

# Strengthening the Pharmaceutical System in Sierra Leone after Ebola



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**SIAPS**  
Systems for Improved Access  
to Pharmaceuticals and Services

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## BACKGROUND

The catastrophic Ebola epidemic that began in 2014 aggravated Sierra Leone's already weak pharmaceutical supply system. The country's public-sector storage, handling, distribution, and waste disposal practices were in dire need of improvement. Peripheral health unit (PHU) facilities lacked reliable consumption data, which compromised inventory control and accurate forecasting and led to frequent stock-outs or overstocks. The existing cost recovery system also functioned poorly, potentially impacting future health care resources and access.

The Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program received two years of funding from the U.S. Agency for International Development (USAID) in September 2015 to provide technical assistance to rebuild and strengthen the post-Ebola pharmaceutical supply chain management system and improve the supply chain and rational medicine use in Sierra Leone. The project's technical assistance targets include district health management teams, central medical stores, hospitals, and PHUs in all 13 districts. The key stakeholders are the country's Directorate of Drugs and Medical Supplies (DDMS), which is responsible for coordinating and providing pharmaceutical services; the newly restructured National Pharmaceutical Procurement Unit responsible for procurement, warehousing, and distribution of pharmaceuticals and medical supplies for the public-health sector; and the Pharmacy Board of Sierra Leone (PBSL), the pharmaceutical regulatory agency.



## STRATEGIC APPROACH

SIAPS takes a systems strengthening approach to enabling the timely access to and appropriate use of pharmaceuticals. Each part of a pharmaceutical system relies on the others, with medical products requiring an additional layer of specific technical assistance. The project works closely with central and local governments, health care providers, and communities to determine appropriate options for improvement and supports its partners in implementing reforms in all components of the pharmaceutical management system.

For Sierra Leone, SIAPS is focusing on efforts that will most quickly restore basic functions to the country’s pharmaceutical system to get badly needed medicines and related products and services to as many people as possible.

A longer-term goal is to increase the system’s resiliency so that it can respond quickly and appropriately to future public health crises. Activities under the project adhere to the health and governance goals of Sierra Leone’s President’s Post Ebola Recovery Plan by helping the country prevent, detect, and respond to epidemics. Activities also support the Department for International Development (DFID)-funded Free Health Care Initiative (FHCI), a government-designed and led program that provides free medical treatment to pregnant women, lactating mothers, and children under five by helping to ensure delivery of essential reproductive, newborn, maternal, and child health medicines and commodities.

Along with the country stakeholders mentioned above, activities are undertaken in close collaboration with USAID, UNICEF, WHO, UNFPA, DFID, CHAI, APC/JSI, and other partners.

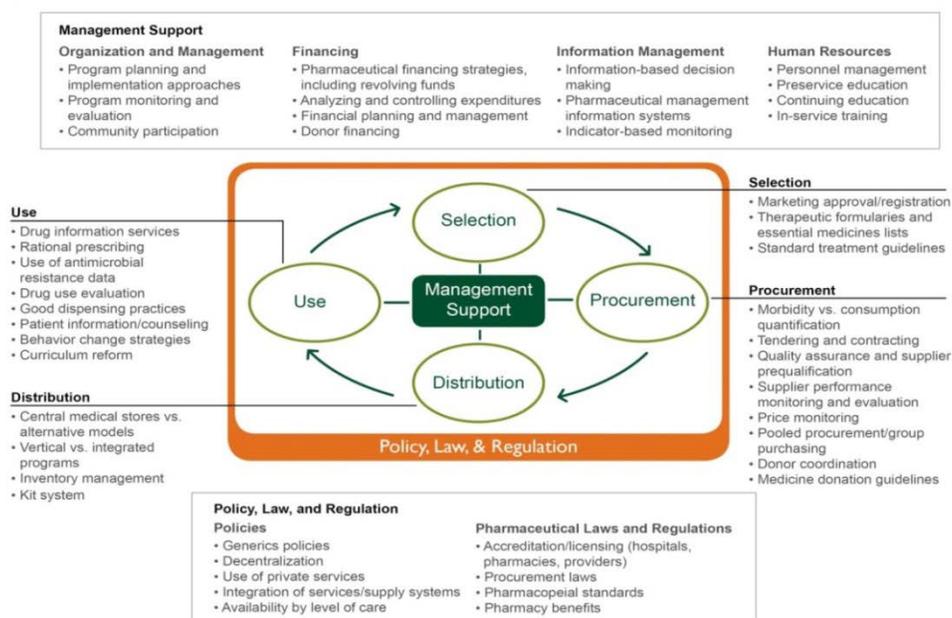


Figure 2. Components of a pharmaceutical management system

The project's activities focus on three main goals:

- Strengthen governance and leadership of the DDMS and district health management teams to effectively support health facilities in overall pharmaceutical management
- Improve supply chain management at district and last-mile health facilities to ensure product availability and rational use
- Develop pharmaceutical management information systems to improve the use of information for decision making

## INTERVENTIONS

To support these goals, SIAPS provides technical assistance for the following systems strengthening activities.

### Governance and Leadership

SIAPS is helping Sierra Leone strengthen pharmaceutical sector leadership and governance at all levels and improve local accountability, including institutionalizing and operationalizing quality assessment/improvement protocols and processes. The program is reviewing the DDMS structure and terms of reference for its operating units and developing the capacity of the directorate and district pharmacy personnel in leadership, management, and governance.

The project advocates for the development of health policy and planning for restoring health services and for building the capacity of DDMS-linked directorates of the Ministry of Health and Sanitation (MOHS) to introduce tools and systems that promote data quality; use information for decision making; and implement good pharmaceutical management practices, including rational medicine use.

SIAPS also conducted [Leadership Development Program \(LDP\)](#) training, developed by Management Sciences for Health, to build the capacity of the DDMS, district and hospital pharmacists, and SIAPS field staff in leadership, management, and governance. The goal

of the training was to ensure that participants would be equipped with the knowledge and skills to manage pharmaceutical services with maximum efficiency, collaboration, and transparency. This includes optimizing the SIAPS-supported [Continuous Results Monitoring and Support System \(CRMS\)](#), which has been implemented nationwide. The training created a pool of local LDP facilitators who can extend their knowledge to other DDMS staff and to pharmacists throughout all 13 districts in Sierra Leone.

The project also supported the establishment and launch of Drug and Therapeutics Committees (DTCs) in four hospitals, with another five in advanced stages of establishing DTCs, and plans are under way to rollout the experience to all 24 hospitals in Sierra Leone. SIAPS provided the pioneering hospitals with computers, printers, projectors, stationery, and office furniture to help the DTCs operate more effectively. In July, a draft Drug and Therapeutic Committee Operational Manual was presented and discussed at a DTC progress workshop. The manual will be used as a guide for day-to-day DTC management. Participants at the workshop included hospital pharmacists; hospital medical superintendents; district pharmacists; and representatives from the DDMS, the PBSL, and the SIAPS team in Sierra Leone.

A new user-friendly treatment and summary report register is being introduced at approximately 1,300 health facilities. The register serves as quality and quantity control for supervisors to check the accuracy and progress of activities related to treatment and supplies using an indicator-based check list. It uses ticking boxes to minimize writing and expedite data recording and analysis, and it can accommodate a broad range of products and diagnoses. Daily registers are combined into a monthly report on stock use and storage status. SIAPS is providing training of trainers and cascade training to help roll out its use and has supported the development of an electronic version for use at the hospital level.

SIAPS has also worked through the newly established DTCs to advocate for progress with the government's antimicrobial resistance (AMR) agenda. A SIAPS principal technical advisor for AMR provided technical advice to a task force that is leading national efforts to prevent and control AMR. A wider multisector stakeholder AMR call-to-action meeting was held on March 17, 2017, at the MOHS. Sierra Leone's Chief Medical Officer opened and chaired the meeting, which included representatives from the PBSL, SIAPS, the CDC, Public Health England, Ministry of Agriculture, Environmental Protection Agency of Sierra Leone, and other MOHS departments. The Registrar of the Pharmacy Board, one of the key government counterparts for SIAPS, has been nominated as the national AMR focal point. SIAPS is a member of the AMR task team and will continue to provide support for this effort.

### **Achievements**

SIAPS helped the DDMS establish an organogram and clarify staff roles and terms of reference. The directorate has more than doubled its technical staff to fill the structures created as a result of the new organogram. In May 2017, the project held a leadership and management training of trainers for 17 pharmacists and provided cascade training for an additional 35 from around the country. Participants were coached in leadership and management skills to uncover and address service gaps and managerial and operational challenges, particularly infrastructure and staffing constraints. A pool of LDP facilitators will expand the program to all 13 districts. A strategic/senior alignment meeting, an integral part of the LDP, was also conducted to allow partners and senior MOHS officers to collaborate with the DDMS in its efforts to improve health leadership and pharmaceutical management at all levels.

The first four DTCs have formed multidisciplinary committees, secured DTC offices, installed electronic treatment registers on their computers, entered

patient and product data, and taken steps to revise prescription papers and treatment charts, among other activities.

### **Supply Chain Management**

Goals in this area are to institutionalize supply chain management; improve distribution and storage, particularly in hard-to-reach areas; and build capacity for quantification exercises, including the use of electronic tools such as [Quantimed](#) and [QuanTB](#).

SIAPS helped Sierra Leone institute a CRMS to assess baseline challenges in pharmaceutical management and regularly track and support improvement in key areas. The CRMS uses a series of indicators (figure 5) to track and monitor factors that influence medicine availability and disease case management.

As part of the CRMS process, health facilities benefit from real-time capacity building through mentoring, physical improvement of storage, and management of expired products.



**Figure 3. Storage practices in a district store were in dire need of improvement.**

As part of its support to the CRMS, SIAPS is providing shelves and cabinets to address storage problems identified during the CRMS exercises. To date, 50 health facilities have been assessed for storage adequacy, and work is in progress in 26 more. Installation of secure and improved storage capacity has been completed in three facilities in Western Area.

SIAPS also supported the establishment and initial training of a national quantification committee and seven quantification technical working groups in October 2016. The committee and working groups will coordinate effective pharmaceutical management in the country. Relevant health sector stakeholders—health programs, DDMS, district health management teams, MOHS departments, health facilities, and development partners—are represented on these teams. As part of its technical assistance, SIAPS supported the DDMS and the technical working group for the FHCI in conducting a multiyear quantification of pharmaceuticals. Data from multiple sources, including the CRMS, were used to support evidence-based decision making.

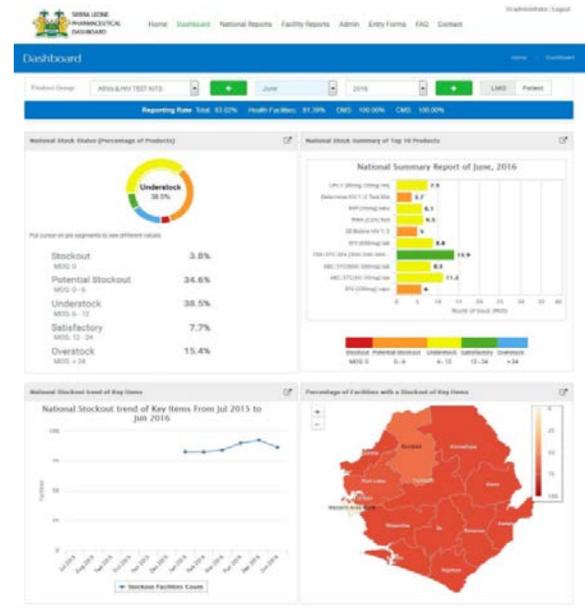
SIAPS also trained the tuberculosis quantification technical working group on the use of [QuanTB](#), a quantification and early warning tool SIAPS developed to improve procurement processes for TB medicines.

### **Achievements**

SIAPS supported the launch of the CRMS in June 2016. By the end of that year, all 13 districts had conducted their first CRMS cycle and 10 had conducted two cycles; 10 districts had completed their third cycle by July 2017. On average, 70% of health facilities in each district participated in the CRMS exercise. SIAPS has collected all of the data from cycles thus far and will help expedite data entry and analysis. A simplified, more user-friendly template has been developed to enter and analyze data that will be piloted and refined in the Koinadagu District before being shared more widely.

In May 2017, SIAPS provided technical assistance to the National AIDS Secretariat and National AIDS

Control Program to conduct a multiyear quantification of antiretrovirals, opportunistic infection medicines, test kits, and diagnostic equipment.



**Figure 4. The Sierra Leone pharmaceutical dashboard**

### **Information for Decision Making**

The absence of a reliable data collection system has been a major cause of poor procurement and supply decision making and, consequently, losses due to over- and under-stocking and expiry. It is hoped that improved and user-friendly data collection tools will help the DDMS streamline procurement processes and automate the pharmaceutical information system for public-sector pharmacies. SIAPS also supported the National AIDS Secretariat in establishing the [Sierra Leone Pharmaceutical Dashboard](#), a web-based early warning system that provides visual data on real-time patient and product information. The site architecture uses basic national health system structures and data, and development is being extended beyond HIV/AIDS management to include other health programs, such as malaria and TB. The dashboard data are being expanded to include all monthly CRMS-related data. Data will be entered at the facility level and feed into a central data dashboard.

Morbidity	Number of visits by age and sex
	CRMS visit profile by age
	CRMS total visit profile
Stock	CRMS stock status of product group
	CRMS stock availability by type of facility for product group
	CRMS treatment versus quantity of ACTs dispensed
	Availability of ACTs
	CRMS commodity expiry for 14 high-level indicator products (ACTs, essential antibiotics), plus stock-out trends for each product
System	Average number of medicines per prescription
	Count of selected variables: expired, moved for disposal, disposed of
	Discrepancy between physical count versus stock card record
	FEFO (first expired, first out) practices
	Staff-level distribution – percentage of each designation

**Figure 5. CRMS data to be integrated into the dashboard**

SIAPS also introduced a revised treatment/pharmacy register to be used at hospitals and PHUs. The register captures patient uptake, priority diseases treated, actual medicine consumption, and stock status data of tracer and key pharmaceuticals. These include 13 essential products and selected Ebola-related commodities from all public health facilities in the country (24 hospitals and approximately 1,200 PHUs). It is a key source of actual consumption data to monitor inventory and promote the rational use of pharmaceutical products.

*Achievements*

New tools and technologies, such as an electronic information system for public-sector pharmacies, are helping health facilities and district teams make better decisions on procuring and supplying pharmaceutical products. SIAPS supported the establishment and training of a national committee and seven technical working groups on using Quantimed, Pipeline, and QuanTB for quantifying stock and contributed to the revision of Sierra Leone’s National Essential Medicines List to inform the selection of products for quantification. The

teams then planned procurement of supplies for the DFID-funded FHCI, which is targeted at pregnant women, lactating mothers, and children under the age five, for 2017 and 2018.

As mentioned above, Ebola wreaked havoc on Sierra Leone’s already fragile health system. When the epidemic hit, staff deployment to the Ebola response created a severe shortage of trained pharmaceutical staff at all levels. The PHUs were managed by volunteer staff because financial resources were limited, and these staff had varied levels of accountability and commitment. Staff working in Ebola response facilities were receiving higher overtime or danger pay and did not return to the PHUs where they originally worked for lower wages. Further, unplanned donations cluttered storage systems with unusable Ebola supplies and expired products. Working with many partners and nongovernmental organization during and after the Ebola crisis meant that districts and health facilities had to deal with competing priorities and varied ways of implementation that could be duplicative and time consuming.

Finally, the country’s pharmaceutical management information system was weak. Data quality and recording, which mainly used cumbersome, paper-based tools, were inefficient and reporting was irregular. Procurement and stock decisions were not based on solid data.

**LESSONS LEARNED**

**Engagement**

A close collaboration with the DDMS and partners on designing and implementing projects significantly increased efficiency and trust, which sped up acceptance and uptake of the interventions. Mentorship and one-on-one engagement with district and facility managers, local governments, and community residents were key to moving projects forward.

## Efficiency

A main determinant of success in Sierra Leone was flexibility. Going into the project without pre-determined expectations encouraged out-of-the-box thinking and action. The team was persistent and alert to opportunities to progress wherever possible and worked on all aspects of systems strengthening simultaneously. A concerted effort was made to anticipate and break through bureaucracy and other potential barriers and to maintain a sense of urgency. Fast-tracking activities to the greatest extent possible was an effective kick-starter. Little time was wasted on nonessential meetings.

## Prioritization

Focusing on solving small issues first helped pave the way for the success of larger efforts. Basic, low-investment activities, such as community efforts to build new medicine pallets or fix a health facility wall, had a positive impact on overall best practices.

## NEXT STEPS

SIAPS will continue to build on projects and progress to date by fine tuning, consolidating, and scaling up interventions. The program will also provide capacity building, mentorship, equipment, and up-to-date reference materials to central and district pharmaceutical teams to improve the quality of services and avail highly needed resources to help ensure the sustainability of progress. That includes transitioning ownership by escalating the involvement of the DDMS, district health management teams, health programs, and DTCs in the management and operation of existing activities.

Finally, the program will advocate with the MOHS, USAID, and other partners for resources to continue activities until their sustainability is ensured. Advocacy and engagement will be in collaboration with the DDMS and district health managers to ensure that beneficiaries have a stake in the outcome. SIAPS will share lessons learned through implementing these plans to the government and partners.

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**ABOUT SIAPS** | The Systems for Improved Access to Pharmaceuticals and Services (SIAPS) program works to assure access to quality pharmaceutical products and effective pharmaceutical services through systems-strengthening approaches to achieve positive and lasting health outcomes. SIAPS is funded by the US Agency for International Development (USAID) and is implemented by Management Sciences for Health.

The information provided does not reflect or represent the position or views of the US Agency for International Development or the US Government.



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