

# South Sudan End of Project Report

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

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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.

## **Recommended Citation**

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## **Key Words**

antiretroviral therapy, county health department, Electronic Dispensing Tool, Logistics Management Unit, Ministry of Health, National Malaria Control Program, National Malaria Strategic Plan, Juba Teaching Hospital, Logistics Management Information System, Pharmaceutical Management Information System, pharmaceutical technical working group, State Ministry of Health, supply chain management, supportive supervision

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## ACRONYMS

ACT	artemisinin-based combination therapy
AIDS	acquired immune deficiency syndrome
ART	antiretroviral therapy
CES	Central Equatoria State
DFCA	Drugs and Food Control Authority
EDT	Electronic Dispensing Tool
HIV	human immunodeficiency virus
LLIN	long-lasting insecticide-treated net
LMU	Logistics Management Unit
M&E	monitoring and evaluation
MNCH	maternal, neonatal, and child health
MOH	Ministry of Health
NMCP	National Malaria Control Program
PEPFAR	President's Emergency Plan for AIDS Relief
PMI	President's Malaria Initiative
PMIS	Pharmaceutical Management Information System
POP	Office of Population & Reproductive Funds
PTWG	pharmaceutical technical working group
RDT	rapid diagnostic test
SIAPS	Systems for Improved Access to Pharmaceuticals and Services
USAID	United States Agency for International Development
WES	Western Equatorial State
WHO	World Health Organization



## BACKGROUND AND CONTEXT

South Sudan has a heavy disease burden with an estimated maternal mortality ratio of 2,054 per 100,000 live births and an under-five mortality rate of 135/1,000 live births.<sup>1</sup> Only 12% of malaria patients are treated with artemisinin-based combination therapy (ACT) within 24 hours of the onset of fever.<sup>1</sup> The prevalence of HIV among persons aged 15-49 was estimated at 2.66%.<sup>2</sup> As of December 2014, only 15,700 people living with HIV were on antiretroviral therapy (ART). There are 16 ART sites (15 supported by the President's Emergency Plan for AIDS Relief [PEPFAR]) and 19 prevention-of-mother-to-child transmission sites in the country.

A 2010 assessment reported significant challenges in the pharmaceutical sector, including multiple vertical supply chains supported by different donors; poorly coordinated procurement and distribution systems; a kit-based push system that results in over- and undersupply of some items; weak information management systems; nonharmonized inventory control forms used at various levels and by different partners; poor storage facilities and conditions; a lack of transport and communication systems; a shortage of qualified pharmaceutical personnel at all levels; and a lack of adequate legislation and enforcement mechanisms to regulate the pharmaceutical sector and ensure the safety and effectiveness of pharmaceuticals and medical devices. Collectively, these factors resulted in chronic stock-outs of commodities at health facilities.

USAID provided \$11.2 million (MNCH: \$4.9 million; PEPFAR: \$1.5 million; PMI: \$4.4 million; POP: \$400,000) through the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program to South Sudan to support pharmaceutical system strengthening over a five-year period. SIAPS used a systems-based approach to strengthen pharmaceutical systems, build in-country capacity for commodity management, and increase the availability of essential medicines and effective pharmaceutical services (annexes A and B).

SIAPS focused on ensuring the availability of quality pharmaceutical commodities (e.g., ACTs, antiretrovirals, family planning, long-lasting insecticide-treated nets [LLINs], and sulfadoxine-pyrimethamine/Fansidar) and effective pharmaceutical services to achieve desired health outcomes, such as preventing maternal, child, and malaria deaths and contributing to an AIDS-free generation. SIAPS started work in South Sudan in 2012 as a follow-on to the Strengthening Pharmaceutical Systems Program. SIAPS South Sudan interventions were implemented at the national level and in two states: Central Equatoria State (CES) and Western Equatoria State (WES) (figure 1).

The long conflict in South Sudan has disrupted the health system, leading to considerable weaknesses and gaps in all aspects of the pharmaceutical system. SIAPS South Sudan encountered two major conflicts that interrupted its implementation, one in December 2013 and the other in July 2016.

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<sup>1</sup>Sudan Household Health Survey 2010; <http://www.ssnbss.org/home/document/survey/sudan-household-health-survey>

<sup>2</sup>SSAC; Universal Access Report 2010, Scaling Up HIV/AIDS Response, South Sudan

## PORTFOLIO GEOGRAPHICAL COVERAGE



**Figure 1. Map of South Sudan showing 2013 geographic and political administrative units (states)**

SIAPS South Sudan provided technical assistance throughout the five years of project implementation to the Ministry of Health (MOH) and had offices in Juba in the CES and Yambio in the WES. SIAPS provided technical assistance by embedding pharmaceutical advisors at the CES State MOH and the WES MOH. The senior malaria advisor and the monitoring and evaluation (M&E) advisor, supported the National Malaria Control Program (NMCP). SIAPS had a data officer that supported the Logistics Management Unit (LMU) at the MOH, as well as two data officers in the CES and the WES.



## SIAPS SYSTEMS STRENGTHENING APPROACH

SIAPS provides next generation technical leadership and assistance in pharmaceutical system strengthening with a deliberate focus on patient-centered services and health outcomes. The SIAPS technical approach emphasized Global Health Initiative principles, especially country ownership, health system strengthening, developing the capacity of local governments and organizations, sustainability, and improving metrics and M&E. Toward this end, the SIAPS framework and results areas reflect the dynamic relationships among five health system building blocks (figure 2) to provide technical focus and identify substantive areas of concern and their related corrective interventions. The ultimate objective of the SIAPS work in South Sudan was to improve coverage and access to evidence-based interventions, which would ensure sustainable, country-owned health outcomes in line with the Government of South Sudan’s priority areas and USAID/USG strategic objectives.

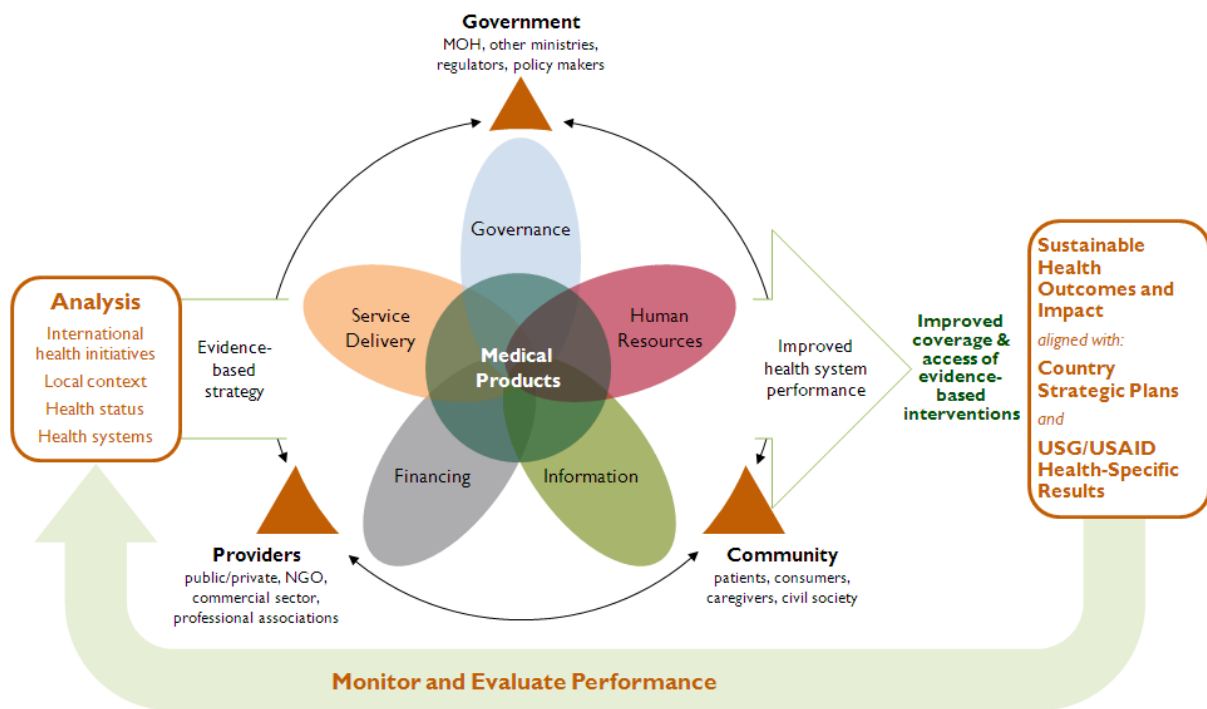


Figure 2. SIAPS pharmaceutical system strengthening framework<sup>3</sup>

<sup>3</sup> Center for Pharmaceutical Management. 2011. Center for Pharmaceutical Management: Technical Frameworks, Approaches, and Results. Arlington, VA: Management Sciences for Health

## **KEY INTERVENTIONS**

### **Strengthening Governance and Regulatory Capacity**

To create an enabling environment to regulate pharmaceuticals and related services, SIAPS collaborated with the MOH Directorate of Pharmaceuticals and Medical Supplies and advanced legislation that provided for the establishment of the Drug and Food Control Authority (DFCA). SIAPS supported the review of the regulations for importation of medicines and installed MiniLabs used in the assessment of the quality of imported pharmaceuticals at key entry points.

### **Improving Availability of Essential Medicines and Storage Conditions through Strengthening Stakeholder Coordination**

Parallel and uncoordinated procurements and distribution channels led to duplication of efforts and made it difficult for the country to determine gaps or excesses and allocate resources. Following supply chain stakeholders' mapping, SIAPS and the MOH set up functional pharmaceutical technical working groups (PTWGs) to support planning, coordinating, and streamlining of pharmaceutical management activities, including national-level quantification, procurement, and distribution of all health commodities.

The kit-based distribution system contributed to downstream stock-outs and overstock of commodities. SIAPS worked with the PTWG and the MOH at both national and state levels to dejunk medical stores that were overcrowded with expired medicines. SIAPS worked with stakeholders to revise essential medicines kits to make them more responsive to health facility needs. Support was also provided for improved quantification, procurement, and distribution. To avoid further overstocks and stock-outs, a guideline for redistributing excess and near-expiry essential medicines among facilities was developed.

### **Addressing the Need for Data for Strengthening the Pharmaceutical Sector**

South Sudan's weak information system affected the availability of critical supply information for evidence-based quantification, supply planning, procurement, and financial decision-making. SIAPS supported the MOH and PTWG to set up an LMU that serves as a hub for all supply management data and pharmaceutical supply information. Through the LMU, Pharmaceutical Management Information System (PMIS) data collection tools were harmonized, revised, and distributed to all 10 states. Additionally, SIAPS delivered capacity-building training workshops on the tool to health care workers from CES and WES. To facilitate the management of HIV/AIDS commodities, the Electronic Dispensing Tool (EDT) was installed at the Juba Teaching Hospital Antiretroviral Treatment Center, the largest HIV/AIDS training and treatment center in the country. These tools and systems provide the LMU with monthly stock status reports on essential medicines.

## Improving Human Resource Capacity to Deliver Pharmaceutical Services

In response to the immediate need for skilled and experienced technical personnel to carry out various pharmaceutical management tasks at all levels, SIAPS developed a standard training curriculum to be used by all stakeholders who train pharmaceutical cadres in South Sudan. Through these trainings, 1,210 health care workers (figure 3) were trained. Using supportive supervision checklists, 14 supportive supervision visits were conducted in CES and WES. On-the-job training and support were provided to health facility staff to enhance malaria case management and medicines management. SIAPS also employed the Continuous Results Monitoring System to assess performance at service delivery points.

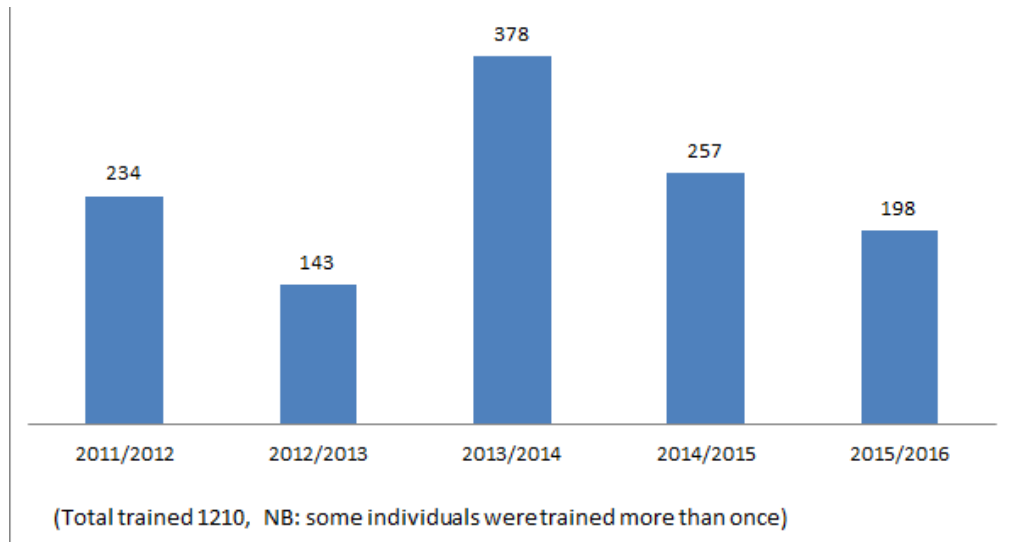


Figure 3. Number of persons trained in pharmaceutical management, 2011-2016

## Supporting the NMCP

SIAPS worked with the various health programs to prioritize funding for malaria and commodity needs, based on assessments and quantification exercises undertaken in collaboration with the NMCP. SIAPS provided daily mentoring of staff at the central level. Support was provided to develop the National Malaria Control Policy and revise the national malaria strategic plan and develop and distribute key malaria guidelines. SIAPS supported the NMCP and worked closely with World Health Organization (WHO) to identify and set-up three sentinel sites for monitoring therapeutic efficacy of antimalarial medicines and train 171 staff at the sites. To ensure effective treatment of malaria, SIAPS supported the development of the second edition of the South Sudan Malaria Case Management and Training Guidelines and distributed 230 copies. SIAPS also supported World Malaria Day commemorations, malaria program reviews, and malaria indicator surveys.

## **KEY ACHIEVEMENTS**

### **Regulatory Systems Strengthened**

The DFCA now controls and regulates the manufacturing, supply, marketing, distribution, and use of medicines, poisons, chemicals, cosmetics, medical devices, and food. The safety and quality of imported medicines is ensured through routine inspection and quality control testing at the Kaya border post and CMS, Konyokonyo branch. The ability to conduct these simple tests is linked to the availability of standard operating procedures, qualified personnel, and established offices equipped with MiniLabs provided by SIAPS.

### **Improved Availability of Essential Medicines**

Improved availability of essential medicines is a result of improved partner coordination under the leadership of the PTWG. The PTWG enabled stakeholders to discuss parallel procurements and distributions and agree on unified mechanisms. National distribution plans for antimalarials and other essential medicines were developed and discussed by all partners. Between 2014 and 2016, SIAPS supported the distribution of 750,000 LLINs, 635,650 doses of ACT, 250,000 doses of sulfadoxine-pyrimethamine, and 1 million rapid diagnostic test (RDT) kits.

### **Improved Storage Conditions**

The dejunking of storage facilities at the state and county levels, the provision of storage shelves, and the availability of guidelines and training on inventory management and good storage practices were key factors in improving storage conditions. The impact of dejunking went far beyond the two supported states, where 16 of 17 county stores completed the activity. Through the PTWG, SIAPS advocated dejunking to partners in other states. By the end of 2014, facilities and county medical stores in 8 of the 10 former states of South Sudan had improved their storage conditions.

### **Improved Availability of Data for Decision Making**

Since the LMU establishment, all facilities in the country use standardized reporting tools. The number of facilities reporting monthly stock status of essential medicines in supported states has increased from zero (no facility report) in 2013 to 60% in March 2016 (before the breakout of widespread insecurity in the country). The information is regularly used by the PTWG for decision making. At Juba Teaching Hospital, more than 4,000 patients have been registered in the EDT.

### **Capacity for Pharmaceutical Management and Services Improved**

In addition to in-service training, supportive supervision and on-the-job mentoring helped to enhance staff skills in managing pharmaceuticals and services. Follow-on support supervisory

visits showed that 61% of participants visited had completed action plans that were developed during training workshops. As a result of training and continuous mentoring, 9 of 16 counties in the supported states are now able to order commodities based on consumption data (pull system).

### **Malaria Program Strengthened**

With SIAPS support, the malaria program was able to produce required documents that enabled it to win Global Fund grants of more than \$97.6 million for malaria activities and commodities. This additional funding facilitated the scale-up of malaria interventions in the country.

## LESSONS LEARNED

- Involving the MOH personnel as the leaders and champions of intervention implementation ensured ownership and stewardship at the national and state levels.
- Embedding SIAPS staff in the South Sudan State MOH and at the NMCP was a successful mechanism for initiating and institutionalizing capacity improvements.
- Developing standardized tools in collaboration with development partners and in-country stakeholders facilitated the uptake and systemwide adoption of tools. Setting a centralized LMU with local leadership to provide feedback on data quality and stock status provided the elements for developing sustainability after the project closed.
- Partnership was critical in delivering key results in malaria interventions as some of the SIAPS objectives are achieved through other partners.
- Given the changing context of programming in South Sudan (security, donor landscape, and staff turnover), having a stronger coordination and monitoring mechanism to provide regular updates and inform service delivery was key.

## OWNERSHIP/SUSTAINABILITY

All the interventions that were supported through SIAPS were implemented under the leadership of the MOH to ensure country ownership. Learning and accountability have been promoted through effective M&E of activities and results. While SIAPS provided technical leadership and mentoring, the MOH oversaw implementation of interventions on all programs, such as the NMCP, LMU, and the ART center at the Juba Teaching Hospital. For example, the NMCP program manager is an MOH staff member and provides day-to-day management for the malaria program. The same holds true with the LMU, which is headed by the Directorate of Pharmaceuticals and Medical Supplies. All seconded staff members were under the leadership of the director who will continue to run the unit even after SIAPS is phased out. Additionally, the LMU has attracted a lot of interest from partners, such as WHO and the Health Pool Fund, who will be providing support to the MOH beyond SIAPS.

As a young nation going through a challenging security situation, from the SIAPS perspective, there is a lot more work and investment needed for South Sudan to achieve resilient and sustainable pharmaceutical systems. The work accomplished in the past five years by SIAPS has enabled the country to develop platforms upon which they can build sustainable systems and provide an opportunity for future investment.

## **FUTURE OF PHARMACEUTICAL SYSTEMS STRENGTHENING IN SOUTH SUDAN**

Some of SIAPS' coordinating responsibilities, such as the PTWG, continue to be performed by the MOH, given that the chair of the forum is directly under MOH oversight.

The technical support provided to the MOH and partners in strengthening pharmaceutical systems was designed factoring in the need for continued implementation by the government line ministry and partners, even after SIAPS closes; as such, the strategy involved working within the existing MOH structure, making them take the lead in rolling out key interventions.



**ANNEX A. IMPLEMENTING PARTNERS AND SIAPS INTERVENTIONS THEY SUPPORTED**

<b>Implementing partner</b>	<b>Intervention(s)</b>	<b>Year(s)</b>
WHO	Sentinel site surveillance training and data collection, distribution of malaria commodities (ACTs, RDTs, and injectable artesunate) under emergency services	2011-2016
Population Services International	Distribution of malaria commodities (ACTs, sulfadoxine-pyrimethamine/Fansidar, LLINs, artesunate, and RDTs)	2011-2016
UNICEF	Distribution of malaria commodities (ACTs, LLINs, artesunate, and RDTs); they provided information for gap analysis and commodity quantification	2011-2016
USAID   DELIVER	Distribution of ACTs for emergency response during malaria upsurge in 2015	2015-2016
<a href="#">South Sudan Integrated Service Delivery Project- Jhpiego</a>	Last-mile distribution of malaria commodities and PEPFAR commodities (condoms, drug registers)	2011-2016
<a href="#">International Centre for AIDS Care &amp; Treatment Program- Columbia University</a>	Last-mile distribution of PEPFAR commodities (condoms, drug registers)	2014-2016
Crown Agents and International Procurement Agency Initiative	Distribution of Emergency Medicines Fund (all essential commodities to the whole country); SIAPS supported developing distribution plan, getting tax exemption, and import verification	2015-2016
Health Pool Fund	Last-mile delivery of malaria commodities, LLINs in six states and RDTs in eight states	2012-2016
Adventist Development and Relief Agency International	Last-mile distribution of malaria commodities	2016

**ANNEX B. STAKEHOLDERS THAT SIAPS HAS COLLABORATED WITH DURING  
PY1-PY5**

<b>Stakeholder</b>	<b>Intervention(s)</b>	<b>Year(s)</b>
NMCP	Hosting embedded staff (malaria and M&E adviser), convening stakeholders' meetings, developing tools for conducting supportive supervision visits, coordinating approval of distribution plans by MOH, and communicating with the states on commodity distribution plans	2011-2016
Directorate of Pharmaceuticals and Medical Supplies/MOH	Approval of distribution plans for commodities; technical oversight on all pharmaceutical activities, including partnership coordination	2011-2016
MOH LMU	Setting up the LMU, technical oversight of LMU team, including data coordinator seconded by SIAPS	2013-2016
Juba Teaching Hospital	Implementing EDT at the ART site at Juba Teaching Hospital and supporting data officer seconded by SIAPS	2013-2016
Central Medical Stores	Storage of commodities (RDTs), coordination of distribution, issuing waybills and distribution documents; CMS executive director chaired PTWG meetings (SIAPS was the secretariat and WHO was co-secretariat)	2014-2016
State MOHs for CES and WES	Coordinating distribution of malaria commodities and conducting joint supportive supervision visits, malaria case management trainings, and quarterly malaria partners coordination meetings	2014-2016
Health Pool Fund	Providing technical assistance on dejunking health facilities, dissemination of PMIS tools, and capacity building of health workers on supply chain management system	2012-2016