pricing guide.

SIAPS organized a high-level workshop with MOHFW officials to finalize the customized subnational procurement bidding documents. The Secretary of the MOHFW chaired the workshop and acknowledged SIAPS' contribution to streamlining the procurement system in the country.

As part of an effective partnership with USAID implementing partners in the country, SIAPS collaborated with Save the Children's MaMoni Health Systems Strengthening (HSS) Project to facilitate logistics management training and introduce a uniform inventory management system in three districts. As a result, 23 of the 64 districts have started using uniform inventory tools. SIAPS provided support to implement an electronic logistics management information system (eLMIS) for priority maternal, newborn, and child health commodities in five districts. The continued efforts of SIAPS have resulted in a reporting average of more than 80% in the eLMIS. SIAPS also released the beta version of the Directorate General of Health Services (DGHS) eLMIS dashboard into the Supply Chain Management Portal (SCMP) to make it public for evidence-based decision making.

These efforts resulted in 100% timely reporting of contraceptives from 488 Directorate General of Family Planning (DGFP) upazilas. The stock-out rates for contraceptives at the service delivery point (SDP) level decreased from 1.22% in January 2016 to 1.05% in July of that year.

During this quarter, SIAPS facilitated a condemnation process at the subnational level that recovered approximately 13,500 cubic feet of space to be used for efficient warehouse management.

SIAPS organized a five-day workshop with Khulna Shishu Hospital (KSH) staff and senior management and developed a long-term sustainability plan, including a marketing strategy, for KSH. SIAPS has successfully handed over the health information system (HIS) to KSH for real-time patient reporting data to augment clinical decision making.

SIAPS provided basic training to newly recruited national tuberculosis program (NTP) staff to ensure smooth data entry into the electronic tuberculosis patient management system (e-TB Manager). With the NTP, SIAPS prepared the quantification and forecasting for five second-line

TB medicines used for extremely drug-resistant (XDR) patients using QuanTB to place an emergency order to the Global Fund.

After extensive discussion, the advocacy terms of reference (ToR) and structure of the technical working committee (TWC) for asset management systems developed by SIAPS were approved by the MOHFW.

Preparations for the pilot PharmaDex implementation in the country were made by working with Directorate General of Drug Administration (DGDA) and the headquarters team to respond to all queries and clarifications from the software developer. SIAPS also developed a user/applicant request form as part of PharmaDex for DGDA to test with 40 pharmaceutical companies and provided orientation to 19 newly recruited DGDA officials on drug quality and patient safety management interventions.

However, SIAPS has several potential challenges that need to be addressed by the country team and headquarters staff, including:

- The process of extending SIAPS Bangladesh has impacted the implementation of planned activities.
- Implementing PharmaDex has become a major challenging for the DGDA due to changes in technical staff in the headquarters office. SIAPS needs to launch PharmaDex by the beginning of October 2016.
- Changes in MOHFW leadership continue to pose challenges in achieving key policy deliverables and effective collaboration.

Objective 1. Supply Chain Management Systems of the MOHFW and Component Procuring Entities Strengthened

SIAPS and the PLMC have organized an annual conference with MOHFW officials to highlight major SIAPS-supported procurement and supply chain-related activities in different directorates. SIAPS also facilitated a workshop to finalize the subnational procurement guideline.

The MOHFW has approved the TOE for a 500-bed hospital and issued a government order for implementing this as a reference document for procurement. SIAPS worked with the PLMC to review the draft pricing guide and circulate the document for policy-level approval. As a next step, SIAPS will print the document and organize capacity building efforts and dissemination.

The Central Procurement Technical Unit under the Ministry of Planning of Bangladesh is developing, maintaining, and operating the e-Government Procurement (e-GP) System, which complies with the Public Procurement Act (PPA) of 2006 and the Public Procurement Rules (PPR) of 2008 of Bangladesh. With assistance from SIAPS, the DGHS has completed its registration process in the national e-GP system. Beginning in FY 2016–17, all DGHS competitive bidding processes will be conducted through the e-GP system, while SIAPS will provide technical assistance for capacity building and successfully implementing the e-GP system at the DGHS under the MOHFW.

The procurement of diet for patients is an important issue, particularly at local-level hospitals, but procurement has been conducted without consulting the PPR/PPA. To address this issue, SIAPS customized bidding documents for subnational-level procurement that were validated in a workshop headed by the MOHFW Health Secretary on July 19, 2016. First-batch training for MOHFW procurement officials of the DGFP and DGHS is scheduled for September 27–29, 2016. The subnational procurement documents and training will result in a subnational diet procurement system under the MOHFW.

SIAPS facilitated the Logistics Coordination Forum at the DGFP on August 3, 2016, to discuss FY 2015–16 procurement status, procurement plans for FY 2016–17, and DGFP stock status reports.

A key SIAPS intervention in the DGHS is to strengthen the inventory management system. During this quarter, SIAPS rolled out uniform inventory tools (e.g., stock registers, issue vouchers, indent and issue vouchers, and bin cards) through a comprehensive capacity building process in an additional 10 districts. SIAPS collaborated with MaMoni HSS to hold a two-day basic logistics management training for all the health stores to introduce the uniform inventory tools in three MaMoni-supported districts (Noakhali, Habiganj, and Jhalokathi).

SIAPS developed a national condemnation guideline and submitted it to the MOHFW for formal approval. SIAPS field-based technical advisors participated in monthly health coordination meetings at the divisional, district, and subdistrict levels to motivate health managers to conduct condemnation in their health facilities to ensure good warehousing practices. As a result, 13,500 cubic feet of space in subdistrict stores and district and subdistrict hospitals has been recovered.

SIAPS followed up with the respective DGHS field officials in five districts (Faridpur, Khulna, Lakshmipur, Pabna, and Gazipur) to have continued data entry in the system. As a result, significant improvements have been made, and the average reporting rate over the last six months exceeded 80% (Gazipur, 84%; Faridpur, 79%; Lakshmipur, 87%; Khulna, 86%; and Pabna, 91.4%). The SIAPS team also visited Habiganj (Madahpur-Upazila Health Complex (UHC), Community Clinic (CC), and Union Sub-Centre) and Tangail (Basail-UHC, CCs, and Sakhipur UHC) in August to assess the ground practices for batch management and expiry tracking in DHIS2.

SIAPS developed a long-term sustainability plan and marketing strategy for KSH to help the facility obtain Government of Bangladesh and other financial allocations and resources to build its capacity. Toward this end, SIAPS facilitated a five-day workshop with KSH staff, its management committee, and other stakeholders. Among the 32 participants were Mr. Md. Mizanur Rahman, Honorable Member of Parliament and Chairman of KSH; Mr. Md Abdus Samad, Divisional Commissioner, Khulna, and President, Khulna Shishu Foundation; and Nazmul Ahsan, District Commissioner, Khulna. The new business opportunity that emerged was a neonatal intensive care unit, which will allow KSH to provide expert care to those born at risk.

SIAPS conducted a system study and finalized the customization/configuration of an HIS tool to fit into the KSH context. The web-enabled HIS tool has been deployed for lab testing, and real-time implementation is planned. This tool has the potential to improve real-time, patient-reported

data for augmenting clinical decision making. SIAPS handed over the tool, including source codes, a user guide, and installation steps, to KSH during a ceremony at which the Letter of Collaboration was signed.

With SIAPS technical assistance for quantification and forecasting using QuanTB, the NTP placed an emergency order to the Global Fund for five second-line TB medicines used for XDR patients. The emergency situation arose due to a sudden and substantial increase in pre-XDR and XDR patient detection, and the medicine stock was insufficient to meet the patient demand. Several ad hoc meetings were held with Programmatic Management of Drug Resistance TB members to determine new individualized regimens, patient projections, and current enrollments. SIAPS has identified some minor adjustments in the Warehouse Inventory Management System (WIMS), which was introduced in the TB central warehouse at Shymoli. As a next step, SIAPS will hold demonstration and training workshops on WIMS in October 2016.

Partner Contributions

Conference rooms at the district hospitals and civil surgeon offices of 10 implementing districts were used to hold inventory management trainings. DGHS officials from the divisional and district levels attended in the trainings to provide encouragement to participants.

The PLMC provided significant support for the approval of the TOE for a 500-bed hospital.

KSH and SIAPS organized the workshop on a long-term sustainability plan and marketing/business strategy.

Constraints to Progress

The turnover of procurement desk officers, directors, and other senior level officer at the Central Medical Store Depot (CMSD) has made it challenging to process large numbers of packages at the CMSD/DGHS.

There are still some technical issues in terms of exporting data from DHIS2 and some challenges in data entry for the eLMIS.

The NTP has not yet provided appropriate human resources support to facilitate quantification procedures as part of the sustainability of QuanTB.

Objective 2. Systems for Evidence-Based Decision Making Established

SIAPS provided the necessary technical input to prepare and approve the ToR and structure of the TWC for asset management systems for the MOHFW. The Secretary of the MOHFW was present at the inauguration of the asset management system and the first batch training of officials from the MOHFW, CMSD, and Civil Surgeon office in Moulvibazar September 21–22, 2016. SIAPS submitted the micro-implementation plan for the system and has provided weekly updates to all stakeholders, including the MOHFW, the Development Partner consortium, and USAID. SIAPS will work with the TWC to facilitate the MOHFW's completion of the

Disbursement Linked Indicator target (value: USD 10M; timeline: December 2016). As a next step, SIAPS and USAID will visit the pilot implementation site to see the effectiveness of the system in Moulvibazar.

A strategic meeting on the handover of the SCMP was held at the DGHS in June. Prof. Abul Kalam Azad, Additional Director General (Admin) and Director HIS and eHealth, DGHS presided over the meeting. Based on the decisions made, SIAPS submitted the signed server requisition form to the DGHS and started working with the DGHS management information system team to facilitate the smooth transition of the SCMP to the DGHS data center.

SIAPS has released the beta version of the DGHS eLMIS dashboard into the SCMP and plans to make it public by the end of September 2016 for evidence-based decision making. A part of a sustainability plan and for a smooth transition, the SIAPS HIS team prepared a technical guideline and user manual for the tool.

SIAPS worked with the DGFP and NTP to prepare job aids as a reference document for users to easily understand the data entry operations in the DGFP SDP Dashboard Module and e-TBM.

SIAPS has continued to assess the quality of implementing sites' reports and contributed to designing supervision plans at low performing sites for the SDP dashboard module. A follow-up analysis showed that 100% (n=488) of the sites (subdistricts) are maintaining high data quality standards (completeness and accuracy) as of July 2016; of these, 96% (n=467) had uploaded their reports on time, which was an increase of 2% over April 2016 (<https://scmpbd.org/index.php/lmis-report/upazila-f7b-timeliness-completeness>). SIAPS provided technical assistance to roll out the SDP dashboard module in 488 subdistricts, which captured approximately 29,200 data points of SDP stock information. Since the nationwide roll-out of the SDP dashboard module in June 2015, the stock-out rate for contraceptives at the SDP level remained below 2% (data as of July 2016; source: www.scmpbd.org). The DGFP has used the dashboard to keep the stock-out rate as low as possible at the SDP level. A routine follow-up analysis showed that stock-out rates for contraceptives at the SDP level decreased from 1.22% in January 2016 to 1.05% to July 2016, representing a 0.17% decrease.

Constraints to Progress

New TB and leprosy control assistants are using e-TBM without training.

Objective 3. Pharmaceutical Regulatory Systems Strengthened

To effectively deploy PharmaDex and adopt common technical document-based medicine dossier submissions in the DGDA, SIAPS worked with the headquarters team and addressed all clarifications requested by the software developer, such as a marketing authorization letter template; a DGDA address correction; and information on the roles of screeners, reviewers, and moderators. To position PharmaDex, a user/applicant request form was developed for the DGDA. This has been sent to 40 pharmaceutical companies to collect information to build a PharmaDex database comprising of all data required to launch the system. Seventeen companies have submitted the completed form. SIAPS provided a half-day orientation to 19 newly recruited

DGDA officials on drug quality and patient safety management interventions. The official inauguration of PharmaDex will be in early October 2016.

During the last quarter, SIAPS provided technical assistance to Promoting the Quality of Medicine (PQM) to conduct an assessment of the DGDA. The draft technical assessment report, *Gap analysis to determine needs for capacity strengthening of regulatory, quality assurance, and quality controls systems in Bangladesh*, has been submitted to USAID. SIAPS is collaborating with PQM to strengthen the standards and technical capabilities of the National Control Laboratory of Bangladesh, located in Dhaka and Chittagong, to achieve WHO accreditation. This will compliment SIAPS' ongoing technical assistance to the DGDA, particularly in the area of quality testing of pre- and post-approval medicine samples.

With technical assistance from SIAPS, the Adverse Drug Reaction Monitoring (ADRM) cell has made significant progress in strengthening its adverse event reporting system. SIAPS and the ADRM cell organized joint visits to the National Institute of Ophthalmology, National Institute of Cardiovascular Diseases, and National Institute of Orthopedic and Traumatology Rehabilitation to promote pharmacovigilance awareness. Between June and August 2016, more than 150 ADR reports were received by the DGDA from 30 SIAPS-supported hospitals and pharmaceutical companies. On September 5, 2016, SIAPS facilitated a technical session of the subcommittee of the Adverse Drug Reaction Advisory Committee (ADRAC) to analyze the adverse drug event reports. The subcommittee reviewed 67 reports, which will be further validated by the full ADRAC during the next technical meeting in October 2016. Finally, to communicate the progress made in strengthening pharmacovigilance systems and convey medicine safety news, the first pharmacovigilance newsletter is nearing completion.

SIAPS also started working to integrate DGDA portal post-marketing surveillance data into DHIS2 in collaboration with DGHS and the icddr,b.

Constraints to Progress

SIAPS Bangladesh needs to work directly with the developer of PharmaDex to expedite the development process. SIAPS headquarters should help to facilitate the linkage.

Benin

Goal: Ensure the availability of quality products and effective pharmaceutical service delivery for better health outcomes

Overall Quarter Progress

SIAPS worked closely with the Ministry of Health's (MoH) Department of Pharmacy, Medicines, and Laboratory (DPMED) to prepare and agreed on term of references for a situational analysis of the regulatory information management system and processes of the DPMED and to develop appropriate recommendations and an action plan based on the findings. This situational analysis will allow the DPMED to develop a comprehensive action plan for implementing a robust regulatory information management system, including the required information technology solution to manage the registration of pharmaceutical products and the licensing of medicine establishments.

Objective 1. Enhance the Capacity of Benin's MoH for Effective Pharmaceutical System Management

In August 2016, the SIAPS regional project director for West Africa received a request from USAID/Benin to support the MoH's DPMED to implement an electronic tool to strengthen the registration system of medicines and health products. Although digitization can improve the regulatory information management process, its effectiveness depends on the existence of efficient medicine registration procedures and a system that complies with regional and international standards.

The primary role of DPMED is to develop and implement the national pharmaceutical policy. The main objectives of this policy are to ensure availability of and access to quality medicines. To achieve this mandate, the DPMED aims to enhance its regulatory capacity and strengthen its capability in terms of licensing medicine establishments and the registration and safety of pharmaceutical products.

In response to the Mission request, SIAPS proposed the immediate step of conducting a situational analysis of the regulatory information management system and processes of the DPMED and developing appropriate recommendations and an action plan based on the findings. SIAPS worked closely with DPMED to develop the scope of work and timeline to conduct this assessment.

This new assignment led SIAPS to review its Project Year 5 work plan, suppress two activities related to strengthening DPMED's pharmacovigilance system, and assist DPMED to conduct supervision of logistics functions at lower levels.

Benin Ebola Portfolio

Goal: To ensure the availability, accessibility, and rational use of effective, safe, and high-quality Ebola-related medicines and equipment at affordable prices by strengthening the national pharmaceutical management system

Overall Quarter Progress

The SIAPS Program provided technical assistance to the Ministry of Health's (MoH) commission to respond to the Ebola outbreak through the Pharmacy and Medicines Department (DPMED) by conducting joint visits with the Advancing Newborn, Child and Reproductive Health (ANCRE) Program to inventory Ebola-related products in warehouses and health facilities. This physical inventory exercise was coupled with building the capacity of stock managers for Ebola commodity management and related information management systems.

SIAPS attended a meeting of USAID partners working on the Ebola response to discuss key activities accomplished during the month, key areas of interventions within country, and activities planned for subsequent months.

Objective 1. Enhance the Capacity of Benin's MoH for Effective Pharmaceutical System Management

In close collaboration with the USAID-funded ANCRE Program, SIAPS conducted a joint visit to assess the implementation of the Ebola response, including the availability and management of Ebola products in the field. During this visit, SIAPS and ANCRE also provided support to the health facilities to improve the completeness and quality of the health management information system (HMIS) and logistics management information system (LMIS) data collected from health facilities through a capacity building exercise.

Prior to this field visit, SIAPS and ANCRE agreed on a questionnaire that included a list of Ebola-related products to be included as part of the physical inventory assessed. This physical inventory was recommended by the national quantification committee during the April 2016 quantification exercise as an immediate next step required to assess the stock status of Ebola products in different warehouses and health facility storage areas across all levels of the national supply chain prior to the procurement of new items to avoid overstock and expiry.

The field visits took place July 10–16, 2016, in 10 health zones from four health districts. In total, 27 participants involved with managing Ebola products were interviewed. SIAPS and ANCRE issued recommendations to strengthen Ebola product management and HMIS and LMIS data collection and transmission from health facilities to the central level.

SIAPS continued discussions with ANCRE about details on joint activities to strengthen the LMIS for Ebola products following the July 2016 joint supervision. As agreed, SIAPS will provide technical assistance to develop tools, standard operating procedures, and training materials related to the LMIS, while ANCRE will focus more on funding training workshops.

SIAPS attended a meeting of USAID partners working on the Ebola response to discuss key activities accomplished during the month, key areas of intervention within the country, and future activities. This meeting was chaired by the Ebola focal person at USAID. SIAPS briefed participants on supervision conducted to build the capacity of health workers involved in Ebola product management, including reorganizing storage at the Hopital de Papane to optimize space and improve the safe and secure handling of products. SIAPS interventions are nationwide, unlike other USAID-funded partner projects that focus on limited geographic areas.

To benefit from this national scope, USAID requested that its partners work closely with SIAPS for any supply chain-related technical assistance throughout Benin.

A list of Ebola products has been developed by the MoH's DPMED with technical assistance from SIAPS, and USAID has advised all partners to follow this list for any procurement.

Burundi

Goal: Contribute to a 75% reduction in malaria-related morbidity and mortality in Burundi by 2017

Overall Quarter Progress

The SIAPS and SCMS projects held an official closing ceremony on September 22, 2016. The event attracted 95 attendees from the Ministry of Foreign Affairs and International Cooperation; Ministry of Health (MoH) departments (Health Inspection Department; Department of Pharmacy, Medicines, and Laboratories (DPML); National AIDS/Sexually Transmitted Infections Control Program; Central Medical Stores (CAMEBU); National Malaria Control Program (PNILP); Department of Health Programs and Projects; Permanent Executive Secretariat of the National AIDS Control Council; Department of Demand and Supply of Services (DODS); Department of Health Services and Fight Against AIDS; National Public Health Institute; Department of Health, Hygiene, and Sanitation Promotion; National Tuberculosis and Leprosy Control Program; and the National Immunisation Program); USAID implementing partners (Measure Evaluation, FHI360, Pathfinder International, PATH/MalariaCare, and Population Services International); other nongovernmental organizations (National Association for Support to Persons Living with HIV/AIDS, CARITAS Burundi, Concern Worldwide, and World Relief); United Nations agencies (Joint United Nations Programme on HIV/AIDS, United Nations Children’s Fund, and United Nations Population Fund); the media; and selected health provinces, districts, health centers, and community health workers (CHWs) who are implementing case management of childhood diseases.

With support from SIAPS, the PNILP, DPML, DODS, and CAMEBU presented their achievements and lessons learned over the past five years in supply chain, malaria services, the scale-up of integrated community case management (iCCM), and the introduction of the intermittent preventive treatment of malaria in pregnancy, as well as recommendations for the future. SIAPS, in collaboration with SCMS, organized display booths where participants had an opportunity to see key documents on malaria services and supply chain strengthening, which were developed with SIAPS technical assistance and endorsed by the MoH, as well as posters of key results from five years of implementation in Burundi. The ceremony was jointly hosted by the Inspector General of Health and the USAID Mission Director.

During this quarter, SIAPS assisted the PNILP in organizing the Roll Back Malaria (RBM) quarterly coordination meeting to evaluate the progress made from April to June and to plan malaria activities during the next quarter (July–September). This is a best practice established to better coordinate partners’ activities and efficiently manage available resources. Evidence and data are shared and discussed to guide adjustments in planning and coordination.

SIAPS assisted the PNILP to coordinate the delivery and reception of 1,669,450 artemisinin-based combination therapy (ACT) treatments. Currently, all planned President’s Malaria Initiative (PMI) shipments for FY16 have been received in the country. SIAPS worked with the PNILP and CAMEBU to distribute malaria commodities to the 46 health districts as per requisitions and quantities calculated based on accurate consumption data and stock on hand at

the district level.

SIAPS assisted the PNILP and the subcommittee responsible for malaria commodity security in analyzing the available stock at CAMEBU, reviewing planned orders from PMI and the Global Fund, and updating supply plans. This stock status analysis estimated gaps of 3,179,248 ACT treatments and 10,363,525 rapid diagnostic tests (RDTs) for 2016–2017 that resulted from the continued upsurge of malaria cases. The PNILP mobilized financial resources from PMI and the Global Fund. Funds were secured, and related orders are being placed.

To strengthen malaria services, SIAPS assisted the PNILP and DODS to introduce iCCM in two additional health districts: Mutaho and Giteranyi. In August, SIAPS completed the training, practical internship, and distribution of kits to 58 CHWs in Mutaho in collaboration with CARITAS Burundi, which is the Global Fund Principal Recipient. In Giteranyi, SIAPS collaborated with the IHP-B project to identify 118 CHWs who will be trained to diagnose and treat malaria, diarrhea, and pneumonia, as well as detect acute malnutrition in children between 2 and 59 months of age. These CHWs will be trained and equipped in October 2016 and will start activities in November. This will make a total of five health districts in which SIAPS has scaled-up iCCM during FY16.

Objective 1. Leadership and Governance for Key Institutions (PNILP, DPML, CAMEBU, and districts) Improved

SIAPS assisted the PNILP to conduct the RBM forum quarterly coordination meeting in August 2016. The meeting aimed to evaluate the progress and planning priorities in the fight against malaria in Burundi. During this meeting, partners discussed the start-up of PNILP's role as principal recipient for 2016–2017 and its responsibility for managing Global Fund funding.

Objective 2. An Uninterrupted Supply Chain Mechanism for Malaria Commodities is in Place

SIAPS assisted the PNILP to coordinate the delivery and reception of malaria commodities purchased by PMI. USAID/PMI delivered 690,300 treatments to Burundi for infants and children (1 to 5 years of age) and 979,150 treatments for newborns (2 to 11 months). These were the last shipments of the PMI emergency orders to fill the gap caused by the upsurge of malaria cases that Burundi encountered since November 2015.

SIAPS assisted the PNILP and the quantification subcommittee for malaria commodities in analyzing stock at CAMEBU and pending orders for the Global Fund and PMI and updating supply plans. The upsurge of malaria cases continued and resulted in increasing consumption of ACTs. The quantification subcommittee estimated gaps of 3,179,248 ACT treatments and 10,363,525 RDTs for 2016–2017 and presented the quantified gaps to PMI and the Global Fund to mobilize funding. Orders are currently being placed.

SIAPS continued to assist the PNILP and CAMEBU in the routine analysis of monthly requisition and logistics management information system reports to adequately distribute malaria commodities to the 46 health districts.

Objective 3. Pharmaceutical Services are Improved to Ensure Best Practices in Malaria Case Management

In collaboration with the new Global Fund Principal Recipient, CARITAS Burundi, SIAPS trained and equipped 58 CHWs in the Mutaho health district to scale up iCCM. To complete the five districts planned for this fiscal year, SIAPS collaborated with the DODS; IHP-B; PNILP; and Department of Health, Hygiene, and Sanitation Promotion to organize the enrollment of CHWs in one additional district, Giteranyi in Muyinga, to introduce iCCM. In total, 118 CHWs have been selected based on criteria defined in the iCCM guidelines and will be trained in October 2016.

Partner Contributions

- CARITAS Burundi supported training and covered internship costs for CHWs in Mutaho using Global Fund resources.

Democratic Republic of the Congo

Goal: Ensure the availability of quality pharmaceutical products and effective pharmaceutical services to achieve desired health outcomes

Overall Quarter Progress

During this quarter, SIAPS worked with the National Pharmacovigilance Center (CNPV) and provided technical and financial support to the Provincial Health Divisions (DPSs) to launch and disseminate standard treatment guidelines (STGs) to be piloted in referral hospitals having an established and effective Drug and Therapeutics Committee (DTC) in health zones receiving USAID support. The STG meetings were held across the DPSs and included members of the provincial management team and all stakeholders. Given the interest generated by this important tool, health authorities in the 13 USAID-supported provinces expressed their desire to see the STGs distributed to all health facilities in their provinces. A total of 800 copies of the STGs have been distributed in 80 health zones. In addition, the STG training facilitators and members of the CNPV conducted a DTC evaluation and training on rational medicine use and appropriate case management.

SIAPS DRC continued supporting the Faculty of Pharmaceutical Sciences (FOPS) of the University of Kinshasa to complete the FOPS curriculum revision. In previous quarters, significant milestones were achieved. A three-member team from FOPS and two SIAPS staff members participated in a highly technical consultation meeting in Chicago April 4–14, 2016, where three key deliverables produced by the DRC team were analyzed and updated. Participants agreed on a way forward, and directives were given to the DRC team to tackle the last step of the curriculum revision.

Objective 1. Pharmaceutical Sector Governance Strengthened

During this quarter, SIAPS continued supporting the Directorate of Pharmacy and Medicines (DPM) to strengthen DRC's medicine registration process. In April 2016, SIAPS supported the DPM to hold a quarterly registration session, during which 165 medicines were analyzed. Of those, 120 (72.7%) were registered and authorized, while 45 did not have sufficient information to complete registration and were deferred to the next session. This brings the total number of registered medicines in DRC to 4,606, up from approximately 400 when SIAPS began in 2011. To enable the DPM to appropriately conduct registration activities beyond SIAPS, SIAPS has planned a session to hand over certain activities to the Global Fund beginning in October 2016. SIAPS supported the National Malaria Control Program (NMCP) and held a joint session with partners working in the fight against malaria July 4–15, 2016. During this session, malaria control norms and guidelines in DRC were updated. The SIAPS intervention mainly focused on the supply and stock management of anti-malaria commodities.

SIAPS further contributed to the updating of technical sheets of anti-malaria medicine quantification by adjusting certain assumptions and taking into account artemether/lumefantrine, among other medicines. A trainers' guide was developed.

During this quarter, SIAPS provided technical support to the DPS across the 13 USAID-supported provinces in organizing and holding meetings to coordinate support from various partners in the pharmaceutical sector. During these meetings, specific challenges in each province were addressed.

A discussion and orientation for decision making on the issue of anti-malaria commodities that were overstocked and at risk of expiry in Tanganyika was critical. Discussions included the rationalization of HIV/AIDS activities and shifting patients from zidovudine/lamivudine/nevirapine 300/150/200 mg to tenofovir/lamivudine/efavirenz 300/300/600 mg in Haut-Katanga; the submission of the draft mapping of all partners intervening in the supply of medicines in South Kivu (the mapping showed 95 supply circuits in this province); the submission of the end use verification (EUV) findings from March 2016 in Kasai-Oriental and Haut-Lomami; and the harmonization of management tools (reporting templates and the list of tracer medicines per level) in Kasai-Central.

Partner Contributions

NMCP, SANRU/Global Fund, IHPplus, Malaria Care, Measure Evaluation, Swiss Tropical and Public Health, Centre National de Pharmacovigilance, University of Kinshasa

Objective 2. Capacity for Pharmaceutical Supply Management and Services Increased and Enhanced

SIAPS DRC continued supporting the FOPS of the University of Kinshasa to complete the FOPS curriculum review process.

During this quarter, SIAPS supported FOPS to hold two curriculum revision sessions, during which the curriculum mapping was conducted based on directives received during the consultation meetings. Through this process, course modules for the 10 competencies for pharmacists (as described in the competency framework) were identified, and credits were allocated for each set of coursework. In addition, a coursework description fact sheet template was developed and distributed to all FOPS departments and services to provide specifications for each set of coursework and related modules, including general information (i.e., course title, number of credits/hours, teaching language, period/semester); course prerequisites and links to other coursework; course descriptions; course objectives; course content; teaching methodology; evaluation method; and references. During the next session, different departments and services will present their completed course description fact sheets to the Curriculum Committee for validation and adoption, which will conclude the FOPS curricular revision process.

Following previous alerts of the risk of expiry of 735,773 doses of artesunate/amodiaquine (ASAQ) in January 2017 in Kasai Oriental and Tanganyika, SIAPS collaborated with IHPplus, PSI, and SANRU to develop a solution to avoid the wastage of this consignment. SIAPS created a redistribution plan that was approved by the USAID mission, NMCP, and all President's Malaria Initiative (PMI) stakeholders. The redistribution plan is currently under implementation with funding from IHPplus and PSI. This will result in saving of more than USD 500,000, and the ASAQ stock will contribute to save lives in provinces not supported by PMI.

During this quarter, SIAPS provided technical support to the National Tuberculosis Program (PNLT) in preparing for and conducting joint supervision visits with the Global Drug Facility, Global Fund, and World Health Organization August 21–31, 2016. The visits aimed to:

- Analyze the supply chain of tuberculosis (TB) medicines in DRC to identify all bottlenecks in the importation process as well as red tape and documentation issues
- Define an action plan in cooperation with all supply chain stakeholders to facilitate the smooth flow of information and physical stocks of TB medicines
- Meet with the drug regulatory authority to address issues related to the importation and registration of TB medicines in DRC (old and new TB medicines) to optimize the process
- Support the introduction of new pediatric formulations and the development of a transition plan that takes into account the needs of DRC, the country's distribution cycles, and the pediatric formulation stock currently available
- Quantify the needs of first- and second-line pediatric medicines in collaboration with PNLT, CARITAS, and UNION, taking into account the short treatment/long treatment ratio for 2016–2017

Partner Contributions

NMCP, PNAM, PNLS, NMCP, health zone team managers, NTP

Objective 3. Utilization of Information for Decision Making Increased

Because of the funding situation of SIAPS DRC, the EUV previously planned for July was delayed to September.

With IHPplus financial support, SIAPS and the NMCP conducted an EUV survey September 13–23 in 186 health facilities and 34 warehouses in PMI-supported provinces. The Global Fund agreed to extend the EUV survey in the health zones under its support. For this reason, EUV data collection will continue in an additional 201 health facilities in Global Fund-supported provinces. This is a good example of partner collaboration and showcases the EUV as a national exercise. Based on the SIAPS transition plan and NMCP expectations, SIAPS encouraged SANRU, the Global Fund's main implementing partner in DRC, to participate in this EUV to make it national. A national sample of 369 health facilities in all 26 provinces was selected. The findings of the EUV will be available in the next report and could be scaled up nationwide. With regard to reproductive health, SIAPS supported the Ministry of Health to hold a contraceptive monitoring and procurement meeting in July 2016. The quarterly report on the use of family planning commodities across all provinces indicated that across USAID-supported zones, cycle beads; female condoms; male condoms (Prudence); intrauterine devices (IUDs); implants (implanon NXT); and emergency contraceptives were understocked. However, the No Logo male condom was overstocked. The expiry dates of these male condoms (2019 and 2020) are acceptable.

Actions undertaken included:

- It was estimated that 164,430 cycle beads are needed to meet family planning needs

- A request was made to the Coordinated Assistance for Reproductive Health supplies (CARhs) to fast track an order of 1,280,000 female condoms, which will add 11 months of consumption to the stock
- A request was made to CARhs to fast track the delivery of 5,001,000 male condoms (Prudence)
- A request was made to CARhs to fast track the dispatch of 10,200 IUDs mentioned in the RHI interchange
- Confirmation of an order of 50,000 implants in July 2016; 100,000 implants were received on September 2, 2016
- A consignment of 20,016 applications of implanon NXT was expected to arrive on September 20, 2016
- Formulation of a recommendation made to CARhs to follow up on the dispatch of emergency contraceptive transport documents

Partner Contributions

IHPplus, PMI-Expansion (PSI and CARITAS), Clinton Health Access Initiative, SF/PSI

Constraints to Progress

Logistical issues and poor documentation in health facilities have made EUV data collection and decision making based on the contraceptives consumption database challenging. To address the issue, the following strategies were developed during the meeting:

- Emphasizing the instruction from the DPNSR to Reproductive Health Provincial Coordination bodies across the DPS regarding the transmission of consumption data
- Actively collecting consumption data in the province of Kinshasa
- Advocating with partners to support the personnel in charge of managing reproductive commodities data
- Using mobile telephones in certain targeted health zones to audit the transmitted data

Objective 4. Financing Strategies and Mechanisms Strengthened to Improve Access to Medicines

During this quarter, SIAPS provided support to the Working Group on Medicines Management from the province of Sankuru to monitor the payment of funds for medicine stock renewal based on resolutions taken during previous meetings.

The payment rate increased from 21% in the last quarter of 2015 to 26% in the second quarter of 2016. Because this rate remains low, the DPS has envisaged increasing the number of audit missions to the health zone to boost payment collections.

The same exercise will be conducted across all coordinating bodies during the next quarter.

Objective 5. Pharmaceutical Services to Achieve Desired Health Outcomes Improved

During this quarter, active pharmacovigilance of medicines used against multidrug-resistant TB continued. SIAPS provided technical and financial assistance to the NTP to collect data on adverse medicine reactions.

The scientific report on the exercise will be available in the next quarter.

SIAPS provided technical and financial support to the Ministry of Health to evaluate the use of chlorhexidine digluconate 7.1% for umbilical care. The first phase of the evaluation targeted 29 health facilities in eight health zones: Manika, Dilala, Lualaba, and Kanzenze in the province of Lualaba; Mpokolo and Bibanga in the province of Kasai-Oriental; and Idanda and Miti Murhesa in the province of South-Kivu.

The second phase of the evaluation, which is being conducted by head nurses and community health workers, will continue throughout November, after which the third and last phase of the evaluation will occur.

Partner Contributions

- The University of Kinshasa School of Public Health (ESP) Drug and Therapeutic Committee members
- Technical support was provided by the CNPV to popularize and launch the therapeutic guide

Constraints to Progress

- Insufficient copies of the guide to meet the needs of the DPS
- Financing for the CPT road map
- High staff turnover in some general referral hospitals
- Delay in the transmission of certain orders for anti-malarial commodities in warehouses
- Incentives for head nurses and community health workers for the second phase of the evaluation on the use of chlorhexidine digluconate 7.1%

Dominican Republic

Goal: Increase the availability of critical medicines and diagnostic materials, including those used for HIV/AIDS and tuberculosis, by implementing elements of the Sistema Único de Gestión de Medicamentos e Insumos (SUGEMI) and building the capacity of national counterparts to effectively and efficiently operate the integrated system.

Overall Quarter Progress

The SUGEMI pharmaceutical management system continued to operate as expected during this quarter, and the majority of health facilities reported their data and received feedback. Adult antiretroviral (ARV) availability in health facilities remained high (93%), as did the availability of essential medicines used at the primary health level (92%). SIAPS held a transition ceremony for the technical assistance it had provided over the last five years.

Objective 1. Pharmaceutical Sector Governance Strengthened

The decentralized estimation of needs exercise and programming for procurement in 2017 was conducted in June 2016 and submitted to health authorities in July. The reports and presentations included a financial gap analysis to be used for the mobilization of additional resources.

SIAPS developed guidelines for the quantification and programming of medicines and supplies that include links to all electronic applications for data entry and analysis. These guidelines will facilitate future programming exercises without the need for external technical assistance.

Objective 2. Capacity for Pharmaceutical Supply Management and Services Increased and Enhanced

The first module of the second certified course (diploma) on rational medicine use was facilitated by SIAPS consultants on August 27. Thirty-two students began the course, 20 of whom were sponsored by USAID. Revised and updated versions of the educational modules are available on the SUGEMI “tool box kit”/ National Health Service website.

SIAPS developed visual aids (“prescripción grafica posters”) to promote the rational prescription of ARVs based on national therapeutic guidelines. These materials were presented and validated with a group of prescribers in August 2016.

The Diagnostic and Therapeutic Guidelines and the Pharmaceutical Formulary, both of which are for the primary health level, were launched in August 2016. The Vice President of the Dominican Republic delivered the opening remarks. SIAPS supported the development of these documents.

Partner Contributions

The certified course on rational medicine use was implemented in partnership with the Universidad Central del Este.

Objective 3. Pharmaceutical Management Information Available and Used for Decision Making at Different Levels of the Health System

During the previous quarter, SIAPS finalized three standard operating procedures (SOPs) for PROMESE/CAL (programming, procurement, and distribution). In August 2016, SIAPS facilitated a workshop for the development of an implementation plan. During the next quarter, PROMESE/CAL will publish these SOPs.

Early this year, PROMESE/CAL and the National Health Service signed a service contract, including a requisition and dispatch report, that PROMESE/CAL must submit monthly with information on the correspondence between requisitions made by health facilities (the client) and dispatches by PROMESE/CAL.

Partner Contributions

The workshop for the development of the SOP implementation plan was co-funded by PROMESE/CAL.

Constraints to Progress

The dissemination of the first PROMESE/CAL report to the National Health Service was rescheduled for the next quarter due to delays in the entry of information in the database.

Objective 4. Improved Allocation of Resources for Procurement and Pharmaceutical Management-related Operations

During this quarter, SIAPS presented national health authorities with the results of the quantification and programming for the 2017 procurement of medicines and supplies and an estimation of the financial gap to cover all the needs. The gap analysis estimates that USD \$4.6 million will be needed for the procurement of ARVs and HIV diagnostic supplies for 2017 if the allocated budget is the same as that of 2016.

Objective 5. Pharmaceutical Services Improved to Achieve Desired Health Outcomes

During this quarter, SIAPS supported meetings with Disease Control Programs (DCPs) and Regional Health Service (RHS) directors to agree on a plan for integrating medicines and supplies managed by vertical DCPs into SUGEMI.

SIAPS continued supporting the integration of laboratory reagents and materials to SUGEMI. By the end of this quarter, 21% (8/38) laboratories were making their requisitions, along with the rest of their medicines and supplies, using SUGEMI forms.

During this quarter, ARVs were transferred from a rented warehouse to RHS El Valle (SRS 6) and Valdesia (SRS 1). During the next quarter, ARVs will be transferred from central

warehouses to RHS Metropolitano (SRS 0), Cibao Norte (SRS 2), Este (SRS 5), and Enriquillo (SRS 4).

USAID and SIAPS organized a transition ceremony to present the achievements of SIAPS in the organization of a national pharmaceutical system and discuss the challenges that Dominican Republic still faces in strengthening the system.

Ethiopia

Goal: Strengthen the pharmaceutical system to ensure access to quality pharmacy services that will lead to improved health

Overall Quarter Progress

During this quarter, SIAPS conducted a national assessment of the Auditable Pharmaceutical Transactions and Services (APTS) in collaboration with the Federal Ministry of Health (FMOH) and the Ethiopian Pharmaceutical Association (EPA). The objective of this assessment was to generate evidence on the outcomes of APTS implementation at health facilities, factors contributing to its success, and possible challenges for scaling up and sustaining the program. A draft report of the assessment was submitted, and the findings indicate significant improvements in several indicators, including patient satisfaction of services, availability of medicines, revenues from medicine sales, reduction of wastage, and utilization of the medicines budget.

During this quarter, SIAPS supported the Drug and Therapeutics Committee (DTC) of Hiwot Fana Hospital in the Harari Region to conduct a medicine use evaluation based on the findings of previous prescription reviews. The DTC evaluated the use of crystalline penicillin and its appropriateness in pediatric wards. A team was organized from members of the DTC and clinical pharmacists and was led by the medical director. A total 114 hospitalized pediatric patient charts were cross-checked with dispensed prescriptions that included crystalline penicillin, and only 54 (47.4%) charts were found to include crystalline penicillin. Therefore, the medicine use evaluation was conducted on those 54 charts. Of the charts reviewed, 29 (53.7%) were males and 25 (46.3%) were females. In all cases, the process indicators (the indication to use, dose and frequency of administration, contraindications, and drug interactions) were recorded according to the national standard treatment guideline of Ethiopia for General Hospitals and World Health Organization guidelines for the management of common illnesses in children in areas with limited resources. Nevertheless, most indicators were below the threshold except for dosage frequency (53, 98.1%) and dose (51, 94.4%). The findings for indication (44, 81.5%) and duration of therapy (28, 51.9%) were far below the threshold. Of the 44 patients with the correct indication, severe pneumonia (33, 75%) and community-acquired pneumonia (5, 11.4%) were the leading causes for the administration of crystalline penicillin. Crystalline penicillin was co-administered with different antibiotics and bronchodilators for 40 (74.1%) and 18 (33.3%) patients, respectively. The findings on outcome indicators were also low when compared with the threshold. Clinical improvement was noted for 28 (51.9%) patients, patient death or discharged was recorded in 9 (16.7%) cases, and status was not specified in 17 (31.48%) patient records.

During this quarter, APTS was launched at 10 hospitals in the Oromia Region after two years of advocacy with technical and material support from USAID/SIAPS and funding from USAID/President's Malaria Initiative (PMI). In addition, four health facilities (Suhul Hospital in the Tigray Region, St. Paul Hospital in Addis Ababa, and Bona and Chenchu Hospitals in the SNNP Region) started implementing APTS, bringing the total number of APTS implementing hospitals to 67. The baseline assessment conducted at Suhul Hospital before implementing APTS

indicated that patient knowledge on correct dosage was 44%, and the overall patient satisfaction at the hospital was 71%.

SIAPS support to health facilities on medicine use education has continued. During this quarter, nine health facilities in the Oromia, Dire Dawa, and Amhara Regions have conducted different sessions of medicine use education, which benefited 1,694 people (53% female). A total of 24 topics were covered in the patient education sessions, including reproductive, maternal, newborn, and child health (RMNCH); antimicrobial resistance (AMR); medicine safety on multiple medicine administration; chronic care; diabetics medication use; the effective use of antiretroviral therapy (ART); and medicine storage at home.

During this quarter, data on stock status of antimalarial commodities was collected from 61 health facilities (20 hospitals, 41 health centers) in five regions. The compiled reports were shared with the respective regional health bureaus, zonal health departments, and Pharmaceutical Fund and Supply Agency (PFSA) hubs for follow up and appropriate action. Using the stock status reports, excess/near expiry antimalarial drugs (AMDs) were transferred among facilities. For example, 90 artemisinin-based combination therapy strips and 2,000 chloroquine tablets were transferred to Bati Health Center from Melka Logo, Fallana, and Ela Health Centers.

Objective 1. Pharmaceutical Sector Governance Strengthened

The FMOH and SIAPS provided viable and necessary support to the Somali Regional Health Bureau to enact APTS regulation. This brings the total of APTS regulations to 11 (10 regions and 1 federal). The only region that has not yet enacted APTS regulations is Harari.

The review/update of the “Drugs Management Handbook for Health Extension Workers” to include RMNCH and other medicines used at the health-post level is in progress. This activity is being done in collaboration with the FMOH. The consultant team, which comprises of three professionals, has undertaken the review and submitted the final draft, which will be presented in a final review workshop. After the final review, the consultants will edit the draft based on the recommendations and hand over the final document in English and Amharic for printing.

SIAPS provided technical support for the already-established DTCs of Lumame, Debremarkos, and Dejen Health Centers in the Amhara Region to become functional. Assistance was provided to develop terms of reference for the DTCs, develop a plan of action, conduct regular meetings, developed a medicines list and standard prescriptions, strengthen ADR reporting, actively follow up on drug supply management and pharmacy service, and promote accountability in managing pharmaceuticals at health facilities.

SIAPS, in collaboration with the Addis Ababa regional health bureau (RHB) and the PFSA Addis Ababa hub, provided DTC training for health center staff. Participants included medical directors and pharmacy heads of health centers from eight subcities in the region. A total of 79 participants (49 males and 30 females) from 43 health centers attended the training. After the training, participants developed an action plan to establish/strengthen the DTC at their respective health centers. The objective of the DTC training was to use different strategies to build the capacity of health center DTC members and health professionals to improve medicine supply

management and rational medicine use. The cost of the training was covered by the Addis Ababa RHB.

Partner Contributions

The Addis Ababa RHB covered all financial expenses to conduct APTS and DTC trainings for health facility staff.

Objective 2. Pharmacy Services at Facility Level Improved

During this quarter, 21 training events were organized on APTS (9); standard operating procedures for pharmacy ART information management - manual (6) and electronic (EDT) (1); DTC (2); and ART (3). These events were attended by 839 professionals, 370 of whom were female.

SIAPS provided technical support to nine hospitals in the Amhara and Benishangul Gumuz Regions to document and report clinical pharmacy service and activities on a monthly basis. With the support provided during the quarter, hospitals were able to serve 1,593 patients, of whom 669 (42%) had their medication profile form documented. Within the reporting period, 411 medicine therapy problems were identified, and of those, pharmacists intervened in 365 (88.8%) medicine therapy-related problems.

To create awareness of pharmacovigilance (PV) among health providers, face-to-face discussions were held at 12 health facilities in four regions. Discussion events were attended by 176 health providers. PV tools and documents, including 220 adverse drug event (ADE) report forms, 225 newsletters, 250 allergy cards, and 50 ADE guidelines, were distributed to regions. To support the national PV center, 32 ADE reports were entered in the pharmacovigilance data management system.

During the fourth quarter, a consultative workshop was organized to review the RMNCH Medicines Formulary and Emergency Contraceptives Job Aid and IEC materials. This event was organized by the Food, Medicine, and Healthcare Administration and Control Authority of Ethiopia in collaboration with USAID/SIAPS. At this stage, the draft RMNCH formulary is awaiting final review by the national drug advisory committee.

An “Anti-microbial Resistance Surveillance Network Stakeholders Meeting” was organized by the Ethiopian Public Health Institute (EPHI) in collaboration with the Centers for Disease Control and Prevention (CDC) and the American Society for Microbiology. SIAPS was represented by one of its senior technical staff and has been working with EPHI to collect, compile, analyze, interpret, and use culture and sensitivity data for decision making.

Health facility level mentoring was conducted at 10 hospitals in the Oromia Region targeted for APTS implementation during the first phase. The hospitals have been mentored during the quarter to implement APTS. After completion of the ongoing onsite training, all 10 hospitals began APTS implementation.

During the reporting period, SIAPS provided financial support to conduct joint supportive supervision (JSS) at selected hospitals and health centers in the Addis Ababa Region. The JSS was organized by the Addis Ababa RHB in collaboration with partners in the pharmaceutical sector. An integrated checklist was prepared to assess the implementation status of pharmacy services and logistics systems at the subcity and health facility levels. Five groups, which comprised staff from the RHB, subcities, health facilities, and partners in the pharmaceutical sector, were assigned to conduct the JSS at six hospitals and 44 health centers.

SIAPS/PMI participated in the National Malaria Commodities Quantification workshop organized by PFSA in collaboration with the Clinton Health Access Initiative and USAID/DELIVER Project and with technical assistance from USAID/SIAPS. The objective of the workshop was to forecast and plan for procurement requirements of malarial commodities for 2017–2019. The malaria commodities demand was forecasted for three years by taking into consideration various assumptions and data from different sources. One of the data sources used during the forecasting was the SIAPS-E continuous results monitoring system (CRMS) report. The CRMS data utilized for the forecasting included malaria cases treated by age group during different reporting periods in 2015.

Partner Contributions

ART training was funded in part by the CDC.

Constraints to Progress

- Human resource shortages and commitment and internet unavailability in most health centers limited the ability to share reports in a timely manner.
- Some health facilities are working hard to improve their services, but not all are working at the same pace or have the same level of awareness. Formats have been supplied and supported has been provided on how to document and communicate results to stakeholders.

Objective 3. Capacity to Use Information for Decision Making Strengthened

The Ethiopian ART program has been supported by SIAPS by continually collecting, compiling, and sharing information for decision making. The pharmaceutical management information system (PMIS) has manual and EDT versions. EDT is operational in approximately 210 ART sites, while more than 800 facilities use the manual system. To effectively use the tools for identification, prevention, and management of treatment errors to ART patients, it was necessary to provide training to relevant government stakeholders, such as RHBs, ZHDs and the PFSA, so that the system continues to serve its intended purpose. Moreover, apart from capacity building efforts, these trainings are believed to contribute to the eventual ownership of the PMIS at the RHB level. To accomplish this, training was organized for 27 (19 male and 8 female) pharmacy and IT professionals from the Tigray Region. The training created a favorable environment to discuss the basics of the tools and how they can be used to facilitate dispensing activities, help prevent medication errors, and monitor patients' adherence to medications.

During the fourth quarter, one patient uptake and regimen breakdown report was produced and shared. Patient uptake data were collected from 681 health facilities, while regimen breakdown data were obtained from 380 health facilities. According to the recent patient uptake report, 364,450 patients were on ART, of whom 319,273 were covered in the regimen breakdown report (87.6% of those covered in the patient uptake report).

Technical support for identifying and managing treatment errors was provided to ART patients. During this quarter, nine health facilities, (four in Amhara, three in Dire Dawa, and two in Harari) identified and managed 116 treatment errors. All medication errors were related to inadvertent changes in regimen and were corrected in consultation with the prescribers.

To ensure continuous recording at the health facilities and to generate reports for decision making, one health center in the Oromia Region and one in Tigray were supplied with computers, and EDT was installed to implement real-time dispensing. In addition, 27 health facilities received supportive supervision for hardware and software maintenance.

During this quarter, 206 (134 male and 72 female) participants drawn from different regions were trained on the manual SOP. These pharmacy professionals were trained on the SOP for Managing Information on ARV Drugs Dispensing and Patient Medication Records, and a printed SOP manual was given to each trainee as a reference. The trained professionals are expected to contribute for the recording, documentation, and reporting of ART.

To meet PMI requirements, end user verification data were collected from 35 service delivery points (13 hospitals, 14 health centers, and 8 health posts) from eight regional states and one City Administration (Dire Dawa). The data were collected using the regular PMI-W tools, and reports were compiled and sent to SIAPS headquarters for final review and submission to PMI-W. During this quarter, CRMS data were also collected from 25 health facilities in the Oromia Region, and the report is being compiled for distribution to stakeholders. The number of health facilities where CRMS data were collected has dropped due to the graduation of many facilities.

To ensure continuous patient information recording at health facilities and provide patient education, 22 AMD dispensing registers, 50 national malaria diagnosis and treatment guidelines, 12 health education manuals, and 8 AMR prevention policy documents were distributed to 3 hospitals, 3 health centers and 12 health posts in the Afar regional state.

Partner Contributions

- All health facilities collaborated in facilitating and making all data available. Regional and zonal health departments also made efforts to provide appropriate management support and decision making to implement recommendations from submitted reports.
- RHB and PFSA hub staff expressed an interest in taking over PMIS activities, and their commitment and awareness has helped to improve its implementation.
- Some health facilities allocated their own computers to implement the EDT.

Constraints to Progress

- Discrepancies in the quality of data and reports from some health facilities
- Frequent power interruptions that affect data capture and updating
- Frequent trained staff turnover at some health facilities
- Frequent hardware and software failures
- Poor commitment observed at some health facilities and weak follow up of activities from program implementers
- APTS sites are hesitant to record antimalarial drugs in the register book because of the issue of double burden

Objective 4. Revenue from Sales of Medicines Increased

The national APTS assessment, conducted in collaboration with the FMOH and EPA, indicated substantial improvements in multiple results areas. On average, 82.3% of the hospital in the study made structural changes as part of meeting the APTS requirements. On aggregate, the tools required for APTS implementation were available in 86.4% of APTS sites. Overall budget utilization efficiency increased by 16% between the 2003 and 2008 Ethiopian fiscal years (EFYs). Sales revenues showed an average growth of 42.5% from 2005 to 2007 EFY. One of the unique findings of this assessment was the dramatic reduction in wastage at APTS sites. In those APTS sites with information on wastage, the average wastage rate was 1.1%, which is much lower than the target set in the Health Sector Development Plan. In terms of producing information for decision making, 93.8% of the APTS sites generated monthly financial and service reports. Generally appropriate labeling practices were found to be low in both APTS and non-APTS sites. However, APTS sites performed better than non-APTS sites (3.9 vs 0.7). A slight difference was recorded in patients' knowledge of prescribed medicine dose schedules between APTS and non-APTS sites (85.4% vs 84.7%). Excluding cost-related variables, across the eight domains, patients were significantly more satisfied with services provided at APTS sites than at non-APTS sites (overall mean satisfaction: 3.49 ± 0.85 vs 3.11 ± 0.91 on a 5-point scale). Similarly, higher satisfaction was recorded in APTS sites compared to their own baselines. Availability of key tracer medicines was found to be higher in APTS sites than in non-APTS sites (90% vs 70%). Percent availability showed a significant increase in APTS sites compared to the baseline (65.8% to 85.5%). Stock-out duration was also shorter in APTS sites than in non-APTS sites (43.3 vs 61.1 days).

During this quarter, nine capacity building events were organized for 411 participants. APTS implementing hospitals in the Tigray Region were routinely managing their medicines transactions and services in a transparent and accountable way. They generated monthly financial reports (cash, free and credit sold, unusable, stock on hand, and profit) and service reports (i.e., poly pharmacy, affordability, workload analysis, stock turnover ratio). In all APTS implemented hospitals, the wastage rate was far below the national target (2%), but they provided affordable medicines for the patients and the gross profit increases over time. The hospitals performed internal audits and took corrective measures based on the findings. During this quarter, Suhul Hospital renovated its dispensary rooms at a cost of 100,000 Birr and allocated an additional 200,000 Birr for further improvement to facilitate APTS implementation.

APTS models and registers were printed and made available, and 20 professionals were trained on APTS. This brings the total number of APTS implementing hospitals in the region to seven.

SIAPS participated in the collection, analysis, and interpretation of data for the Ethiopian health insurance assessment, with a focus on medicines financing, benefits management, and rational medicine use. A draft report entitled “Ethiopia National Health Insurance Scale-Up Assessment on Medicines Financing, Use and Benefit Management: Findings, Implications and Recommendations” has been produced and submitted for review by responsible authorities.

SIAPS provided follow up and technical support for Debremarkos and Debretabor Hospitals to conducted an ABC value analysis with VEN reconciliation. Debremarkos Referral Hospital has finalized one year of data using the consumption data source and presented the results to the DTC.

SIAPS, in collaboration with Harari RHB pharmacy experts, finalized the medicine transfer guideline, which is being printed with financial support from SIAPS.

Constraints to Progress

- Resistance to record and report APTS activities as per its implementation procedure
- High turnover of pharmacy accountants meant that hospitals could not generate monthly reports using the available daily summary
- Reporting time is not maintained because of internet connection problems and weak commitment from some pharmacy professionals and pharmacy accountants

Guinea

Goal: Improve the availability of quality pharmaceutical commodities and efficient pharmaceutical services to achieve desired health outcomes

Overall Quarter Progress

During this quarter, SIAPS collaborated with the *Direction Nationale de la Pharmacie et du Medicament* (DNPM) and the *Institut Nationale de la Statistique* (INS) to finalize preparations for the data collection of the national assessment of Guinea’s pharmaceutical supply system. In preparation for a visit from the Global Fund team, the national malaria control program (PNLP) and the Central Pharmacy of Guinea (PCG) organized a multistakeholder discussion to develop a map of malaria-related supply chain activities and planned funding from all stakeholders to improve the coordination of interventions.

Following the quantification workshop, SIAPS worked with the PNLN to finalize the quantification process, including disseminating and validating results and drafting the technical quantification report. SIAPS provided continuous support to the PNLN around the review of reported program and logistics data as well as the organization of monthly meetings for the Procurement and Supply Management Technical Working Group (PSM-TWG). In addition, within the efforts to improve pharmaceutical management capacity, SIAPS assisted the PCG in conducting trainings under the program “medicaments pour tous” in the regions of Kankan, Mamou, Faranah, and Labe. The program also completed the recruitment and induction of nine regional technical advisors who will be deployed within the eight regions of Guinea and at the PCG to support program activities at the regional and peripheral levels.

SIAPS continued to support country-led efforts to integrate the supply chain system for all health commodities. In this regard, SIAPS helped the National Medicines Regulatory Authority (DNPL) conduct a workshop at the central level to review the existing supply chain systems and suggest a practical, integrated supply chain system. SIAPS also collaborated with the PNLN to conduct the seventh end use verification (EUV) in Guinea, prepare, submit the procurement planning and monitoring report for malaria (PPMRm), and monitor the supply status of all malarial commodities across the supply chain system. Further collaboration with the PNLN consisted of organizing emergency distributions to a small number of health facilities in Gaoual prefecture.

SIAPS provided lead support to the DNPL and the *Direction Nationale de la Santé Familiale et de la Nutrition* (DNSFN) to develop a short-term plan of systems strengthening activities to address the most significant challenges in the contraceptive supply chain. SIAPS took the lead in documenting the process and selected strategic interventions, and related activities to create a narrative document that was shared with stakeholders for review and endorsement. This document served as the primary source to fill the country’s FP2020 topline summary, which was submitted to the FP2020 core partners (BMGF, DFID, USAID, and UNFPA). FP2020 aims to expand access to family planning information, services, and supplies by 2020.

Objective 1. Pharmaceutical Sector Governance Strengthened

During this quarter, SIAPS worked closely with the DNPM and the INS to organize the national assessment of the pharmaceutical supply system. Working sessions were held with the DNPM to finalize the terms of reference; identify data collectors; and complete the administrative requirements for the major activities, such as the Ministry of Health (MoH) authorization letter that will facilitate access to health facilities and source documents for the targeted data. At the same time, SIAPS also worked with the INS to define and validate the sampling methodology and determine the sample size. Data collection in 243 health facilities is scheduled to start in mid-October and will be followed by data analysis and results dissemination.

During this quarter, SIAPS participated in coordination meetings run by the PNLP to review the country's malaria commodity requirements and supply chain system strengthening activities in light of the country's negotiations with the Global Fund for New Funding Model's activities and reprogramming. All supply chain stakeholders participated in the negotiations and shared the list of supply chain interventions along with planned budget amounts for the portfolio of activities they are supporting.

SIAPS, PNLP, and PCG staff also underwent training on fraud awareness and prevention provided by the USAID Regional Bureau of General Inspectorate. Different fraud scenarios were presented along with ways to prevent and report fraud cases.

Partner Contributions

- The DNPL led the activity and coordinated with all other stakeholders
- The INS led the process to define the sampling methodology and the sample size for the supply chain assessment
- The PNLP led the coordination efforts around strengthening the malaria supply chain

Objective 2. Capacity for Pharmaceutical Supply Management and Services Increased and Enhanced

SIAPS supported the PNLP to organize a one-day workshop to validate the quantification results. The PSM-TWG, led by PSM experts from the PNLP, presented the quantification approach used to arrive at the results to all malaria stakeholders. Key data and sources, critical assumptions, and procurement quantities and a financial gap analysis were also presented. Forecasting of requirements will cover 2016–2021, while the supply plan will cover 2016–2018. In addition, several working sessions took place between the PNLP and funding partners (Global Fund, USAID/President's Malaria Initiative) to review planned procurements, analyze the funding gaps, and identify additional funding. A draft technical quantification report was produced that is under review by the PNLP leadership. The supply plan that was developed will help the PNLP coordinate the implementation of the procurement plan by different funding partners and their respective procurement agents.

During this quarter, SIAPS/Guinea continued to support the coordination of quantification and procurement planning activities at the central level. Monthly meetings of the PSM-TWG were

held under the leadership of the PNLN that helped assess the supply status of all malaria commodities in country, including available stock, reported consumption, and shipments on order.

To support the PCG project “Medicaments pour tous”, SIAPS sponsored trainings in pharmaceutical management for 67 supply chain professionals (60 males and 7 females) in the regions of Labe, Faranah, Mamou, and Kankan. These trainings aimed to strengthen the capacity of supply chain professionals in health facilities of the four regions to correctly manage pharmaceutical products and use pharmaceutical management tools.

SIAPS also completed the recruitment and orientation of regional technical advisors who will be installed in the nine regions of Guinea, including Conakry, starting in October 2016. They will support the regional inspectors of pharmacies and laboratories to implement supply chain activities at the regional level, including implementing the logistics management information system (LMIS), building the capacity of health facilities in pharmaceutical management, and supporting the rational use and supervision of pharmaceutical services.

Partner Contributions

- The PNLN coordinated the approval of the quantification results
- Other partners, including the PCG, DNPL, STOP Palu, Catholic Relief Services (CRS), World Health Organization (WHO), and Plan International, participated in the validation workshop
- The PCG provided staff to conduct the pharmaceutical management training

Objective 3. Pharmaceutical Management Information Available and Used for Decision Making

SIAPS aided the PNLN to organize monthly meetings to review the monthly malaria bulletin, which presents critical epidemiological data as well as a snapshot of the malaria commodity supply status in all health facilities. SIAPS worked with the PNLN to perform the data analysis of the reported logistics data, which led to the development and publication of the bulletin. All 38 districts submitted LMIS forms for July 2016.

As part of the support provided to the MoH to implement an integrated, paper-based, automated LMIS, SIAPS assisted the DNPL in organizing a two-day workshop with key players in the Guinea supply chain system (i.e., MoH vertical programs, including the PNLN, UNFPA, EU/PASA, Measure Evaluation, and CRS) to perform a rapid diagnosis of the current logistic system and define requirements and critical inputs for the logistics system redesign. The outputs from this workshop informed the definition of a proposed integrated system for the distribution of commodities and reporting of LMIS data, inventory control parameters (minimum and maximum stock levels), new harmonized LMIS reporting formats for all MoH programs, and the development of standard operating procedures.

During this quarter, SIAPS supported the PNLN to conduct the seventh EUV since 2013. The process for this activity started in July 2016 with a three-day training for data collectors. Data

collection took place August 4–16 and was followed by data entry into an excel database. Data review and analyses were conducted by a team from the PNL, SIAPS, and CRS. In total, 66 health facilities from the eight regions of Guinea were visited, including two PCG regional depots, 11 hospitals, and 53 health centers. Results have been compiled into the EUV report, a draft of which is under review and finalization by the PNL.

Using reported logistics data on stock levels from the central, regional, and facility levels and consumption data, SIAPS produced a stock status report and helped to complete and submit the PPMR in July 2016.

Partner Contributions

- The PNL led the monthly review meetings for program and logistics data review
- CRS funded the EUV data collection in Global Fund-funded regions
- Child Fund and Plan International participated in EUV data collection

Constraints to Progress

- Travel difficulties due to road conditions during the rainy season

Objective 4. Pharmaceutical Services Improved to Achieve Desired Health Outcomes

In response to a request by USAID, SIAPS coordinated the country-level efforts that led to the development of a system strengthening action plan for the contraceptive supply chain. SIAPS provided technical and logistics support to organize a three-day workshop with participation from the DNPL, DNSFN, *Direction Nationale de la Prévention et la Santé Communautaire*, UNFPA, PCG, the JHPIEGO-Health Services Delivery project, *Association Guinéenne pour le Bien-Etre Familial*, and USAID. The outcome from this workshop was a plan of action highlighting key interventions to be deployed over the next 18 months to address critical bottlenecks that are hindering the country's progress toward achieving family planning commodity security.

To enable the MoH to take advantage of the latest WHO guidelines on the most efficacious, safe, and cost-effective medicines for priority health problems, SIAPS supported the DNPM to kick off the process to review and update the national essential medicines list (NEML). This process started with the organization of two regional workshops that involved selected doctors, pharmacists, nurses, and midwives from the regional, prefectural, hospital, and health center levels. The workshops helped inform the NEML development process with technical input from practitioners in the field that built on their experience with most prevalent pathologies, most frequently prescribed treatments, and other factors related to effective primary care approaches and treatment outcomes.

Partner Contributions

- The DNPM led and coordinated the activity

- WHO contributed to the development of the technical guides
- Practitioners at the regional, prefectural, hospital, and health center levels provided key inputs to the development of the first draft of the NEML

Mali

Goal: Ensure the availability of quality pharmaceutical products and effective pharmaceutical services to achieve desired health outcomes

Overall Quarter Progress

During the last quarter of project year 5, SIAPS supported the Ministry of Health (MoH) to enhance the coordination, transparency, and accountability of the Malian pharmaceutical supply chain sector. SIAPS assisted in the organization of the quarterly meeting of the national coordination committee (CNC) on August 4, 2016, to update the malaria supply plan. During this meeting, donors' orders and shipments were updated in the Pipeline software, and several recommendations regarding commodities procurement were made using stock status information and shipments status from OSPSANTE to avoid stock-outs and overstock.

From September 5 to 9, SIAPS assisted the maternal, newborn, and child health (MNCH) technical working group through the Directorate of Pharmacy and Medicines (DPM) to conduct an MNCH commodities quantification exercise using a new international guide and recommendations. As a result, most of the program targets were met or exceeded this quarter. With SIAPS support, 26 civil society organizations monitored pharmaceutical management, decision making, and operations, exceeding the goal of 24. SIAPS also supported the development of 27 pharmaceutical management guidelines, lists, and standard operating procedures (SOPs), exceeding the goal of 12 for the life of project (LOP).

With the CNC's quarterly meeting, SIAPS increased the number of CNC meetings to 36, meeting the target. Nine quantification exercises were held, exceeding the LOP target of eight.

SIAPS worked with the Pharmacie Populaire du Mali (PPM) to select a vendor assigned to build the prefabricated warehouse foundation, set up the optimal management system, and adopt a timeline for implementation. Continued support has been given to 50 districts to conduct coaching and mentoring and to assist health information and district warehouse managers to enter logistics management information system (LMIS) reports into OSPANTE.

To improve information availability for decision making, SIAPS supported the DPM to analyze monthly LMIS reports generated by OSPSANTE. The general reporting rate appeared to reach 98%. To promote country ownership, SIAPS assisted the DPM in developing and extending OSPSANTE to include nutrition and HIV commodities. SIAPS will soon begin working with the Ebola coordination unit to enter Ebola commodities into OPSANTE and will conduct the acceptance testing of the HIV and nutrition portals.

SIAPS submitted a procurement planning and monitoring report (PPMRm) for malaria and a procurement planning and monitoring report for contraceptives (PPMRc) to USAID Washington to inform national stakeholders and donors about the availability and future supply of malaria and family planning (FP) commodities at the central level.

In addition, SIAPS supported the national malaria control program to conduct an end user verification study, which demonstrated that 94.87% (74/78) of the health facilities visited used the malaria standard guidelines, and 81.61% of staff received formal training on their use.

The survey demonstrated that stock levels of malaria commodities were adequate in the country, and 90% of patients under the age of five with uncomplicated malaria were treated with combination therapy, as recommended by the standard treatment guideline.

As part of the technical assistance to improve pharmaceutical services, SIAPS continued to support the DRS to conduct coaching visits to trainees in five regions (Kayes, Koulikoro, Sikasso, Segou, and Mopti). Those activities had a significant impact on the number of trainees who successfully completed the post-training action plan. It also improved the use of management tools, including stock cards and LMIS reports.

Objective 1. Pharmaceutical Sector Governance Strengthened

Regarding governance, the August 4, 2016, CNC meeting was hosted by the DPM with SIAPS support and was chaired by the MoH's pharmaceutical advisor. Participants from the MoH, USAID implementing partners, United Nations agencies, and civil society organizations attended this meeting and provided useful information and recommendations.

The objective was to conduct a one-day orientation for CNC members on the optimal use of OSPSANTE and to present and validate the results of the updated procurement plans for contraceptives and malaria commodities. The management of malaria; maternal, newborn, and child health (MNCH); HIV and AIDS; tuberculosis, FP; and tracer products was also monitored.

A total of 25 CNC members participated in the orientation session on OSPSANTE. Through presentations and discussions, several recommendations were made to avoid stock-outs and improve commodities availability at the central level. The key recommendations of the CNC meeting focused on the possibility to extend OSPSANTE to the north regions when possible and to integrate Ebola commodities into it.

Finally, during the reporting period, SIAPS supported the MNCH technical working group through the DPM to conduct MNCH commodities quantification exercises. Participants from the MNCH working group used a consensus process based on the new international MNCH quantification guide to adopt requirements for quantification, including the MNCH commodities list, assumptions, and partner engagement. This exercise was the ninth quantification exercise organized with SIAPS support.

Partner Contributions

The following partners participated in the CNC meetings and contributed to the MNCH quantification to identify bottlenecks and solutions:

- MoH, DPM, FPWG, DNS, PPM
- Donors: USAID, Global Fund/PSI, UNFPA, SSGI, KJK

Objective 2. Capacity for Pharmaceutical Supply Management and Services Increased and Enhanced

To enhance the country's human resource and institutional capacities, SIAPS supported 13 public institutions to organize 18 trainings and mentoring sessions. As part of the SIAPS capacity building efforts, five regions (DRS) were supported to conduct post-training coaching.

A total of 238 trainees were mentored in six districts within the SIAPS intervention regions, and 76% successfully completed the post-training action plan (Kita in the Kayes Region: 78; Fana and Banamba in the Koulikoro Region: 76; Bougouni in the Sikasso Region: 79; Baroueli in the Segou Region: 43; and Djenne in the Mopti Region: 38). Those results significantly increased the percentage of trainees successfully completing the post-training action plan from 52.03% to 77% (647/836), exceeding the target of 71%.

To overcome supply chain management and storage condition challenges, PPM needs to make structural and operational adjustments that will ensure proper management of key health commodities. During this quarter, SIAPS continued to collaborate with donors, including USAID and Cooperation Néerlandaise, to coordinate a new warehouses construction project at the central and regional levels, finalize the vendor preselection process, adopt a timeline, and set up optimal project management procedures.

Finally, the SIAPS Y5 work plan included continued technical and financial support to the MoH at the regional and district levels to support warehouse and health management information system managers in capturing monthly LMIS reports in the dashboard. Internet access was provided to warehouse managers in 50 districts and to five regional pharmacists and six regional information system managers.

Partner Contributions

The following partners participated in and contributed to identifying bottlenecks and solutions:

- MoH, DPM
- Donors: USAID, Cooperation Néerlandaise
- PPM
- Direction Régionale de la Santé of Kayes, Koulikoro Sikasso Ségou, Mopti, and Bamako
- Fifty health districts in the Kayes, Koulikoro Sikasso Ségou, Mopti, and Bamako Regions (including six districts of Bamako).

Constraints to Progress

The primary challenges included:

- Timely and/or accurate meeting minutes
- Effective implementation of a post-training action plan

Objective 3. Pharmaceutical Management Information Available and Used for Decision Making at Different Levels of the Health System

During the FY14 funding period, SIAPS provided technical assistance to the MoH (DPM, DRS, PNL, and DSR) to develop and roll out a web-based dashboard for malaria, MNCH, and FP commodities. The dashboard was designed to capture, track, aggregate, and make available information about malaria, MNCH, FP, and tracer medicine products and to improve information availability and accessibility for better and faster decision making at the national level.

The web portal will assist the MoH and stakeholders in improving forecasting, supply planning, and procurement to support the continuous availability of malaria-, MNCH-, and FP-related commodities. It also offers a platform to easily share information on funding flows and stock-out risks.

During this quarter, SIAPS prepared the user acceptance testing of the HIV and nutrition portals on OPSANTE, which has continued to be a valuable and useful tool. Based on the success with OPSANTE, SIAPS worked with an IT developer, the DPM, and stakeholders to add Ebola commodities to OPSANTE, and general requirement data were collected.

Finally, during this reporting period, SIAPS submitted to USAID Washington a PPMRm in July 2016 and a PPMRc in August 2016 after collecting stock information data from the national and facility levels using OPSANTE. The major findings and recommendations resulting from these two reports can be summarized as follows:

- The stock level of general malaria commodities is adequate in the country
- SIAPS conducted an end user verification study in 78 facilities, including 24 storage facilities

The relevant finding of this study revealed that:

- Approximately 90% (1,958/2,178) of patients under the age of five with uncomplicated malaria were treated with combination therapy following the standard treatment guideline.
- Among the surveyed structures, 91.14% submitted their LMIS reports and orders on time. The implementation and monitoring of OPSANTE has significantly contributed to improve this reporting rate. All health facilities had at least one presentation of AL on the day of the visit, and 78% had four presentations. The percentage of health facilities stocked-out for three days or more in the last three months ranged from 0% to 29% depending on the commodities.

Partner Contributions

The following partners participated in and contributed to identifying bottlenecks and solutions:

- PPM, PSI, DPM, DSR, USAID, KJK, and UNFPA provided data and participated in the data analysis and validation for the PPMRm and PPMRc.

- DRS, PPM regional warehouses, and 50 health districts in the Kayes, Koulikoro, Sikasso, Segou, and Mopti Regions and Bamako participated in data collection and entry in OSPSANTE.

Constraints to Progress

The primary challenges are attributed to the poor ownership of participants at all levels in terms of analyzing data and making relevant decisions. Providing continuous support to manage and host OSPSANTE after SIAPS ends has also been discussed.

Objective 4. Pharmaceutical Services Improved to Achieve Desired Health Outcomes

To improve pharmaceutical services and achieve desired health outcomes, SIAPS Mali worked closely with the DRS to conduct coaching visits to trainees on the use of LMIS SOPs in the Kita District (Kayes Region), Fana and Banamba Districts (Koulikoro Region), Bougouni District (Sikasso Region), Baroueli District (Segou Region), and Djenne District (Mopti Region). During those visits, the coaching team evaluated the implementation of the post-training action plan, which will contribute to improve LMIS roll out; implement the essential medicines procurement and distribution scheme; and strengthen the capacity of field-based health workers to use the newly developed reporting tools for medicine stock status, consumption, and treated patients.

Partner Contributions

The following partners participated in and contributed to identifying bottlenecks and solutions:

- DRS, PPM regional warehouses, and 50 health districts of the Kayes, Koulikoro, Sikasso, Segou, and Mopti Regions participated in the data collection and entry in OSPSANTE.

Mali Ebola Portfolio

Goal: Ensure the availability of quality pharmaceutical products (infection prevention and control commodities) and effective pharmaceutical services to achieve desired health outcomes

Overall Quarter Progress

SIAPS provided technical assistance to the Center of Emergency Operations (Centre des Operation d'Urgence [COU]), which is responsible for coordinating the Ebola emergency response, to organize the quantification of Ebola-related products. As a result of this quantification exercise, an agreed-upon list of Ebola-related products is now available and has been shared with all stakeholders. Following the quantification exercise, SIAPS supported the COU to organize a coordination meeting that led to the validation of the quantification methodology with assumptions made regarding the quantity and cost of each Ebola-related product.

SIAPS worked closely with the Ministry of Health's Department of Pharmacy and Medicines (Direction de la Pharmacie et des Medicaments [DPM]) to agree on a list of needed activities to implement the Ebola module into OSPSANTE, which would improve the visibility of stock data of Ebola products in warehouses and health facilities.

SIAPS and the COU discussed preparations for the OSPSANTE system developer's visit to Mali to work on the expansion of OSPSANTE to accommodate Ebola products. SIAPS requested the COU to provide the name of two contact persons who will be fully involved in the process.

Objective 1. Capacity for Pharmaceutical Supply Management and Services Increased and Enhanced

The quantification workshop was held June 15–21, 2016, at the COU. All stakeholders reviewed the list of Ebola commodities, and consensus was reached on a common list that has been used for the next steps of the quantification exercise. SIAPS provided an overview of general quantification principles and assumptions that are needed to forecast Ebola products. A list of Ebola care and treatment centers and a list of activities to be undertaken per category of Ebola site have been established. After discussion, participants reached consensus on the number of Ebola treatment centers, transit and observation centers, and isolation rooms.

The usage rate of each product has been defined per activity and per Ebola site category, and the quantity and associated cost of each product have been estimated based on assumptions. The quantification exercise has been presented to the coordination committee for validation.

Objective 2. Pharmaceutical Management Information Available and Used for Decision Making at Different Levels of the Malian Health System

SIAPS and the DPM met with the COU to discuss the benefits of integrating Ebola-related products into OSPSANTE. This tool was developed by SIAPS with USAID funding as a web-based information dashboard to ensure better management and use of health commodities at the central and lower levels.

SIAPS, the COU, and the DPM agreed on a list of activities and timelines, including developing a scope of work to define roles and responsibilities for the three organizations. Key activities included developing an Ebola platform in OSPSANTE, training relevant staff to use the tool, and having the COU assign two focal persons (a pharmacist and a clinician) to be part of a technical working group responsible for defining requirements for the Ebola dashboard.

Mozambique

Goal: To ensure access to safe, efficacious and quality pharmaceutical products and services that help achieve desired health outcomes

Overall Quarter Progress

During this quarter, SIAPS supported the Pharmaceutical Department (PD) M&E staff to prepare the third quarterly report and submit it to the head of the PD, select and obtain consensus on nine impact indicators, support the PD M&E unit to discuss the selected indicators with the Ministry of Health (MoH) M&E Department, finalize the results framework and performance monitoring plan, and update the performance indicators reference sheet for the impact indicators. In addition, 4,232 product market authorization files with primary information needed to process market authorization renewals and variations were converted from paper to electronic format. This helped streamline the renewal and variations process, reduced the registration time, and improved access to these medicines. To strengthen the hospitals' Drug and Therapeutics Committee (DTC) capacity, SIAPS supported the MoH Hospital Pharmacy Department to perform one supportive supervision visit and one DTC workshop

Objective 1. Governance in the Pharmaceutical Sector Strengthened

During this quarter, SIAPS Mozambique submitted a guide for future revisions of the essential medicines list (EML) and the updated terms of reference to the PD.

The data collection showed a steady decrease in the average number of days needed to register a product and a 4% increase in the number of EML products registered (68%). Although the notifications by provinces have increased since the beginning of the year, the PD has not been able to review and respond to those notifications in a timely manner. An additional 81 people have been trained on pharmacovigilance, bringing the total number trained to 1,378. Next steps for institutionalizing indicators include authorization for final submission of nine indicators to the MoH by the head of the PD and submitting the indicators for approval.

Partner Contributions

- PD staff were active members of the technical working group, contributed to the data collection and the quarterly report, and worked with stakeholders and the DPC to review the impact indicators for the MoH.
- The DTC secretariat has made a significant contribution to finalizing the EML.
- During this quarter, the registration sector actively contributed to improving the system by reporting errors and requesting changes to improve system functionality.

Constraints to Progress

- There were delays in receiving answers from the PD.
- The PD server stopped to work due to a virus and other problems. With each new release, requests were made to improve the functionality. System procedures changed weekly and

affected the production of user, trainer, and applicant manuals and a troubleshooting guide.

- During this quarter, the only PD M&E staff member available to follow up on these activities also had to respond to other activities. Because SIAPS is in the final stage, activities were prioritized to ensure the sustainability of M&E activities in the PD after close out. Therefore, a presentation of the second data collection results (January–March) was cancelled, and submission of the third report (April–June) was delayed.
- Only one PD M&E staff member was available on a part-time basis to implement the M&E activities. To overcome this challenge, a person has been identified to assist in data collection; however, there is need to guide this person to ensure the accuracy and reliability of the data.
- There were delays in the delivery of targets for the indicators to be approved by the MoH.

Objective 2. Pharmaceutical Services Improved to Achieve Health Outcomes

During this quarter, SIAPS supported the Hospital Pharmacy Department to perform a supportive supervision visit to a province hospital and a DTC workshop. The purpose of the supportive supervision visit was to strengthen the hospital's DTC capacity to continuously improve the safe use of medicines at the health facility level. SIAPS staff provided training to hospital pharmacists on collecting, analyzing, and reporting prescription indicators, medication errors, and aggregate consumption studies. Results of medicine use studies in this hospital showed a high percentage of encounters with at least one antibiotic prescribed (58%), and antibiotics make up the therapeutic group with the highest consumption in health facilities (23%). DTC members agreed that noncompliance with the standards of documentation of a clinical chart is a major concern. Based on this conclusion, DTC members agreed on a set of actions to improve the situation.

The purpose of the DTC was to share member experiences in implementing continuous quality improvement actions to promote rational medicine use in hospitals, provide training on the major gaps identified during the 10 supportive supervision visits, and agree upon a package of interventions for DTCs to focus on. Of the 13 DTCs directly supported by SIAPS, seven were able to develop continuous quality improvement projects to promote rational medicine use and were selected to participate in the DTC workshop. Each DTC presented its quality improvement project, collected insights from other committees, and shared success factors. SIAPS provided a consultant to train DTC members on standard treatment guidelines (STGs) for anemia, upper respiratory infections, and gastrointestinal infections. The tuberculosis, malaria, and HIV programs also updated DTC members on STGs for these diseases. Medicine use studies tools were also discussed in the workshop. At the end of the workshop, DTCs were able to harmonize therapeutic performance and clarify doubts regarding medicine use studies. These activities positively impacted two indicators: the number of people trained: 557 (81% of the life of project target) and the number of sites assisted by SIAPS that implements medicine safety activities and pharmacovigilance: 13 (162.5% of the life or project target).

Partner Contributions

- The Hospital Pharmacy Department contributed by training DTC members and co-facilitating the DTC workshop.
- DTC members continued to report on medication errors.

Namibia

Goal: To improve the quality and safety of pharmaceutical products and services for sustained HIV epidemic control in Namibia

Overall Quarter Progress

The Ministry of Health and Social Services (MOHSS) acknowledges SIAPS' support as essential in improving the delivery of pharmaceutical services in Namibia. This quarter, SIAPS provided technical assistance (TA) to the Namibia Medicines Regulatory Council (NMRC) to update the registration status of 230 medicines that were approved by the newly appointed NMRC.

SIAPS continued assisting the MOHSS with the review of the National ART Guidelines to ensure they are in line with the new recommendations of the World Health Organization (WHO). Specifically, SIAPS advised on incorporating community-based (CB) ART services as part of the newly proposed WHO differential care model, adoption of pre-exposure prophylaxis (PrEP) for HIV, and appropriate ARV dosing in adolescents.

SIAPS supported the MOHSS in strengthening institutional and individual human capacity development through in-service trainings on pharmaceutical management and service delivery, supportive supervision, and direct TA to training institutions. On-the-job training on inventory management was conducted at 21 district hospitals and 2 health centers. The MOHSS national supportive supervisory feedback report, which has key recommendations for helping pharmaceutical staff and facilities improve their performance, was finalized in this quarter with SIAPS support.

Fifty (50) main ART sites benefitted from remote TA on the facility Electronic Dispensing Tool (EDT), national EDT database (NDB), and e-TB Manager; this TA helped ensure optimal availability of data for improving pharmaceutical service delivery, especially for people living with HIV and AIDS and those with multidrug-resistant TB (MDR-TB). Of these 50 sites, 23 were supported to implement the Facility Electronic Stock Card (FESC), and 10 sites continued to receive support on piloting the EDT mobile phone short messaging service (SMS) that reminds patients about their appointments.

SIAPS continued to work with the MOHSS, PEPFAR partners, and academic institutions, such as the University of Namibia (UNAM) and the Namibia University of Science and Technology (NUST), in implementing strategies for improving ART patient adherence and combating antimicrobial resistance (AMR) and HIV drug resistance (HIV-DR). In this quarter, the annual HIV-DR survey was concluded, and the report on switching ART regimens for pediatric patients was drafted.

Objective 1. Quality and Safety of ARVs and Medicines for Opportunistic Infections Assured

SIAPS supported the NMRC in resolving challenges encountered on the desktop version of Pharmadex. Since September 2015, SIAPS has also helped the NMRC review 230 medicines and

recommend them for council approval. SIAPS continued to support the routine testing of the web-based Pharmadex. SIAPS also worked with NMRC to verify the registration of status of tenofovir/emtricitabine (TDF/FTC)-based product labeling for pre-exposure prophylaxis (PrEP) indication. This information was requested by USAID as part of preparatory work for accelerating adoption of TDF/FTC for PrEP in Namibia.

SIAPS continued to provide TA to the MOHSS in the review of the National ART Guidelines and participated in the second review meeting held in September 2016. The main areas of support in the new guidelines included use of a lower dose of efavirenz in adults, appropriate dosing of ART medicines in adolescents, monitoring safety, and appropriate use of ARVs and other medicines used in the management of opportunistic infections (OIs). In addition, SIAPS provided TA in supporting the MOHSS to implement CB ART services as part of the newly proposed WHO differential care model.

SIAPS continued supporting Therapeutics Committees (TCs) to improve their functionality in providing oversight and accountability at public health facilities at district and regional levels. With support from SIAPS, the Global Fund availed funding to support TC-related activities.

Partner Contributions

- NMRC provided feedback and support toward implementation of the web-based Pharmadex tool for medicines registration
- Directorate Special Programs (DSP) of the MOHSS for review of the National ART Guidelines

Constraints to Progress

- Internal SIAPS staff changes have continued to hamper progress in finalizing the Pharmadex web-based tool. A tracker was designed to document processes and activities to ensure smooth continuity of the support to MOHSS.

Objective 2. HR Capacity in Pharmaceutical Management and Service Delivery Strengthened for Improved HIV and AIDS Treatment Outcomes

SIAPS provided TA to the MOHSS Division of Pharmaceutical Services in providing in-service trainings on pharmaceutical management and service delivery. Training on inventory management and practices was conducted during the installation of the FESC at district hospitals. These trainings were targeted at pharmacists, pharmacists' assistants, clerks, and work hands involved in the management of pharmaceuticals and health commodities. In this quarter, SIAPS trained 42 health workers in 21 district hospitals on the FESC during the five-day facility-based on-the-job training. In addition, SIAPS trained 27 regional pharmacists, district pharmacists, and managers from the Division of Pharmaceutical Services on FESC during the annual pharmacists' forum held September 27-28, 2016. The regional and district hospital pharmacists developed action plans to ensure continued and efficient implementation of FESC, uploading data on the pharmaceutical dashboard for visibility and use of such data for decision making.

The MOHSS considers the two-way feedback process of supportive supervision to be important in helping pharmaceutical staff continuously improve their work performance. SIAPS supported the MOHSS in the development of a national support supervisory visit (SSV) feedback report. The report was disseminated to regional directors in all 14 regions in Namibia and was also discussed at the National Pharmacists' Forum to facilitate action planning and share ideas for regional and national implementation.

SIAPS provided TA to the UNAM School of Pharmacy (SoP) to finalize a poster on "A pre-service curriculum for capacity development in medicines regulation at the University of Namibia: process and outcomes." This poster was presented at the second Training Workshop and Symposium organized by Medicines Utilization Research In Africa (MURIA) Group from July 25-27, 2016, hosted by the University of Botswana in Gaborone.

Also, SIAPS collaborated with UNAM-SoP in developing a poster entitled "Strengthening preservice pharmacy training on rational medicine use, antimicrobial resistance, and pharmacovigilance" that was presented at the 76th FIP World Congress of Pharmacy and Pharmaceutical Sciences in Argentina in August 2016. The development of the poster provided an opportunity for SIAPS TA to UNAM-SoP to obtain feedback on the rational medicine use (RMU)/antimicrobial resistance (AMR) module that SIAPS supported to develop for pre-service training at UNAM-SoP. Some responses by UNAM-SoP students on the instructional design used for delivering the RMU/AMR contents showed general appreciation of the new instructional design. New approaches to pharmacy education in low- and middle-income countries emphasize a patient-centered and public health approach to teaching topics, such as RMU, AMR, and pharmacovigilance, making it necessary to integrate these topics into pre-service training courses.

SIAPS finalized and disseminated the technical brief "Strengthening Namibia's Pharmacy Sector and Pharmacy Workforce" which documented a holistic approach to strengthening human resource capacity, the Namibian context, a strategic approach through the years, implementation, results, challenges, lessons learned, and a conclusion on sustainable successes. The brief highlighted SIAPS' achievements on capacity building and provides lessons for future, related interventions. The documentation was a beneficial, project-introspective evaluation of plan, process, and outcome that is a lesson for future project work.

Partner Contributions

- UNAM-SoP trains pharmacists and other pharmacy cadres
- Health Professions Council of Namibia as a key stakeholder on registration and regulation of the pharmacy profession in Namibia
- National Health Training Centre of the MOHSS on continued training of pharmacist assistants

Objective 3. Availability and Use of Pharmaceutical Service Data is Enhanced for Improved Quality of ART Services

Fifty main ART sites benefitted from remote and on-site TA on the EDT for ART data capture and reporting in Q4. Of these, 23 sites were supported to implement the FESC. SIAPS continued to provide routine IT support to MOHSS' 50 main EDT sites, the NDB, and e-TB Manager to ensure optimal availability of data for improving pharmaceutical service delivery especially for people living with HIV and AIDS.

A user acceptance survey on e-TB manager was finalized and the report disseminated in this quarter; 38 active users completed the survey in Namibia and 95% of the users agreed that the tool is useful and improves DR-TB case management in Namibia.

SIAPS continued to support the enhancement of FESC and the MOHSS pharmaceutical information dashboard to ensure accurate data capturing and reporting by facilities. The FESC was updated to incorporate feedback from end users. This tool will automate ordering processes based on item consumption data, thereby improving the accuracy of pharmaceutical ordering. FESC will improve reporting, data availability, and visibility at national, regional, and district hospitals level to minimize stock-outs and wastage of ARVs and other essential medicines. SIAPS is supporting the MOHSS to visualize stock data through the dashboard that is linked to the FESC and other SIAPS-supported tools such as the EDT. Training materials on FESC and the dashboard were prepared and presented at the 2016 Annual MOHSS Pharmacists' Forum. In addition, a three-page, quick reference user guide on the use of FESC was developed and shared with MOHSS pharmacists and managers of pharmaceutical services.

In this quarter, SIAPS continued to validate the data in the EDT and the Electronic Patient Management System. The validation exercise was done by analyzing variances in patient data between the systems and obtaining explanations for the variances from the health workers who manage and use these electronic tools. This information will assist the MOHSS managers in appraising the quality of data from the two tools for decision making and guide them in designing and implementing interventions to improve ART data quality.

SIAPS continued supporting the MOHSS Directorate of Tertiary Health Care and Clinical Support Services and the DSP in implementing the EDT to the mobile phone SMS at 10 ART sites. The SMS allows automated short messages to be sent to ART patients, reminding them about their pharmacy appointments, encouraging adherence to ART. In this quarter, SIAPS ensured that facilities implementing the SMS reminder are online and messages are sent through a centralized server.

Partner Contributions

- MOHSS Sub-Division of National Medicines Policy Coordination: on support to health facilities using the EDT, FESC, e-TB Manager, and implementation of FESC and Dashboard
- DSP: on support to primary health care facilities using the mobile EDT for ART data capture

- 35 MOHSS district hospitals and 2 health centers: on implementation of FESC and ART data quality assurance

Constraints to Progress

Implementation of the SMS reminder lagged behind because of the redesign of the data flow from health facilities through a centralized system that, which in turn, forwards messages to clients. Local installations proved to be difficult to support remotely because some sites had poor network signals which prevented the sending of bulk SMSs at the facility level.

Objective 4. Quality, Efficiency, and Accessibility of Pharmaceutical Services Strengthened to Attain 90% Treatment Coverage and 90% Viral Suppression

SIAPS supported the Kunene Regional Management Team and TC in disseminating the findings and recommendations of the medicine use evaluation (MUE) that was conducted in 2015/2016 to health care workers. Namibia's AMR national advocacy strategy identified TCs as key structures for promoting RMU and combating AMR.

SIAPS assisted ART sites in assessing progress made in transitioning patients to new regimens following recent changes in Namibia's ART guidelines. The exercise identified challenges in dispensing new atazanavir/ritonavir-based regimens using the EDT. SIAPS updated the EDT to include the new ART regimens to facilitate smooth transition of patients.

SIAPS collaborated with MOHSS-DSP, Project HOPE, IntraHealth, and CDC to support implementation of CB programs to improve access to ARVs. SIAPS participated in site visits to Nyangana and Engela districts to implement CB ART strategies. SIAPS support includes ensuring that dispensing tools are adapted to make ARVs accessible to CB ART groups while maintaining product quality and accountability, as well as not compromising the quality of patient care. The EDT at these ART sites was adapted to allow ARV dispensing to CB ART groups. Nurse mentors and pharmacy staff involved in delivering ART services in these facilities were trained on the process flow and dispensing of ARVs to CB ART groups.

SIAPS collaborated with the UNAM School of Medicine and the German-based University of Bonn to support the MOHSS Quality Assurance Division in implementing AMR prevention activities. SIAPS provided TA to the School of Medicine to submit an abstract on "Country coalitions to promote infection prevention and control and prevent antimicrobial resistance" which was accepted for a poster presentation at the 6th Infection Control Africa Network Congress to be held in October 2016. Prevention of AMR is important in conserving the efficacy of currently used antimicrobial molecules and avoids the use of second-line regimens, especially in ART and TB treatment, which are more expensive and are associated with more side effects and toxicity, which affect the success of therapy.

SIAPS participated in a regional workshop on analysis of ART patterns and outcomes using data from SIAPS-supported ART tools and completed a draft report and policy brief on the assessment of ART pediatric outcomes, regimen switches, and adherence in Namibia. This followed a data analysis exercise that was conducted jointly with the team from NUST, SIAPS,

and the MOHSS. The preliminary data and report will be shared with MOHSS through the HIV technical working group for input.

To enhance the spontaneous reporting of adverse drug reactions (ADRs) to the MOHSS Therapeutics Information and Pharmacovigilance Center (TIPC), SIAPS supported the TIPC to mount 23 wall holders for medicine safety yellow forms in doctor's casualty rooms in 12 health facilities for ART and TB programs.

Namibia adapted the WHO generic early warning indicators (EWIs) abstraction protocol and entered the sixth round of integrating EWI collection into the routine national ART program, with technical support from the WHO, Tufts University School of Medicine, and SIAPS.

In 2016, Namibia selected five recommended WHO EWIs and abstracted data from all ART sites (50 main sites and 163 outreach and integrated management of adolescent and adult illness sites). The five indicators included on-time pill pick-up, retention in care, pharmacy stock-outs, dispensing practices, and viral load suppression. A draft report consolidating areas of SIAPS' support and the performance of the annual reviews since 2010 is under review.

Partner Contributions

- MOHSS HIV Case Management Unit and DSP on ART adherence and retention initiatives
- MOHSS Kunene Regional Management Team on disseminating findings and recommendations from an MUE and refining a manual for conducting MUEs
- MOHSS National Tuberculosis and Leprosy Program in the review of the Second Medium- Term Plan for TB and Leprosy 2010-2016/17
- MOHSS TIPC on activities aimed at improving the spontaneous reporting of ADRs

Niger

Goal: To strengthen pharmaceutical management of health products to treat malaria

Objective 1. To Strengthen the Systems for Malaria Commodities Management

Seasonal Malaria Chemoprevention

The Ministry of Health (MoH) launched the 2016 Seasonal Malaria Chemoprevention (SMC) campaign on August 4, 2016 in presence of the First Lady of Niger, the Minister of Health, and the United Nations Children’s Fund (UNICEF) country representative. The 2016 SMC campaign will be implemented in 27 out of 38 eligible districts using funding from the Achieving Catalytic Expansion of Seasonal Malaria Chemoprevention in the Sahel (ACCESS-SMC) project, UNICEF, the World Bank (through the regional Sahel Project Neglected Tropical Diseases /Malaria), Médecins sans Frontières (MSF) Suisse, Islamic Relief Niger, and Bien-Être de la Femme et de l’Enfant au Niger (Befen). Table 3 summarizes the schedule for the 2016 SMC campaign in Niger.

The 2016 SMC campaign also includes screening of severe malnutrition in children aged 6 months to 59 months.

Table 3. The 2016 SMC Schedule

Regions	Dates			
	First Round	Second Round	Third Round	Fourth Round
Niamey and Tillabéri (10 health districts covered)	August 22–26, 2016	September 19 – 23, 2016	October 17–21, 2016	November 14 –18, 2016
Diffa, Dosso, Maradi, Tahoua, and Zinder (17 health districts covered)	August 4–7, 2016	September 1– 5, 2016	September 29– October 3, 2016	October 27– 31, 2016

Approximately 2,233,062 out of 2,699,613 children (83%) aged 3 months to 59 months received amodiaquine and sulfadoxine/pyrimethamine during the first round of the SMC campaign (figure 1).

In addition, of the 1,400,032 children screened aged 6 months to 59 months, 1,216, 973 (87%) had normal nutritional status, and only 34,955 (2%) had severe malnutrition (figure 2).

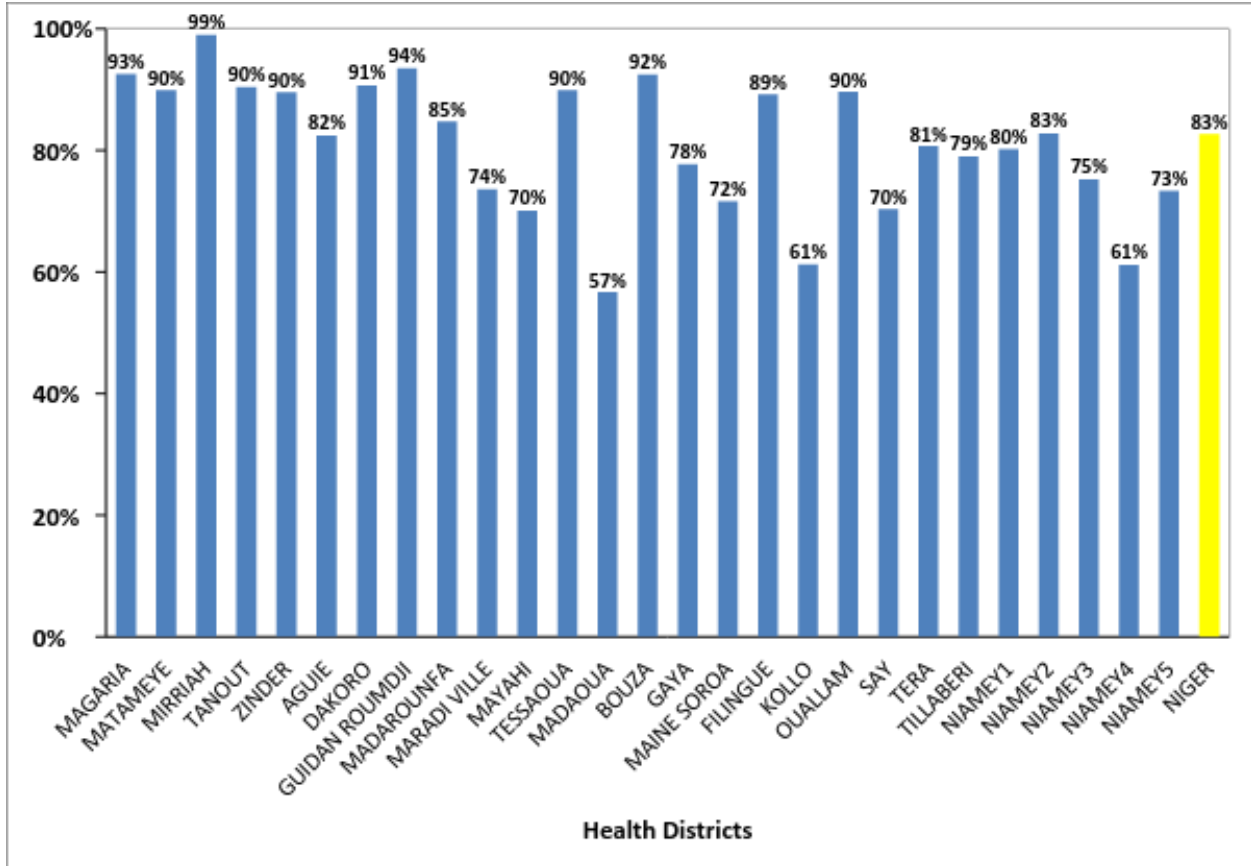


Figure 1. 2016 SMC Coverage-First Round

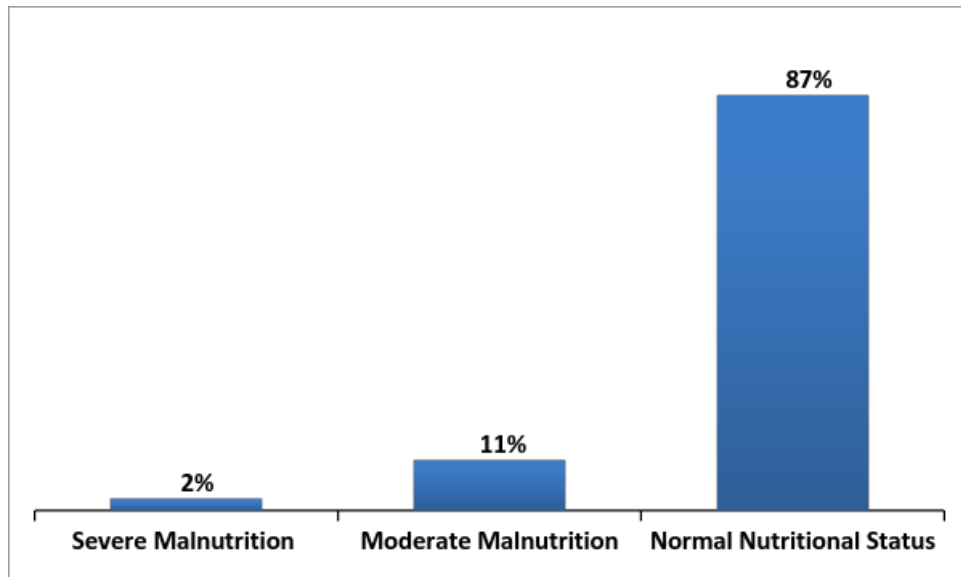


Figure 2. Nutritional Status of Children Aged 6-59 Months

During this quarter, the SIAPS technical advisor assisted the Central Medical Stores (CMS) in delivering SMC commodities. Work included developing a distribution plan and overseeing the distribution process. This engagement and team work ensured the on-time delivery of commodities to all distribution sites. The availability of products has been highlighted as one of the strengths of this first round of the campaign. However, the lack of some data collection tools, especially in the regions of Niamey and Tillaberi, insufficient funds, and limited capacity to manage commodities at the peripheral level were some of the challenges encountered during this round. Moreover, about half of the targeted children were not screened for malnutrition due to limited funding.

Management of Malaria Commodities Supply Chain in Niger

During this quarter, and particularly in August 2016, there was a serious shortage of RDTs in most districts; some districts were stocked out. This was due to delays in delivery by the supplier after ordering.

The SIAPS technical advisor and the Catholic Relief Services (CRS) Procurement Supply Manager worked closely to develop a distribution plan for malaria commodities, including RDTs, AL, ASAQ, and artesunate injection. It took about one month to distribute commodities to the 44 health districts. The districts received four months of stock of malaria commodities to cover the remaining months of the high transmission season (September to November).

Pooled Procurement Mechanism Workshop for Global Fund-funded Countries

Eight French-speaking countries (Benin, Burkina Faso, Cameroon, Chad, Cote d'Ivoire, Democratic Republic of the Congo, Niger, and Togo) met in Abidjan, Cote d'Ivoire, September 20–22, 2016, to discuss and receive training on the Global Fund Pooled Procurement Mechanism software called “Wambo.” This software was developed by the Global Fund to establish a platform whereby countries may quickly place their orders, track their orders, budget, and keep informed about the status of their orders. Each country was represented by delegates from: its MoH; National Drug Authority; malaria, tuberculosis (TB), and HIV programs; CMS; and Global Fund principal recipients. L'Association Africaine des Centrales d'achats de Médicaments Essentiels (ACAME) and other partners also participated in the workshop. A key message delivered during the workshop was that the Global Fund encourages countries using the PPM to use the Wambo software.

Coordination with Partners

During this quarter, SIAPS supported the NMCP in conducting meetings with partners involved in malaria management, including supply chain management. The SIAPS technical advisor also contributed to the preparation of the distribution plan for SMC products and other malaria commodities (table 4).

Table 4. Coordination Meetings held July–September 2016

Partners	Dates	Purpose
World Health Organization (WHO), CRS, UNICEF, Befen, CONCERN, MSF Belgium, Islamic Relief Service	July 4, 18, and 27, 2016	Plan 2016 SMC implementation
CRS, Plan Niger	Sept 9, 2016	Follow up and evaluation of NFM activities planned for 2016

Challenges and Lessons Learned

- The NMCP lacks essential staff to properly manage medicines, including malaria commodities. In addition, the NMCP lacks the organizational capacity to effectively manage the program and achieve desired results. To better achieve its objectives, the NMCP management team still needs more leadership and management training. The newly developed NMCP activities and capacity strengthening plan will address some weakness over the next two years. For supply chain management, the recruitment of a pharmacist who will start work in October will help to improve the management of malaria commodities.
- Improving coordination and communication among the NMCP, CRS, UNICEF, WHO, MSF, and West African Health Organization and other partners will help to alleviate challenges and achieve results, particularly in medicines management.

Next Steps and Priorities for Next Quarter

For the next quarter, the following activities are planned:

- Follow-up and final evaluation of the 2016 SMC campaign.
- Malaria supply chain coordination committee meeting.
- Workshop coordination meeting to plan Global Fund NFM activities for 2017.

Quarterly Travel Plan

- Senior technical advisors annual coordination meeting

Philippines

Goal: To strengthen key institutions in reducing TB burden through increased access to quality and effective pharmaceutical and laboratory services

Overall Quarter Progress

Building on the achievements for this project year, SIAPS Philippines continues to strengthen key institutions in addressing the tuberculosis (TB) burden in the country. In partnership with Philippines' National TB Program (NTP), SIAPS sustained gains in delivering quality and effective laboratory network management; community health leadership, management, and governance; pharmaceutical management capacity at facilities (pharmacies and laboratories); pharmaceutical supply chain management information systems; and pharmacovigilance (PV) systems.

During this quarter, SIAPS continued to provide technical leadership and support to the NTP for the review of guidelines, standards, and relevant policies following the laboratory trainings held the previous quarter. SIAPS also assisted the NTP in quantifying medicines for additional patients diagnosed in FY2016 to ensure an uninterrupted supply of medicines for the programmatic management of drug-resistant TB (PMDT).

In addition, SIAPS provided assistance for a registration information system assessment with the aim of making recommendations to improve the current system being utilized by the Food and Drug Administration (FDA). SIAPS trained FDA staff in PV systems with an emphasis on the review and development of relevant guidelines and standard operating procedures to monitor the safety and effectiveness of anti-TB medicines.

SIAPS continued its support to the National TB Reference Laboratory (NTRL) to finalize standard operating procedures (SOPs) for supply management. In addition, SIAPS provided technical assistance to the NTRL training manager and key senior medical technologists based in Department of Health (DOH) regional centers to develop a draft laboratory training guide that will be utilized by NTP's regional and provincial laboratory network managers. SIAPS also provided assistance to the NTRL to enhance the curriculum and design of the training of trainers (TOT) course for basic TB microscopy. The enhanced curriculum introduced new topics that led to improved training effectiveness as observed during the SIAPS-assisted training attended by DOH laboratory managers from eight regions and three cities/provinces.

SIAPS also gathered and analyzed data samples from 33 laboratory sites nationwide for the laboratory network assessment. A draft report is now being prepared that will highlight issues affecting laboratory management, quality assurance, and other areas.

SIAPS worked with Quezon City district health officers to identify future directions for implementing the community health governance model (Barangay Health Management Committee (BHMC)) and scaling up best practices to all health centers in the city.

Objective 1. Capacity for Pharmaceutical and Laboratory Leadership, Governance, and Management Improved

To help the NTRL strengthen the laboratory network, SIAPS provided technical assistance to review and revise policies, guidelines, and standards for NTP laboratory trainings. Through a series of meetings and consultations, SIAPS worked with the NTRL training manager and selected senior DOH regional medical technologists to develop a draft laboratory training guidance document. The document includes revised policies, selection criteria for trainers and trainees, and standards for training facilities. It will provide guidance to regional and provincial NTP laboratory network managers in planning and implementing effective laboratory trainings.

SIAPS provided assistance to enhance the curriculum and design of the TOT course for basic TB microscopy to improve its effectiveness. Enhancements include the addition of new topics such as an introduction to program management, data management, report writing, creating effective teaching materials, effective teaching skills, waste management, and biosafety. Another major improvement to the approach was the addition of a list of required competencies and tools to measure the competencies of the participants during the course. A post-workshop preceptorship has been included in the program to provide support after the classroom training.

For the laboratory network assessment, SIAPS completed data management tasks, including collation, quality assurance, validation, and initial analysis. A draft report has been prepared. Major issues included relatively poor access to services; inadequate staff; a lack of capacity to provide effective training; poor equipment and facility maintenance; inadequate biosafety practices; poor laboratory waste management; inadequate monitoring and supervision; supply management issues, such as stock-outs, expired stains, and storage problems; delayed reporting; and irregular implementation of quality assurance procedures.

Working with the NTRL to monitor performance against NTRL work plans, SIAPS found that the 2016 work plans involved more focused activities and better adherence to the planned activities. Overall, the NTRL technical units showed an increase in accomplishments compared to their 2015 performance.

To increase community-level TB program leadership, management, and governance, SIAPS worked with Quezon City district health officers to identify the future direction of BHMC implementation and scale up in the rest of the city. Recommendations were made for strategic planning, monitoring, and technical support.

Finally, SIAPS is assisting the NTRL in improving the laboratory supply management system. As part of the technical assistance plan, SIAPS worked with the NTRL to enhance its current SOPs and develop new SOPs for supply management. This quarter, SIAPS worked with NTRL management and staff to finalize the draft SOPs. SIAPS also assisted the NTRL in conducting their physical count and provided guidance on proper storage and inventory management. As the next step, SIAPS will conduct training on laboratory supply management for the NTRL.

SIAPS continues to work with the NTP in strengthening its governance capacity for the overall pharmaceutical management of TB medicines by convening the National Drugs and Supplies

Management (DSM) working group. This quarter, the priority areas are the introduction of a new pediatric fixed dose combination (FDC) formulation and the procurement of additional medicines and accelerated orders for the PMDT. As next steps, SIAPS will provide assistance to the NTP in finalizing the transition plan and guidelines for the introduction of the new FDCs.

Partner Contributions

- NTRL and DOH regional offices
- Coordination of activities for consultative meetings and planning and implementation of the TOT course
- Preparation of standardized training microscopy slides
- Providing the senior trainers and training program manager
- DOH Region 7 provided the venue and equipment for the training
- The Cebu City Health Office provided microscopes for the training
- During this quarter, the NTRL hired a new administrative head and assistant, both of whom will play major roles in laboratory supply management

Constraints to Progress

- For the laboratory training decentralization
 - Delayed implementation of activities due to delays in partner meetings for laboratory training decentralization.
 - Scheduling conflicts that led to the postponement of meetings and other activities, such as the development of guidance documents and training courses for DSSM and EQA.
 - Delayed feedback on materials needing review
- For the laboratory network assessment
 - Unavailability of staff in the laboratories visited
 - Scheduling conflicts resulting in the postponement of lab visits
- The NTRL's storage capacity is a constraint in the proper management of laboratory supplies

Objective 2. Capacity for Transparent and Evidence-based Decision Making Improved

This quarter, the NTP increased its PMDT targets. To ensure an uninterrupted supply of medicines for all patients, the NTP, with support from SIAPS, quantified the additional medicines needed using QuanTB software. The QuanTB tool was developed by SIAPS and adopted by the NTP to forecast and quantify medicines for the PMDT. As part of the quantification process, SIAPS also provided assistance to the NTP in reviewing DSM reports to ensure the quality of data and improve the current DSM reporting template in Excel to include the new anti-TB medicines.

As part of the ongoing SIAPS support to increase access to quality TB medicines in the country through a robust registration system, technical assistance was provided to assess the FDA's

current registration information system. SIAPS conducted a situation analysis of the regulatory information management system of Philippines' FDA and develop recommendations and an action plan based on the findings for a more robust regulatory information management system, including the required information technology to manage licensing drug establishments and registering pharmaceutical products, as well as other FDA operations. During the assessment, relevant guidelines and SOPs were reviewed, key informant interviews and workshops were conducted, and feedback was collected from the Director General and key FDA officers and staff.

Objective 3. Capacity of the NTP to Deliver Pharmaceutical and Laboratory Services Improved

SIAPS continues its support of the NTP and FDA to strengthen the PV system and improve the FDA's medicine safety system. Starting with a focus on patients enrolled in the nine-month multidrug-resistant TB (MDR-TB) treatment regimen and bedaquiline operational studies, SIAPS built the PV capacity of the FDA and the Lung Center of the Philippines and improved the handling of adverse drug reaction reports (e.g., evaluation, analysis, signal detection, causality assessment, risk management, and communication). SIAPS also reviewed and built the FDA's capacity to further improve the reporting of serious adverse events from the nine-month MDR-TB treatment.

SIAPS also conducted workshops to draft the following quality work procedures that serve as guidelines for the FDA PV unit: signal management in PV, safety communication, preparing reports for submission to the National Drug Advisory Committee, and information sharing with market authorization holders and public health programs. To support the re-establishment of the FDA's National Drug Advisory Committee, SIAPS reviewed and provided guidance in the development of the National Drug Advisory Committee terms of reference.

SIAPS reviewed and provided comments to the FDA on the revision of the administrative order for its National Pharmacovigilance Program. SIAPS supported the FDA in drafting an action plan to further strengthen the PV system.

SIAPS is supporting the FDA in the adoption of the Pharmacovigilance Monitoring System (PViMS) in the Philippines. PViMS is a web-based application that streamlines and simplifies the data collection and analysis of PV information. SIAPS supported several activities in preparation for the adoption of PViMS, including system testing with the FDA PV unit and the LCP NCPR research team and a workshop to develop implementing guidelines for PViMS use with the FDA, NTP, LCP NCPR, KMITIS, Philippine Business for Social Progress, and Technical Assistance to Support Countries.

With a recommendation from the NTP, the draft implementation guidelines for PViMS use will serve as a basis to draft the implementing guidelines on PV for the NTP network.

SIAPS provided support in completing application forms for second-line anti-TB medicines to be included in the Philippine National Formulary. During this quarter, five application forms were

submitted and presented to the National Formulary Executive Council for inclusion. Approval was granted for all five medicines on September 5, 2016.

As requested by the NTP, SIAPS participated in the revision of the PMDT implementing guidelines and administrative order. SIAPS provided input on the logistics management and PV section of the documents.

SIAPS also provided input and recommendations for the revision of the Philippine Action Plan to Control Tuberculosis (2010–2015). SIAPS provided input on the regulation and supply management of pharmaceuticals, laboratory supplies, and services.

Constraints to Progress

Relevant input from stakeholders was not received by the agreed-upon timeline for PViMS implementation.

Sierra Leone Ebola Portfolio

Goal: Strengthen pharmaceutical management systems for ensuring the availability of quality pharmaceutical products and rational use to achieve desired health outcomes

Overall Quarter Progress

SIAPS Sierra Leone continued to consolidate its position within the Free Health Care (FHC) supply chain partnership forum, including the facilitation of related project activities implemented by other partners. SIAPS provided advocacy and technical support to the “reverse logistics for expired drugs” activity that was implemented by CAIPA with UK Department for International Development (DFID) support. A project retreat organized with the Directorate of Drugs and Medical Supplies (DDMS) brought together managers from the Pharmacy Board of Sierra Leone (PBSL) and the Pharmaceutical Society of Sierra Leone. This provided coordination opportunities for key players in the sector and also finalized resolution of many outstanding issues around SIAPS project implementation.

An additional nine districts were covered with continuous results monitoring system (CRMS) implementation during this quarter. Data are now being cleaned and uploaded for analysis. Following the required CRMS review meeting in each district, draft reports for the Bo and Bombali districts are close to final.

The identified National Quantification Committee and program-specific technical working groups have now been formally authorized by the Chief Medical Officer. The FHC forum also agreed that SIAPS could proceed with quantification of the DFID funded procurement for 2017 using Quantimed as the electronic tool. This quantification process is now well under way in collaboration with the Clinton Foundation HIV/AIDS Initiative and the DDMS.

The organogram for the DDMS, including the terms of reference, was further deliberated during the project retreat with DDMS and is awaiting endorsement by the Ministry of Health and Sanitation (MoHS).

A sample version of the National Essential Medicines List is being printed, but the document still requires a final review by a small group of technical partners, including SIAPS, before it can be printed and disseminated.

Objective 1. Strengthen Pharmaceutical Management Systems for Ensuring the Availability of Quality Pharmaceutical Products and Rational Use to Achieve Desired Health Outcomes

Consensus has been reached on the remaining structural issues regarding the organogram. The required senior management authorization process will be put in motion by the DDMS. Because capacity building is an associated component of SIAPS technical assistance for strengthening DDMS governance and leadership, SIAPS has initiated planning to provide leadership training through the leadership development program for DDMS managers, including district pharmacists, and possibly some PBSL officials.

SIAPS also worked with the DDMS to identify critical supplies required to implement the new organizational structure and is in the process of finalizing a list for procurement.

SIAPS was one of a select group of partners invited by the MoHS to help review access to supplies for Ebola survivors. Quantification has now been carried out in readiness for procurement. SIAPS also collaborated with John Snow International/Advancing Partners & Communities (JSI/APC), whose main program focus includes access to services by Ebola survivors, so that during the CRMS implementation their target facilities will be monitored for access to identified supplies.

Significant progress was made in finalizing a “Quick Procedure for Reverse Supply Chain Management/Logistics of Expired and Unusable Pharmaceuticals for Public Health Facilities and District Medical Stores in Sierra Leone” in collaboration with the DDMS, PBSL, and CAIPA. Expired medicines from eight districts were collected by CAIPA and returned to the central level for disposal.

Consignments of expired medicines from two districts were sorted and certified by the DDMS and PBSL. Verification and Certification Officials from the Ministry of Finance and the Auditor General’s Office provided oversight. Destruction will occur as soon as this has been authorized, hopefully early in the next quarter. With the lessons learned during this first phase, this process going forward will be much faster.

Partner Contributions

The DDMS continues to provide dedicated office space to SIAPS. Immediately after the recent joint project retreat, this was valuable to move forward the many issues designated for follow up. The space is also used by staff on travel duty.

Constraints to Progress

The main constraints continue to be the numerous health sector program implementation activities that draw on the time of the same personnel. The DDMS district health teams face many bureaucratic challenges. Some of these challenges often present themselves at the last minute, leading to the cancellation of important events. For example, the CRMS review meetings in Bombali and Bo were to be immediately followed by an important information sharing meeting at the national level. This would have involved representation at the highest level, but the event was cancelled the previous day because of a major breach of the pharmaceutical supply chain that is being investigated at all levels.

Objective 2. Strengthen Supply Chain Management from District to Primary Health Unit Level

The CRMS activity was rolled out in an additional nine districts during this quarter, including 726 of the 812 health facilities and four of the 10 hospitals in the western area. These four hospitals provide the opportunity to study and understand CRMS indicators at both primary and

secondary health facilities. The CRMS cumulative coverage now includes 11 districts and 927 health facilities, representing an 85% CRMS activity roll-out nationwide.

Partner Contributions

The District Health Management Teams (DHMTs) continue to give full support and senior management time to the CRMS activity, primarily in the form of secretarial services, the use of conference rooms where available, and vehicles for travel to health facilities. However, resource constraints are often a significant problem. For example, in the Bonthe District, the DHMT does not even have a conference room, and the CRMS intervention planning meeting was therefore held in the District Medical Officer's office.

Constraints to Progress

The constraints to progress were the same as those noted under Objective 1.

Objective 3: Utilization of Information for Supply Decisions is Increased

There has been a rapid uptake and utilization of information obtained since the introduction of the CRMS into the country. For example, the initial survey of expired products accumulated at a few health facilities was used to sensitize the FHC partners' forum to move forward with a more structured and organized collection and return these products for disposal at the central level.

This will in turn feed into the SIAPS ongoing development of a national guideline for pharmaceutical waste management.

Data collected on consumption is now been uploaded into Quantimed for quantification of 2017 FHC pharmaceutical supplies. It is hoped that this will also inform decision making regarding the pros and cons of strategic changes from a "push" to "pull" supply system to respond to the actual demands of the health facilities.

Partner Contributions

The DDMS remained fully engaged with project activity by convening, coordinating, and providing a venue for meetings to move the quantification activity forward.

Constraints to Progress

A decision by DDMS as to whether to use "Channel" or "mSUPPLY" as the electronic software for the logistics/pharmaceutical management information system is still not finalized and could present a medium- to long-term impediment to a well-functioning system that paper-based tools, such as RR&IV and treatment registers, will rely on for good supply chain decision-making.

South Africa

Goal: Strengthen the capacity of pharmaceutical systems at all levels to support the South African government priority health programs and initiatives to improve health outcomes

Overall Quarter Progress

During PY5Q4, SIAPS continued supporting the National Department of Health (NDOH) while handing over relevant documentation and systems. SIAPS exceeded targets for all 19 indicators tracked in this quarter. Examples include: 18 policy documents to support good governance were developed, reviewed, revised, and finalized—these exceeded the life of project target of three documents; 44 of a target of 43 Essential Medicines List (EML) chapters were reviewed for academic details; 269 of a target of 200 health care professionals completed the Leadership Development Program (LDP) or Pharmaceutical Leadership Development Program (PLDP); and 453 of a target of 435 facilities have RxSolution installed and in use.

A significant achievement during this quarter was completing the national strategy for improved availability of health products, which is undergoing final review prior to being presented at the National Health Council (NHC). In addition, a planning meeting was held for the Forum to Promote Transparency and Multi-Stakeholder Engagement Regarding Medicine Availability; this will contribute to improving access to and availability of medicines through enhanced transparency, equity, efficiency, responsiveness, and accountability in the supply chain. SIAPS supported the NDOH to develop draft terms of reference (TORs) to govern the multi-stakeholder forum and facilitated a workshop attended by diverse stakeholders to plan establishment of the forum.

All LDP/PLDP activities have been closed. The program results and best practices were documented in a technical brief and a series of technical reports and success stories.

The web-based pharmaceutical services management dashboard was finalized during this quarter. Provincial and NDOH staff were trained on the use of the dashboard, which was handed over to NDOH. Good progress was made on the development of the Essential Medicines Electronic Access (EMeA) system.

The roll-out of RxSolution accelerated in PY5Q4, with the system now installed and in use in 453 facilities. The role of RxSolution was acknowledged during the formal handover of the source code to the minister of health. SIAPS will leave a legacy of its work in developing and supporting RxSolution legacy as the NDOH plans to continue its implementation and management. RxSolution is also linked to the hospital dashboard, forming part of the National Surveillance Centre with the capacity to provide data on medicine availability from 162 facilities (exceeding the NDOH Annual Performance Plan [APP] target of 75). There has been a significant improvement in medicine availability as reported on the dashboard for facilities in Gauteng Province (GP) and Limpopo Province (LP), following SIAPS support. The dashboard was used to identify facilities with low stock availability and interventions instituted. SIAPS provided such technical assistance to the Chris Hani Baragwanath Academic Hospital with medicine availability improving from less than 70% to between 80% and 90%.

The study “Using Electronic Pharmacy Dispensing Data for Surveillance of Out-patient Antibiotic Consumption and Monitoring of Antibiotic Prescribing Practices at District and Provincial Hospitals in the South African Public Sector: a Feasibility Study in North West Province” was finalized and presented to provincial and national stakeholders including representatives of academic institutions. The study has provided useful insights to each facility and demonstrated the feasibility of extraction and analysis of RxSolution data.

Objective 1. Pharmaceutical Sector Governance Strengthened

In 2015, SIAPS began working with the NDOH and SCMS to develop a national strategy for improved availability of health products. During the quarter, the draft strategy was finalized and presented at the NHC Subcommittee on Pharmaceutical Services. Provinces provided comments on the strategy, which is being revised and reviewed prior to being presented at the NHC. A comprehensive glossary of terms was prepared and various concept notes revised. A concept note on rational medicine use was developed.

During PY5Q4, the web-based national pharmaceutical services management dashboard was finalized and successfully migrated to a new domain (www.perseus.org.za) which went live on August 11, 2016. This significant innovation replaces the Excel-based tool developed in 2014. Provincial and national users were trained on the system, which allowed users to provide input on the system and strengthened their sense of ownership. SIAPS provided further technical assistance to NDOH in monitoring data entry. The user guide, technical guide, and source code were handed over to NDOH. Involvement of NDOH staff in the development and training process has been critical in facilitating country ownership.

SIAPS worked with the Directorate: Affordable Medicines in drafting several policies relating to pharmaceutical services. During this quarter, the policy dealing with the allocation of medicine into therapeutic classes was presented to the NHC’s Technical Advisory Committee. The policy for procuring medicines that are not registered in South Africa was presented at the NHC Subcommittee on Pharmaceutical Services and further comment provided by the provinces. Comments will be incorporated and the policy prepared for presentation to the NHC. SIAPS also worked closely with the Directorate to draft a policy to outline standardized criteria for the submission and review of named-patient motivations to promote equitable access to non-essential medicines.

A major achievement of the SIAPS Program was the drafting of a policy for issuing authorizations to allow nurses to perform functions, including prescribing, in terms of the Nursing Act 33 of 2005. The policy was signed by the director general in Q3 and disseminated to stakeholders. SIAPS joined with the NDOH in a team effort to implement the policy, which included describing the competencies of nurses to perform these functions and the development of software to support the process. During this quarter, a tool was developed by SIAPS to assess the current situation regarding the issuing of authorizations to nurses.

In the previous quarter, NDOH, in collaboration with SIAPS, facilitated a workshop to explore practical approaches to designing and implementing interventions to improve access to chronic

medicines. In Q4, SIAPS worked with NDOH and other partners on developing a guideline document for pick-up points for chronic medicine. SIAPS was part of a delegation that did a presentation to the Practice Committee of the South African Pharmacy Council (SAPC) on the Central Chronic Medicines Dispensing and Distribution (CCMDD) Program, as well as a subsequent consultative workshop with SAPC to address legislative barriers to access to medicine. All parties involved agreed on the key principles to guide revision of legislation. Ongoing support was provided on CCMDD reporting and data quality assurance. A poster on the roll-out of the CCMDD in KwaZulu-Natal was presented at the 21st International AIDS Conference.

SIAPS supported the NDOH contracting unit in finalizing and handing over the TORs for the Bid Evaluation Committee and Bid Specification Committee. Good progress was made during the quarter to establish the Forum to Promote Transparency and Multi-Stakeholder Engagement Regarding Medicine Availability. The forum will contribute to improving access to and availability of medicines through enhanced transparency, equity, efficiency, responsiveness, and accountability in the supply chain. SIAPS supported the NDOH to draft TORs to govern the multi-stakeholder forum. A workshop was held with multiple stakeholders to plan establishing the forum. The TORs will be finalized based on the inputs from stakeholders.

SIAPS provided technical support to align contracting processes with the web-based tendering model introduced by the National Treasury. This model will replace the tender management model. Support included:

- Structuring and codification of tender items to fit into the new system
- Orientating NDOH staff on the new system
- Analyzing tendering processes to facilitate transition and optimize functionality of the tender module to meet NDOH requirements in the interim phase
- Supporting publication of three tenders (Injectables–HP06, Drops and Inhalers–HP07, and Semi-Solids–HP08), in the web-based system in parallel to the tender management module
- Revision of special conditions of contract of HP07

SIAPS also supported the publication and bid processing of three supplementary tenders through the tender management module namely, HP09/1 for tablets, HP04/1 for oncology items, and HP13/1 for ARVs.

SIAPS provided technical support to the Department of Correctional Service (DCS) to develop a pharmaceutical services policy. The draft policy was finalized and will be sent to the Minister of Justice and Constitutional Development for approval. SIAPS also provided technical assistance in developing a draft strategic framework to assist with implementation of the policy.

Partner Contributions

- SCMS: Contract demand forecasting analysis, project planning for tenders, contract management for medical-related contracts, work on NDOH strategy, and concept notes
- Aurum Institute: DCS pharmaceutical policy

- Health Systems Trust and Project Last Mile: CCMDD presentation to SAPC, M&E and pick-up point guideline document

Constraints to Progress

- Staff capacity in the Contracting Unit of NDOH in that it has always been a challenge throughout the lifespan of SIAPS to fully transfer skills to the unit
- Challenges in meeting the NDOH's performance plan objective of awarding tenders eight weeks prior to starting date because of factors beyond the unit's control

Objective 2. Capacity of Personnel for the Provision of Pharmaceutical Services Enhanced

In PY5Q4, all capacity-building efforts to enhance the skills of pharmaceutical service personnel have been closed and handed over to the relevant stakeholders.

Aspects of the LDP course content and facilitation material were transitioned to Sefako Makgatho University (SMU). Technical reports on all PLDP/LDP activities were completed. A series of success stories and a technical brief were also finalized to document the key lessons, best practices, and results of PLDP/LDP. A project undertaken by one of the SMU postgraduate students, "Implementation of the use of medicine warning/advisory labels by pharmacists/post-basic pharmacist assistants at Mafikeng Provincial Hospital Pharmacy" was presented at the Public Health Association of South Africa Conference held in September 2016.

In PY5, SIAPS provided field-based practical experience as part of development of the module on Medicine Supply Management (MSM) at the University of Western Cape (UWC) for both the Winter School and the online module. Nine of the 14 sessions for the Winter School training and the online course were developed by the university with input from SIAPS. Modules relating to laws, policy and regulations, procurement, distribution, pharmaceutical management information system, and finance were developed by SIAPS. This approach ensured that the university retains ownership of the process.

All training materials have been handed over to the university. The university is finalizing the online MSM modules which commenced during the quarter.

Two success stories and 10 summaries of SIAPS modules were revised as part of the documentation presented during the SIAPS project close out. The close-out material for collaboration with universities including university slide decks, summaries of SIAPS modules, and success stories were finalized.

Objective 3. Use of Information for Decision Making in Pharmaceutical Services Improved

During PY5Q4, the EMLT was renamed the EMelA system and now has the domain www.emela.org.za. The standard treatment guidelines (STGs) needed to be digitalized before being imported into EMelA. In July, SIAPS supported digitalization of all 23 chapters of the

2013 Hospital Level Pediatrics STGs and EML. The service provider finished developing the five modules (recruitment, communication, committee management, review, and editorial) and two master data sets (stakeholders and health products). Registration of selected users on EMelA who are to test the system opened on September 5. Users are recorded on the stakeholders' database, which facilitates timely communication between NDOH and the relevant audience. The tool was presented at the NHC Sub-Committee on Pharmaceutical Services meeting in August. Since the inception of the project, NDOH took full ownership of the system and is committed to expand EMelA functions to ensure its continuous relevance. Following the user acceptance testing period, EMelA will go live on October 20 and be handed over to NDOH. SIAPS continued to support the development of the Tender Management Module and Master Procurement Catalogue (MPC). Handover discussions were held with SCMS and the NDOH.

The hospital dashboard is functional with 162 facilities able to submit data to the dashboard with the APP targets having been met.

By PY5Q4, SIAPS had installed RxSolution at 577 sites, including hospitals, PHC facilities, sub-depots, district offices, and tertiary institutions. This is an increase of 135 sites from the 442 sites reported in PY5Q3. There are 453 facilities that are actively utilizing RxSolution with the remainder in the process of incorporating RxSolution into their workflow. There are 36 sites that are in the process of installing RxSolution. SIAPS trained 395 people on the use of RxSolution in Q4, including pharmaceutical staff, IT officials and identified super users. The aim is for IT and super-users to support the system post-SIAPS. SIAPS has also updated training manuals for the latest version of RxSolution.

SIAPS provided support on the use of RxSolution at 12 facilities in GP, one in Free State Province (FS), five in LP, and one in Mpumalanga Province (MP).

SIAPS finalized the review of the RxSolution Report Catalogue to be used as a guide for effective use of RxSolution generated reports and assist informed decision making. SIAPS conducted consultation workshops on use of RxSolution generated reports in KwaZulu-Natal (KZN) and MP. This strategy helped identify RxSolution super-users within these provinces and promote ownership and sustainability.

Provincial Medicine Procurement Units (PMPUs) that utilize RxPMPU were established in GP, LP, KZN, North West (NW) and FS. All 35 sites identified for PMPU implementation in FS have been upgraded to the latest version of RxSolution.

All SIAPS management information system information will be documented and handed over to NDOH by the end of November 2016. The documentation includes the host environment to them, URLs and source code.

The NW study analysis was completed and the results discussed with provincial representatives. The key findings were subsequently disseminated to provincial and national stakeholders in collaboration with provincial representatives. The study report was finalized and submitted to editorial. The team is working on a manuscript for submission to a peer reviewed journal as

well as abstracts for submission to conferences. Key findings of the study included the following:

- More than a third (39%) of patients received an antibiotic prescription during the two-year study period
- A third of patients who received an antibiotic prescription received prescriptions with two or three antibiotics
- Prescriptions had up to eight antibiotics; including two penicillins and two quinolones prescribed simultaneously

The study demonstrates the feasibility of extracting data related to dispensing of antibiotics from the RxSolution system for study and presentation of findings to enable making decisions about antibiotic stewardship in the public health sector. The findings also indicate that RxSolution data can be used to conduct medicine utilization studies. The study however highlighted gaps in use of the RxSolution dispensing module where capturing additional information such as diagnoses would help with evaluating whether prescribing and dispensing of medicines is in line with clinical guidelines.

In PY5Q4, SIAPS presented the benefits of using the ABC/VEN matrix as a routine monitoring tool to the provincial pharmaceutical services. During the Gauteng Pharmacy Managers Conference in 2015, the province undertook to implement quality improvement projects at facilities using the ABC/VEN analysis as a monitoring tool. During the data analysis and medicine use evaluation workshop in PY5Q2, pharmacy managers, drug controllers, and store managers analyzed their institutions' ABC/VEN analysis for April-November 2015 and developed quality improvement interventions. In July, 16 institutions submitted their post-intervention ABC/VEN analyses to the provincial office. Eleven institutions worked with their respective PTCs to conduct medicines use evaluations, resulting in improved use for the 13 identified items with an estimated 51% decrease in spending per month. Three institutions presented their results at the Gauteng Pharmacy Managers Conference in September 2016.

Constraints to Progress

- Stock pushed immediately to demanders reflecting unavailability on the hospital dashboard
- Data submitted manually to the hospital dashboard from all Western Cape province facilities
- LP hospitals no longer pushing data to dashboard due to connectivity challenges
- Only half of the reporting facilities are able to easily send data to the hospital dashboard
- There are continuous requests for dashboard developments
- The main challenge experienced in conducting the NW study was the unreliability of the date of birth captured in RxSolution resulting in the age variable not being trustworthy

Objective 4. Pharmaceutical Services Improved to Achieve Desired Health Outcomes

Support in PY5Q4 was guided by the performance of facilities on the hospital dashboard. Activities focused on improvement of data quality and integrity and information sharing sessions with users. Overall, 10 facilities in LP, GP, and MP were assisted with data clean up, including aligning institutional medicines list with the MPC, deactivating obsolete items from the RxSolution database, and overall improving the integrity and quality of data overall. In addition, an information-sharing session regarding the hospital dashboard was held with the provincial pharmaceutical services in KZN. SIAPS worked with the NDOH team and other stakeholders in ensuring optimal functionality of the dashboard, and overall transitioning of the project. NDOH was provided with dashboard slides on a weekly basis.

During PY5Q4, SIAPS continued working closely with the Essential Drug Program (EDP) and the KZN Provincial PTC to move toward evidence-based medicines selection. The application form calling for the Tertiary and Adult Expert Review Committees applications was disseminated in PY5Q3. SIAPS provided follow-on support to the EDP leading to the recommendation of members for both committees.

SIAPS provided technical support to the tertiary/quaternary EML to develop a cost-effectiveness model and budget impact analysis for the use of biologicals (etanercept, adalimumab, and infliximab) in rheumatoid arthritis. The health economics model and budget impact analysis is being developed. Following discussions with experts in the field, the model was expanded to include an evaluation of the use of rituximab and leflunomide as a possible cost-effective alternative to the biologicals when treating refractory patients. The consultant support on this activity has been handed over to Right to Care, a local NGO, to ensure continuity.

SIAPS provided input into the decision making of the Selection and Formulary Subcommittee of the KZN Pharmacy Therapeutics Committee (PTC). In PY5Q3, SIAPS collaborated with the subcommittee to conduct an affordability calculation for a named-patient application and a search for quality of life values for decision making for a named-patient application. SIAPS also supported the development of a protocol for named-patient use of an item for the neurology unit.

SIAPS collaborated with the EDP and GP PTC toward the implementation of STGs for improved use of medicines. In PY5Q3, the fourth edition of the 2015 Adult Hospital Level EML and STGs were finalized and published on the NDOH website. A mobile application (app) of the Adult EML and STGs is being developed by the Open Medicine Project on behalf of the EDP. SIAPS supported the unit with a second-round quality check on eight chapters loaded onto the app format.

During PY5Q4, SIAPS worked with the EDP to transition SIAPS technical assistance to Right to Care. SIAPS facilitated the collaboration between NDOH and GP DOH who developed the first PTC guidelines. The Guidelines for Implementation of PTCs in GP, developed with SIAPS support, will serve as the basis for developing guidelines for implementing the national policy on the establishment and function of PTCs, also developed in collaboration with SIAPS. A representative from GP DOH is working with NDOH and Right to Care on the development of

the national PTC guidelines ensuring strong country ownership and sustainability. The PTC Audit and Geomapping tool initiated by SIAPS will be taken forward by NDOH and Right to Care to audit and map PTCs in South Africa.

SIAPS worked with the GP PTC Rational Medicine Utilization Subcommittee to assess implementation of the 2014 edition of the PHC STGs published in July 2015. One way to monitor is to compare the quantities of medicines issued pre- and post-publication of the guidelines. A decrease in the quantities issued is expected for the medicines deleted while an increase should be seen for new medicines added. A comparative analysis of the quantities of medicines issued to primary health care facilities over February–May 2015 versus February–May 2016 was conducted for selected medicines from chapters covering the gastrointestinal tract, sexually transmitted infections, and respiratory problems. The results show an increase in the use of medicines newly added but no decrease for the ones deleted from the STGs. More work needs to be done to increase awareness of and strengthen implementation of the new guidelines.

During PY5Q4, a representative from the UWC School of Pharmacy presented the findings from the medicine use evaluation conducted in Western Cape in collaboration with the Western Cape Department of Health and SIAPS at the 76th FIP World Congress 2016. A total of 7,113 aspirin prescriptions from 147 facilities were reviewed. More than 80% of all prescriptions for aspirin were from clinics, community day centers, and community health centers. Overall, only 21% of prescriptions were according to STG recommendations. Tertiary and regional hospitals performed the best with approximately 50% of the prescriptions in line with the STGs. Adherence to STGs was much lower and ranged from 16% to 20% for primary health care level facilities, reflecting the impact of the inappropriate guidelines that were promoted together with national guidelines.

SIAPS supported preparation for the launch of the inauguration of the first Ministerial Advisory Committee on Antimicrobial Resistance (AMR), including speaking notes for the Minister of Health and Director General for Health, a media advisory, and press release. SIAPS's provided inputs on the draft version of *A Practical Guide to Antimicrobial Stewardship* in South Africa to the EDP unit. SIAPS provided technical support to KZN Provincial Pharmaceutical Services in the first AMR task team meeting for the province.

In PY5Q4, SIAPS provided further input on developing a poster and pamphlet for the “Use Medicines Safely” concept for 2016 Pharmacy Week including input on the isiXhosa translation for the pamphlet.

Partner Contributions

Right to Care will be supporting the EDP with PTC work. SIAPS has transitioned the PTC material to Right to Care.

South Sudan

Goal: Ensure the availability of quality pharmaceutical products and effective pharmaceutical services to achieve desired health outcomes

Overall Quarter Progress

On July 8, 2016, violence and civil unrest broke out in South Sudan. In response, the United States Embassy issued an evacuation order for non-essential staff, interrupting the implementation of SIAPS activities. Prior to the unrest, USAID requested that SIAPS revise its work plan and budget. Subsequently, USAID asked for revised cost estimates that reflect activity feasibility from August 2016 to the close of the program in December 2016. SIAPS South Sudan evaluated the work plan and determined which activities were essential for a smooth transition to the Global Health Supply Chain (GHSC), which will begin in December 2016. Given the current security situation, it is likely that the GHSC may be delayed. Therefore, SIAPS wants to ensure that essential activities to support medicine supply, distribution, and access in South Sudan do not experience any major support gaps. The unrest has affected all activities during this quarter, and needed funds were reduced. SIAPS provided a narrative that included a short summary of activities and major work plan changes. The total amount of funding needed to cover SIAPS operating costs through the close of the program is USD 1,504,267, or USD 632,404 for the activities from July to October 2016 plus USD 871,863 for expenses and commitments that dipped into forward funding. Projected activities include the de-junking of one county medical warehouse in Yambio (Western Equatoria State (WES)), where there is no conflict. SIAPS conducted monthly data collection and supportive supervision visits for the Logistic Management Unit (LMU) dashboard from three counties in the Central Equatoria State (CES). This activity was completed by telephone as travel was unsafe.

SIAPS also provided ongoing monthly utilities and office support to National Malaria Control Program (NMCP). The project continued to finalize the malaria control policy and planned to print and distribute 300 copies of the policy by the next quarter. SIAPS also finalized and printed 500 copies of the malaria newsletter. Dissemination will be done through Juba-based partners. The project planned to provide storage and distribute 1 million USAID-procured malaria rapid diagnostics test (RDT) kits to the eight health pool fund (HPF)-supported states. SIAPS also completed the distribution of long lasting insecticide treated nets (LLINs) to the six HPF-supported states (Eastern Equatoria, Lakes, Northern Bahr El Ghazal, Unity, Warrap, and Western Bahr El Ghazal). This was already under way before the war broke out. Due to the disruption and the subsequent time constraints, SIAPS will not be able complete some activities before December 2016. Therefore, these activities have been removed from this revised work plan. SIAPS plans to hand over these activities to the GHSC program along with other activities that will be transitioned to the new program.

Objective 1. Pharmaceutical Services Improved to Achieve Desired Health Outcomes

SIAPS provided supportive supervision to four primary health care centers and five primary health care units. SIAPS also conducted supportive supervision visits in county medical stores in Nzara, Tambura, and Yambio (WES) and Tambura and Yambio (CES). During these visits,

SIAPS collected continuous results monitoring and surveillance (CRMS) data; provided on-the-job training and mentored dispensers based on identified needs; conducted medical store re-arrangement; and distributed standard storage checklists, thermometers, and temperature charts. This was done to improve the storage of pharmaceutical commodities in the two states. The CRMS data collected showed that two of the nine health facilities visited had stock-outs of tracer medicines at the time of the visit. All three county medical stores that were visited received feedback on previously submitted data, and all had available stock of tracer medicines. In addition, seven of the nine health care providers implemented their post-training action plans during this quarter.

SIAPS, USAID, and the United Nations Development Programme (UNDP) conducted a supervisory visit to the UNDP warehouse in Juba. The team was briefed on the operations at the warehouse and ongoing plans to integrate malaria, HIV, and tuberculosis warehousing as well as areas of collaboration between the President's Emergency Plan for AIDS Relief and the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) for commodities management.

To improve availability and use of LLINs for pregnant women and children, SIAPS distributed 211,350 LLINs to four HPF-supported states, including 42,300 LLINs to Bentiu in Unity State, 45,650 to Rumbek in Lakes State, 58,900 to Torit in Eastern Equatoria State, and 64,500 to Kuajok in Warrap State. To ensure coordination, SIAPS sent distribution plans to HPF-supported partners and state ministries of health in the respective states to inform them of the arrival of LLINs.

SIAPS participated in a malaria taskforce subcommittee meeting to design a response plan to stock-outs of artemisinin combination therapy (ACT) in conflict-affected states (i.e., the Western and Northern Bahar El Gazal, Lakes, and Warrap States). According to morbidity data and projections obtained by the World Health Organization (WHO) from the respective counties, the specified ACT quantities are expected to last for three months. The remaining two counties not supported by the Global Fund in the four affected states will receive support from the United Nations Children's Fund and WHO through implementing partners working in the area.

SIAPS provided technical assistance to the State Ministry of Health in the newly formed Gbude State in the WES to create a subcommittee for the three state hospitals of Yambio, Nzara, and Tambura. The subcommittee is expected to strengthen management by providing technical oversight and supervision to the three state hospitals to improve pharmaceutical services and achieve desired health outcomes.

Partner Contributions

SIAPS collaborated with USAID and UNDP to conduct a supervisory visit to the UNDP warehouse in Juba. SIAPS also collaborated with HPF to distribute LLINs in six states.

Constraints to Progress

- Dispensers and storekeepers had limited skills for using both the standard storage checklist and the temperature chart, and SIAPS mentored them on the proper use of both tools.

- Labeling dispensed medication and frequent updating of stock cards were challenging to some staff in the health facilities that were visited. SIAPS mentored the facility staff in these areas.

Objective 2. Capacity for Pharmaceutical Supply Management and Services Increased and Enhanced

SIAPS reviewed and incorporated inputs from the Ministry of Health into the public sector pharmaceutical management training manual. SIAPS delivered a three-day pharmaceutical management training workshop to 25 health care workers in Juba for the CES. The purpose of the training workshop was to strengthen the pharmaceutical management capacity of health workers in Juba County. The participants developed 16 action plans during the training.

Objective 3. Information for Decision Making Challenge in the Pharmaceutical Sector Addressed

As part of the LMU, SIAPS presented this quarter's stock status report, which was generated from the recent innovative data analysis systems (South Sudan pharmaceutical dashboard) to the Director General of Pharmaceutical Services. The dashboard is being piloted with data from three counties in the CES (Lainya, Morobo, and Kajo Keji). Data generated from the dashboard are used to determine the availability of the tracer medicines. To expand LMU activities, SIAPS will work the United Nations Population Fund and HPF to collect stock status reports from five county warehouses in the WES and Northern Bahr el Gazal.

As the secretariat, SIAPS continued to coordinate biweekly pharmaceutical technical working group (PTWG) meetings. During this quarter, SIAPS coordinated two PTWG meetings on June 23 and July 7, 2016. These meetings are important for information sharing and decision making with regard to pharmaceutical supplies. During these meetings, SIAPS presented information on the stock status of malaria commodities across the country.

Objective 4. Scale-up of Malaria Interventions Accelerated, Better Coordinated, and Documented

SIAPS and Population Services International supported the NMCP to conduct interviews for an international medical entomologist. This candidate will provide technical support to the NMCP to conduct an integrated vector mapping and susceptibility study. This study is expected to provide information for decision making in the area of vector control.

SIAPS also supported the NMCP to revise the terms of reference for the recruitment of a malaria case management specialist, behavior change and communications specialist, monitoring and evaluation specialist, and regional monitoring and evaluation officers.

SIAPS and NMCP technical staff attended a one-day integrated vector management training workshop on July 4, 2016, that was organized by the Mentor Initiative in Juba. This training was to orient program staff on the ongoing vector control activities in South Sudan.

As the secretariat for the Malaria Technical Working Group, SIAPS conducted weekly taskforce meetings to discuss the current malaria upsurge in the country. SIAPS also supported the NMCP and malaria-implementing partners to update the commodities gap analysis in response to the reported malaria upsurge in August 2016.

Working with WHO, SIAPS supported the NMCP in the recruitment of a lead consultant to conduct the 2016 malaria indicator survey.

SIAPS revised the 2016 work plan submitted to USAID to include the distribution of 1 million RDTs to eight HPF-supported states. The RDTs will arrive in September/October 2016. SIAPS is continuing to distribute LLINs.

Constraints to Progress

Attracting senior staff to fill the NMCP specialist positions is very challenging, and advertisements were put out through various media platforms to fill the positions.

Swaziland

Goal: The goal of the SIAPS program in Swaziland is to ensure the availability of quality pharmaceutical products and effective pharmaceutical services to achieve desired health outcomes for HIV/TB care and treatment

Overall Quarter Progress

Availability of quality assured ARVs and the rational use thereof continues to be an area of focus for SIAPS as the country implements strategies toward an AIDS-free generation. SIAPS has continued to support the Swaziland National AIDS Program (SNAP) and the Central Medical Stores (CMS) to plan and mobilize resources in anticipation of the Test and Start Initiative. This is a contribution to the global 90-90-90 goals wherein SIAPS contributes to the MOH achieving the first two 90s (HIV testing and ARV treatment). There was a stock-out of HIV test kits in July, but the situation was resolved with the delivery of an emergency consignment from USAID/PSM of Determine and Unigold kits. Funding constraints remain for SNAP.

SIAPS worked with SNAP to support scale-up of the Test and Start Initiative, which expands treatment access to all patients who test HIV positive. SIAPS supported SNAP to better understand the scale-up targets associated with the increased eligibility for treatment. Additionally, a comprehensive funding outlook was developed to determine if there would be any funding gaps for Test and Start. CMS was able to revise the supply plan, paying special attention to first-line ARV requirements in preparation for Test and Start.

The Government continues to experience some delays in allocation and disbursements of funds for the procurement of ARVs and other lifesaving medicines. SIAPS works closely with MOH and other partners to always achieve prioritization in the ordering process when insufficient funds are disbursed.

With the planned scale-up of patients on ARVs, special attention must be given to patient safety and rational use of these lifesaving medicines. The pharmacovigilance system established by SIAPS in 2013 is still being integrated into SNAP as part of quality management of patients. Currently, 4,176 patients are enrolled in the active surveillance system (June 2013–September 2016); 52% female, 48% male. There are 1,212 ADRs that have been reported with 68% being reported by patients on anti-TB medicines and 32% by patients on ARVs.

In preparation for the introduction of Test and Start, SIAPS worked with regional clinical partners to provide mentoring on good dispensing practices, inventory management, and ADR reporting. Central and facility data management has also been supported to accurately track the additional consumption of ARVs to inform procurement and annual forecasting.

The introduction of Test and Start will also require support for the laboratory commodity supply chain. SIAPS works with the national laboratory warehouse to forecast and plan resources for HIV test kits, CD4 reagents, viral load commodities, and related supplies. The laboratory continues to maintain 100% timeliness on their LMIS from the 15 laboratories.

Objective 1. Strengthen Governance in the Pharmaceutical Sector

SIAPS continued to support interventions that ensure that good governance principles are embodied across all pharmaceutical health systems components with adequate transparency and accountability.

The Medicines and Related Substances Control Bill and the Pharmacy Bill were both presented to the House of Assembly for final deliberations, and the Medicines Bill was approved for King's ascent by both houses of Parliament. SIAPS is working with the chief pharmacist to prepare a report to be submitted to the King for the ascent of the Medicines Bill. Enactment of the bill will initiate the establishment of a medicines regulatory authority (MRA). An interim unit has been established under the Office of the Chief Pharmacist to prepare the environment and carry out limited functions that will come under the MRA once it is established. The Pharmacy Bill was recommended for a joint House sitting which is expected to take place next quarter.

SIAPS has supported the Office of the Chief Pharmacist in monitoring narcotic importation and consumption to ensure rational use and an uninterrupted supply of opioid analgesics for palliative care and maternal and child health. This requirement was extended to the community pharmacy sector through inspection oversight that SIAPS supported in 12 pharmacies.

SIAPS has facilitated the process for drafting of terms of reference (TORs) for the technical working group (TWG) that will be appointed to lead the review of the Swaziland Pharmaceutical Strategic Plan which expires this calendar year. The TORs and proposed members of the TWG have both been approved by the MOH. The next step is to facilitate formal appointment of the members.

Support has been provided to various committees and structures to improve medicines availability, pharmaceutical service delivery, patient safety, and treatment adherence for people living with HIV. SIAPS supported and provided technical guidance in the development of the medicines quality control laboratory implementation plan that will ensure that there is adequate capacity to conduct quality assurance of imported medicines.

Currently, two institutions offer a pre-service pharmacy training program, however, the curriculum is not standard. The pharmaceutical recruitment and training task team chaired by the chief pharmacist has met to review all programs currently offered and proposed a minimum set of competency and quality standards for pharmacy training. This will also assist new institutions that may be interested in offering a pharmacy training program in the future.

SIAPS facilitated the alignment of the essential medicines list with the treatment guidelines for ART, anti-TB, anti-malarial, FP commodities, and opportunistic infection medicines to ensure that CMS procures the correct medicines. The third National Quantification Committee meeting was held to kickstart the health commodity quantification for the period 2017 to 2020. The output of the quantification exercise will inform the national budget forecast in October. The quantification will also incorporate the requirements for HIV Test and Start and viral load scale-up.

Work is ongoing to support the Swaziland Procurement Regulatory Agency (SPPRA) and the MOH Procurement Unit to strengthen the medicines procurement system. A consultant has been engaged to draft a procurement procedure manual that will consider the special requirements for medicines and laboratory commodities. A draft procurement system strengthening plan has been developed which will inform the interventions to improve the procurement functions of the MOH.

Constraints to Progress

The legislative process is lengthy, but maintaining relationships with key role players has helped ensure that the bills progress through the system.

Objective 2. Increase Capacity for Pharmaceutical Supply Management and Services

With the planned HIV treatment scale-up, pharmacy personnel skilled in good pharmacy practice and inventory management of ARVs and TB medicines are needed. SIAPS collaborates with regional clinical partners to improve inventory management and pharmacy practice at HIV treatment sites.

The majority of treatment sites have nurses responsible for pharmacy services, inventory management, and dispensing ARVs. SIAPS provides on-site trainings and mentorships to these nurses as part of human capacity development. A total of 27 health workers were trained on inventory management and RxSolution software troubleshooting and bug fixing and warehouse management. SIAPS also partnered with AIDS free/Elizabeth Glaser Pediatric AIDS Foundation to provide on-site training on stock management and passive adverse drug events reporting at clinics in the Shiselweni region.

A group of 8 warehouse officials were supported so they could attend a public health supply-chain management training and a study tour to South Africa, facilitated by Imperial Health Science's training academy. The program was aimed at:

- Equipping officers with essential skills in warehouse management as they are in the process of setting up and extending part of the current CMS warehouse
- Building skills in management and warehouse operations and gaining on-the-job warehouse experience (given the recent staff turnover at CMS)
- Empowering participants with insight into the latest approaches to improve warehouse management and ensure uninterrupted availability of health products

The lessons from this training will contribute to MOH's efforts to improve their distribution and warehousing system. Key performance indicators are currently being monitored to identify gaps as the country seeks to optimize its warehousing system.

During the quarter, SIAPS also provided mentorship at 15 ART treatment sites (5 hospitals, 4 health centers, 6 clinics) to 16 health care workers on rational dispensing of medicines, active surveillance, and inventory management through RxSolution.

With over 162,000 people on ARVs, a majority of them have been on treatment for longer than 12 months. It is important to ensure that patient outcomes are actively monitored and that all adverse events are identified and managed effectively. SIAPS implements a pharmacovigilance system at all treatment sites. Additionally, a sentinel surveillance system has been implemented at seven hospitals and health centers throughout the country. Support visits on the pharmacovigilance systems focus on improving data and general reporting. The support provided by SIAPS included:

- Monthly supportive visits and data collecting visits to all seven active surveillance sites
- Supportive and feedback visits to four health facilities
- Dissemination of ADR surveillance job aids to the seven active surveillance sites

Partner Contributions

Imperial Health Sciences facilitated a public health supply chain training for MOH warehouse personnel.

Constraints to Progress

Health facilities are facing serious staffing challenges. Mentorship is not enough to address the skills shortage in pharmaceutical services. Full time pharmacy employees are needed at clinics and other primary health care facilities.

Objective 3. Address Information Utilization for Pharmaceutical Management Decision Making

SIAPS continues to advocate and support initiatives to improve the use of information for decision making in the delivery of HIV care and treatment. Various tools are implemented in the country to support data collection and analysis in SNAP and the supply chain system. These tools include the electronic LMIS, RxSolution for inventory management, and ART Patient Management Record (APMR) for ART patient management. Support for these tools is carried out jointly by the MOH and SIAPS.

Swaziland hosted research experts from the Harvard Pilgrim Health Care Institute (HPHCI) and colleagues from Namibia and Arlington in a regional workshop to analyze ART and antibiotic dispensing patterns and outcomes. The data used in this workshop was extracted from the SIAPS-supported RxSolution/APMR (Swaziland) and the Electronic Dispensing Tool (EDT, Namibia). Additionally, the workshop focused on advanced data analysis methods to ensure high-quality analysis of extracted data and provide an opportunity for SIAPS and in-country partner teams to develop robust plans to document results. SIAPS Swaziland was assisted in finalizing a report on the factors associated with first-line to second-line ART regimen switching among adults on ART. The report analyzed data from RxSolution for 2014-2015. The

deliverables following the workshop were mainly a policy brief and a presentation on the results of the analysis of ART data in Swaziland. In the next quarter, SIAPS will finalize and formally disseminate results of this operational research to local stakeholders.

SIAPS' contract with Softworks, a software design firm, to provide support services on the Commodity Tracking System ended in August. Softworks trained SIAPS staff on application and database maintenance procedures to be implemented after contract expires. In line with SIAPS' transition plan, SIAPS will develop SOPs for system maintenance, which shall be handed over to MOH in the next quarter.

SIAPS supported the MOH Data Management Unit (DMU) at the CMS to provide feedback to 18 (42%) ART treatment sites. Further, 85% of ART sites managed to complete and submit an ART LMIS report for the quarter ending September 2016, illustrating a 3% decrease in performance from the quarter ending June 2016. The laboratory LMIS recorded a 100% reporting rate consistent with the previous quarter. Timeliness of reports for facilities providing ART services continues to be a challenge, with this quarter recording 81%, showing an improvement from the performance of 63% recorded for the quarter ending September 2016. The next steps are to support the DMU to improve facility reporting by conducting site support in the form of mentorships.

Partner Contributions

From August 15–19, SIAPS hosted the HPHCI Director of Research Dennis Ross-Degnan, Harvard Medical School/HPHCI Associate Professor Anita Wagner, SIAPS Senior Technical Advisor Maheen Malik, SIAPS Project Support Associate Katelyn Payne, SIAPS South Africa Deputy Country Project Director Stephanie Berrada, SIAPS Namibia Senior Technical Manager Greatjoy Mazibuko, and SIAPS Senior M&E Advisor Harriet Kagoya in a regional SIAPS workshop on the analysis of ART and antibiotic dispensing patterns and outcomes.

The purpose of this workshop was to share preliminary reports and data analysis from the different studies conducted in the South Africa, Namibia, and Swaziland. Additionally, the workshop focused on advanced data analysis methods to ensure high-quality analysis of extracted data and provide an opportunity for SIAPS and in-country partner teams to develop robust plans for results documentation. The workshop was facilitated by HPHCI, a SIAPS partner.

Constraints to Progress

SIAPS would like to address system downtime at all facilities running the information system tools. The challenge is the shortage of IT support personnel in the MOH to attend to fixing bugs and general troubleshooting.

Objective 4. Improve Pharmaceutical Services to Achieve Desired Health Outcomes

Product availability, along with rational use of HIV medicines, is essential for the country's effort to achieve epidemic control and an AIDS-free Swaziland by 2022. During the reporting period, there was no health facility reporting stock-outs of a preselected group of ARVs. The CMS had a stock-out of nevirapine suspension and the Swaziland Health Laboratory Stores had a stock-out of Determine HIV and Unigold rapid test kits.

SIAPS supported the MOH in advocating for the disbursement of quarters 2 and 3 funds for the procurement of ARVs. The SIAPS team successfully supported the CMS in updating the supply plans for ARVs, TB, and family planning commodities. A comprehensive financial analysis was then conducted to determine the availability of funds for the procurement of drugs. The total need for ARVs for quarter 2 was SZL 61 million. However, the Government was able to disburse SZL 43.5 million, which is 71% of the requirement, a funding shortfall of 29%. In line with the available funds, SIAPS supported CMS to revise their supply plan to utilize the available funds. Subsequently, government orders were placed for ARVs amounting to SZL 43.5 million.

SIAPS also worked with SNAP to support the scaling up of treatment of patients with a CD4 greater than 500 as part of the Test and Start Initiative. Test and Start will be rolled out October 1, 2016. SIAPS supported the national program to better understand the scale-up targets associated with the increased eligibility for treatment. Additionally, a comprehensive funding outlook was developed to see if there would be any funding gaps that could potentially hamper the commencement of Test and Start. CMS was able to revise the supply plan (paying special consideration to first-line ARV requirements since Test and Start will have a greater impact on them). An emergency order of 600,000 packets of adult tenofovir + lamivudine + efavirenz was placed with USAID/PSM as a buffer for the new Test and Start Project. This consignment is expected to be delivered in the next quarter and will be sufficient for four to six months, based on forecasted consumption patterns.

There were 157 ADRs reported through the passive surveillance system this quarter (cumulatively 233 since October 2015); 264 ADRs were included in a causality assessment. Currently, 4,176 patients are enrolled in the active surveillance system (June 2013–September 2016), of whom 52% are female and 48% are male. Of the 1,212 ADRs that have been reported, 68% were reported by patients on anti-TB medicines and 32% by patients on ARVs. The Medicines Safety Watch Newsletter was also produced this quarter, which highlighted the most commonly reported adverse events among patients on HIV/TB treatment.

SIAPS continued to support the National TB Control Program (NTCP) in the implementation of bedaquiline for the management of MDR- and XDR-TB patients. The support included:

- Enrolment and monitoring of patients as members of the bedaquiline clinical access program expert committee
- Monitoring key bedaquiline implementation indicators to contribute to ensuring patient safety and non-interruption of bedaquiline supply

By the end of this reporting period, there were 68 patients on bedaquiline.

SIAPS will continue to support the NTCP in rolling out bedaquiline and the printing of the bedaquiline clinician's pocket guide in the next quarter. SIAPS has continued to support the MOH to develop an antimicrobial resistance (AMR) containment strategy as part of improving rational antimicrobial use. To date, SIAPS has facilitated the appointment of the task team to lead the development process and approval of the team's TORs. SIAPS has coordinated the development of the zero draft AMR strategy. SIAPS is partnering with WHO (Swaziland country office) in the development of the strategy. The draft will be reviewed by WHO before finalization in the next quarter.

Constraints to Progress

- Late disbursement of funds creates delays in placing orders. Orders cannot be placed within the government accounting system before funds have been allocated to the relevant responsibility centers.
- Insufficient funding disbursements in that more often than not, the funds disbursed for the procurement of medicines are not matching with the supply plan's needs. This results in prioritization of product to procure. Government fiscal challenges are posing a risk to the country's efforts to treat everyone who tests HIV positive.

Ukraine

Goal: Ensure the availability of affordable quality pharmaceutical products and effective pharmaceutical services to achieve the desired outcomes for HIV patients

Overall Quarter Progress

During the fourth quarter of PY5, SIAPS Ukraine continued to demonstrate advancements toward all objectives. Outstanding activities from PY4 are also being successfully managed.

For Objective 1, the report on the National Supply Chain Assessment has been finalized.

For Objective 2, the technical report on the drug utilization review (DUR) in the HIV sector is being prepared for publishing. Materials are ready for the training for Drug and Therapeutics Committees (DTCs) in October.

For Objective 3, the trainings for members of the essential medicines list (EML) Expert Committee have been completed, and the committee has begun work on a draft EML.

In addition, SIAPS/Ukraine continues to provide technical assistance to the Ukrainian government on the development of medicines procurement reform, a national medicines policy, and guidelines for the reimbursement of medicines of the primary health care level.

Objective 1. Support Improvements in National Supply Chain Management

The assessment is completed. The report was finalized in September and will be presented at a stakeholder meeting in October.

Objective 2. Improve Pharmaceutical Services for HIV and Tuberculosis Programs

The final Ukrainian version of the DUR report for the HIV sector is being prepared for electronic publication, and the executive summary of the English version is being edited.

The training for the DTCs of five regional AIDS centers (Kyiv City, Chernihiv, Cherkasy, Odesa, and Vinnytsia oblasts) will take place October 10–13. Materials for the training (e.g., agenda, presentations, handouts) have been finalized.

Partner Contributions

The Ukrainian Center for Disease Control and the State Expert Center provided input for the development of training materials. Their representatives will participate in the training as trainers.

Objective 3. Improve Pharmaceutical Management and Governance

The second training on a health technology assessment (HTA) for the EML Expert Committee was completed in September and the committee began drafting the EML.

The methodology to select the medicines to include in the EML was approved by the Ministry of Health (MoH) and submitted to other ministries for approval. The State Commission on Regulatory Policy later submitted comments, and the MoH accepted them and made necessary amendments. The methodology is undergoing a second round of public discussion.

Changes to the MoH order on pharmacovigilance (PV) were approved, and this has increased the interest of the State Expert Center to move this activity forward. PV guidelines modules 7, 8, 11, and 12 have been developed but have not yet been submitted to the MoH. Modules 9 and 10 are in development.

Partner Contributions

The Renaissance Foundation helped to organize the first training for the HTA and continues to support the work of the EML Expert Committee.

Objective 4. (Anti-corruption) Support Improvements in National Supply Chain Management

SIAPS visited the Poltava, Dnipro, Kherson, and Chernihiv oblasts to discuss training needs. Three memoranda of understanding (MOU) were signed (the MOU with Chernihiv is under way). A visit to Odessa is planned and one additional MOU is expected.

A consultant was hired to help the Ministry of Economic Development and Trade (MEDT) create new draft legislation for a contracting framework based on recently introduced changes to the law on public procurement.

Partner Contributions

The MEDT is cooperating to update procurement legislation and add relevant functionality to PROZORRO, an electronic public procurement system.

Objective 5. (Anti-corruption) Improve Pharmaceutical Management and Governance

SIAPS seconded its M&E advisor to the MoH on request from the Deputy Minister. The advisor worked with Deputy Ministers and other MoH officials on drafting the decrees of the Cabinet of Ministers on reimbursement, which are now being finalized. Calculations are being made to provide budget estimates for the reimbursement of certain essential medicines at the primary care level.

A readiness assessment was performed to evaluate the current situation and perspectives for implementing the HTA. A first draft of the HTA roadmap was developed and presented in September.

Partner Contributions

The MoH and State Expert Center collaborated to develop an approach to reimbursement implementation and relevant budget calculations.

Participants of the readiness assessment included representatives of local and international industry; patient organizations; doctors (leading experts in oncology, hematology, and cardiology); the MoH; the State Expert Center; and the EML Expert Committee.