USAID | DELIVER PROJECT Final Country Report









USAID | DELIVER PROJECT Final Country Report

Mozambique

USAID | DELIVER PROJECT, Task Order 4

The USAID | DELIVER PROJECT, Task Order 4, is funded by the U.S. Agency for International Development (USAID) under contract number GPO-I-00-06-00007-00, order number AID-OAA-TO-10-00064, beginning September 30, 2010. Task Order 4 is implemented by John Snow, Inc., in collaboration with PATH; Crown Agents Consultancy, Inc.; Eastern and Southern African Management Institute; FHI 360; Futures Institute for Development, LLC; LLamasoft, Inc; The Manoff Group, Inc.; Pharmaceutical Healthcare Distributers (PHD); PRISMA; and VillageReach. The project improves essential health commodity supply chains by strengthening logistics management information systems, streamlining distribution systems, identifying financial resources for procurement and supply chain operation, and enhancing forecasting and procurement planning. The project encourages policymakers and donors to support logistics as a critical factor in the overall success of their healthcare mandates.

USAID | DELIVER PROJECT, Task Order 7

This document was prepared by staff of the USAID | DELIVER PROJECT, Task Order 7, which is funded by the U.S. Agency for International Development (USAID) under contract number GPO-I-00-06-0007-00, order number AID-OAA-TO-11-00012, beginning on March 28, 2011. Task Order 7 is implemented by John Snow, Inc., in collaboration with 3i Infotech, Inc.; Crown Agents USA, Inc.; FHI 360; Foundation for Innovative New Diagnostics; Logenix International, LLC; The Manoff Group, Inc.; MEBS Global Reach, LC; PATH; PHD International (a division of the RTT Group); PSI; Social Sectors Development Strategies, Inc.; UPS Supply Chain Solutions, Inc.; and VillageReach. Task Order 7 supports USAID's goal of reducing the malaria burden in sub-Saharan Africa by procuring and delivering safe, effective, and high-quality malaria commodities; by providing technical assistance and on-the-ground logistics expertise to strengthen in-country supply systems and build capacity for managing commodities; and by improving the global supply and long-term availability of malaria commodities.

Recommended Citation

USAID | DELIVER PROJECT. 2016. USAID | DELIVER PROJECT Final Country Report: Mozambique. Arlington, Va.: USAID | DELIVER PROJECT, Task Order 4 and 7.

Abstract

This report summarizes the work carried out by the USAID | DELIVER PROJECT in Mozambique from 2007–2015. The project provided technical assistance in malaria prevention and treatment by strengthening the health supply chains and improving the environment for commodity security.

Cover photo: Pharmacist explaining to a mother how her baby needs to take Coartem: Marrerre Health Center, Nampula, Mozambique; 2015. Photographer: Arturo Sanabria.

Unless otherwise stated, all photos in this document are credited to the USAID | DELIVER PROJECT.

USAID | DELIVER PROJECT

John Snow, Inc. 1616 Fort Myer Drive, 16th Floor Arlington, VA 22209 USA Phone: 703-528-7474 Fax: 703-528-7480 Email: askdeliver@isi.com

Internet: deliver.isi.com

TABLE OF CONTENTS

01

Project Overview and Context

Pages 7-12

- # Project Overview
- # Investment in Commodity Support and Technical Assistance
- # Family Planning in Mozambique
- # Malaria in Mozambique
- # Maternal, and Child Health Equipment in Mozambique

02

Technical Assistance

Pages 13-26

- # Technical Assistance Overview
- # Strengthen Logistics
 Systems
 Performance
- # Increase National Commitment to Commodity Security
- # Build Sustainable Capacity

03

The Way Forward

Pages 27-28

The Way Forward

04

Additional Resources

Pages 29-32

- # Acronyms
- # Further Reading



Project
Overview
and
Context

Project Overview

The USAID | DELIVER PROJECT, in partnership with ministries of health and other organizations, improves health outcomes in developing countries by increasing the availability of health supplies. For more than 30 years, USAID has been a world leader in providing health commodities—all critical components of health program success.

The USAID | DELIVER PROJECT (the project) strengthens global, regional, and in-country supply chains to improve and expand the delivery of public health commodities to the people that need them. Since 2007, using best practices and innovative approaches, the project has, with support from USAID and the President's Malaria Initiative (PMI), worked closely with other stakeholders to coordinate supply chain activities and improve systems in-country. Collaborators include the Government of Mozambique (GOM), specifically the Ministry of Health (MISAU); the Central Medical Stores (CMAM); and other partners. The resulting supply chains provide clients with a range of affordable, quality, essential health commodities, including reproductive health and malaria commodities. Interventions were implemented in three major areas: (1) strengthening the national supply chain for essential medicines, (2) improving the visibility of the supply chain at all levels, and (3) building human capacity in logistics management. Where appropriate,

and especially at the systems strengthening level, the project worked hand-in-hand

2007

2008

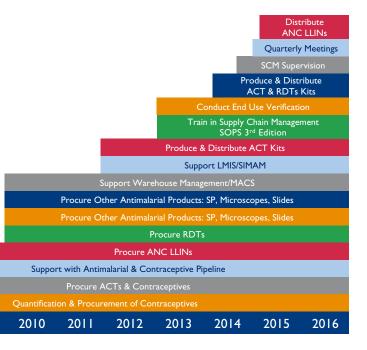
2009

with the Supply Chain

has contributed to the U.S. Government's

Management System (SCMS). The project

(USG) objective of cutting in half the malaria burden in 70 percent of the at-risk population of sub-Saharan Africa in Mozambique since 2007. With USAID, government counterparts, and other partners in-country, project activities worked to meet USG objectives by improving product availability in-country, procuring and delivering high-quality malaria products, and strengthening the in-country systems that manage them.



Investment in Commodity Support and Technical Assistance

Since 2007, the USAID | DELIVER PROJECT, working closely with SCMS, has increased the availability of essential health supplies, including contraceptives, condoms, and malaria commodities by providing procurement services and strengthening the integrated supply chain.

Working closely with MISAU, CMAM—which also acts as the logistics services unit within the government— the Reproductive Health/Family Planning Program, and the National Malaria Control Program (NMCP), the project has supported the GOM's goals to promote rational drug use; ensure the quality of medicines; and improve access to appropriate, affordable, high-quality medicines.

During eight years, the project's support included technical assistance to develop the logistics management information system (LMIS) and logistics workforce, and strengthen the overall management systems—provided by the USAID Mission—with some USAID/Washington core funding.

Initially focusing on shipments and commodity availability in 2007, the project now provides essential capacity building and technical support to the in-country supply chain institutions, building local capacity, and

increasing sustainability.

The project has worked across supply chain levels at the central- and provincial-levels to increase visibility into the supply chain and, at the lower levels, provide better logistics information for decision making. Prior to the project, the country did not have a functioning LMIS. In addition, the project strengthened the storage and warehousing system, most notably improving storage for last mile distribution of artemisinin-based combination therapy kits and long-lasting insecticide-treated bed nets (LLINs). The project has managed last mile distribution of LLINs, in two key high-prevalence provinces since 2014.

With a focus on commodity security, the project worked with the MOH, starting in 2010, to quantify, schedule, coordinate donor inputs, and monitor contraceptive and condom supply. Technical assistance provided by the project has expanded this approach to include all essential medicines. To sustain this progress, the project provided capacity building that strengthened the logistics workforce on general logistics management concepts and developed tools to increase the capacity of the MOH, leading to performance monitoring of public sector health

commodities at all levels of the supply chain.

Commodities
Support and Technical
Assistance
2007-2015



Family Planning



Malaria



MCH

Family Planning in Mozambique

By helping women delay, space, and limit pregnancies, family planning is a cost-effective intervention that saves the lives of mothers and their children, and also saves thousands of dollars in healthcare spending every year.



In 2003, 11.7 percent of women were using modern contraceptives (DHS 2003). Despite a slight increase in contraceptive prevalence and a decrease in unmet need since 2003, women of childbearing age continue to have large families. The total fertility rate (5.9) is one of Africa's highest (DHS 2011) and approximately 1.5 million women who want access to family planning do not have it. The project ensured

access to contraceptives that helped families limit, space, and delay pregnancies in a country that has significant need.

In total, the project shipped—

□ 166,728,000 condoms

■12,814,400 injectables

□7,486,080 cycles of oral contraceptives

□208,200 IUDs

□61,900 implants.

USAID | DELIVER PROJECT Shipments FY2007–2016

provided **6.3 million couple-years**protection (CYP)

| Unintended pregnancies prevented | 1.3 million |
|----------------------------------|----------------|
| Infant deaths prevented | 53,700 |
| Maternal deaths prevented | 5,200 |
| Under-5 child deaths prevented | 32,700 |

Malaria in Mozambique

In Mozambique, the percentage of households with at least one LLIN increased from 18% in 2007 to 68% in 2015.



Malaria is the biggest killer in Mozambique, causing 29 percent of all deaths (PMI Operational Plan 2015). In 2007, only 18 percent of households with a child less than 5 years old and/or a pregnant woman owned at least one LLIN; and only 7 percent of pregnant women and 7 percent of children slept under an LLIN (PMI Country Profile 2015).

USAID/PMI supported the project to procure essential commodities for the prevention and treatment of malaria. Since 2007, 35 percent more households used an LLIN. This is, in part, due to the project's last mile product delivery. In the two highest malaria burden provinces, through the GOM's antenatal care program, the project has specifically packaged LLINs and treatment for health facilities and community health workers (CHWs), as well as trained them on logistics.

| Epidemiological Profile | | | | |
|---|-------------------------|--|--|--|
| First line treatment: | artemether/lumefantrine | | | |
| Rainy season: | December-April | | | |
| Population living in high-transmission areas: | 100% | | | |
| Children under-5 at risk: | 4,411,096 | | | |
| Pregnant women at risk: | 813,907 | | | |
| Incidence: | 352/1,000 (2013) | | | |
| Cases per year (2014): | 2,998,000 (2013) | | | |

USAID | DELIVER PROJECT

has procured commodities for Mozambique to

Protect against malaria with 10 million LLINs

Treat 44.6 million malaria cases with ACTs

Test 44.4 million suspected malaria cases with RDTs

Prevent malaria in pregnancy with 8.8 million tablets of SP

Maternal and Child Health Equipment in Mozambique

In 2003, less than half the women had assisted deliveries. By 2011, safe deliveries had increased to 54 percent.



During the project period, Mozambique has seen improvements in maternal health outcomes. The maternal mortality rate in 2011 was only 13.4; in 2003, it was 18.5 (DHS 2011, DHS 2003). Child health outcomes have seen similar improvements, with a decrease in the under-5 mortality by 5 percent (UNICEF 2013).

The project supported the procurement of maternal and child health (MCH) equipment, which is used at health centers, district hospitals, and referral hospitals for safe facility deliveries and postnatal care. Safe deliveries improved between 2003 and 2011, especially at the last mile of the supply chain. Between 2003 and 2011, assisted deliveries increased in rural areas by 10 percent and they remained around 80 percent during both time periods (Mozambique DHS 2003, Mozambique DHS 2011). Procurement of essential MCH equipment is essential if the project is to continue helping the country meet its goals of reducing maternal- and under-5-mortality.

USAID | DELIVER PROJECT Maternal Health Supplies Sets of equipment 1,750 shipped to ensure safe deliveries IUD kits shipped 1,250 to increase women's access Health facilities equipped to 150 provide appropriate newborn care



Technical Assistance

Technical Assistance Overview

Delivering high-quality health care to patients and clients requires health facilities and dispensaries to have a full supply of medicines and other health products. This calls for a well-functioning supply chain.

Using best practices and innovative approaches, the project develops and implements robust logistics solutions, fosters supportive commodity security environments, procures and ships health commodities, and partners with local organizations to build sustainable capacity.

In Mozambique, these interventions include—

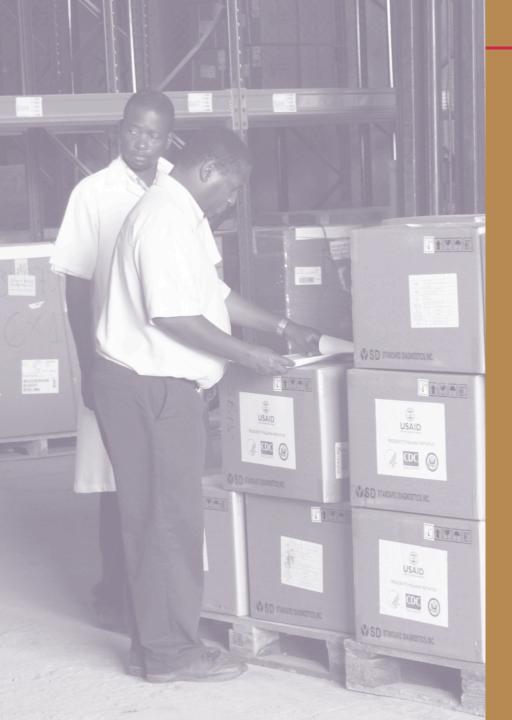
Strengthen Logistics System Performance Improving Quality and Use of Data Strengthening Warehousing and Inventory Management

Increase National Commitment to Commodity Security Strategic Planning for Forecasting and Procurement Planning Expanding Commodity Security Approaches Across All Essential Medicines

Build Sustainable Capacity

- Developing Human Resources for Supply Chain Information Systems
- Strengthening Decentralized Management Systems





Strengthen Logistics System Performance

To improve health outcomes in the countries where we work, the USAID | DELIVER PROJECT increases the availability of health products by strengthening supply chains and creating global commitment. These efforts are guided by the project's supply chain integration framework.

In the public health setting, an integrated supply chain links everyone involved in managing essential health commodities into one cohesive supply chain management organization, ultimately helping clients access quality healthcare services and supplies.

Improving Quality and Use of Data

By improving the country's LMIS, reporting rates increased dramatically in just two years.

Before 2012, a paper-based system was used to collect consumption data; reporting rates at the district level were as low as 17 percent. By 2015, the new LMIS and quarterly provincial meetings with logistics staff increased district consumption reporting to 99 percent. Feedback reporting also increased.

The project invested heavily in strengthening the existing Medications and Medical Commodities Information System (SIMAM). Originally a paper-based system, the project implemented an electronic LMIS (eLMIS) that collects data from the provincial level; and, increasingly, from the district level. Simultaneously, the project also increased data visibility and reporting through provincial quarterly feedback supply planning meetings with key logisticians from the provinces and districts.

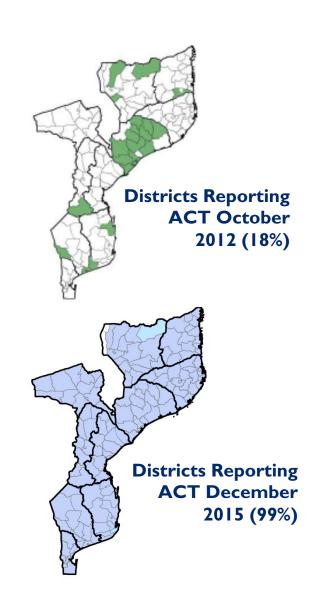
The eLMIS for the SIMAM was adapted from the HIV LMIS that SCMS created, allowing the same technology and visibility for all commodities. By 2014, SIMAM was installed in all the provincial warehouses and collected data down to the district level.

The project provided hands-on support and training to ensure that the system was

appropriately installed and used at the district level. By January 2016, only three years after its creation, nearly 90 percent of the district warehouses had SIMAM installed and were using it.

The eLMIS SIMAM, coupled with regular provincial data review meetings, strengthened data visibility down to the district level by increasing the collection of consumption data and helping key decision makers understand the data. Tracking consumption allows provinces and districts to better plan for their needs, actively reducing wastage, increasing response time to needed orders, and ensuring commodities are available to those who need them.

Increased availability of data has allowed CMAM and partners to create accurate national supply plans, conduct quantifications and forecasting, and plan for distribution or redistribution of all essential commodities. It has also greatly increased CMAM's credibility with the donor community; Mozambique's health system relies on their commodity support.



Strengthening Warehousing and Inventory Management

An innovative management system has streamlined distribution and reduced commodity losses.

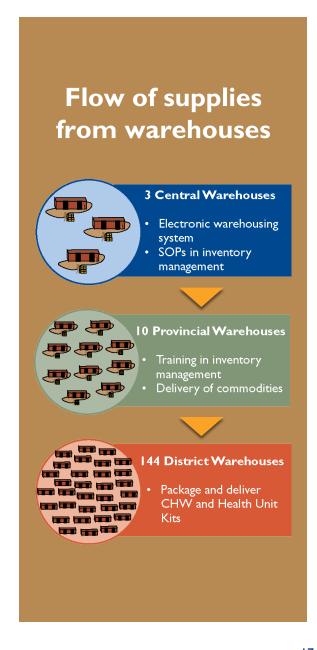
After an explosion that badly damaged the central warehouse in Maputo in 2008, the project, with partner SCMS, helped repair and upgrade the warehouse. They also rented three additional warehouses that would be used to manage the regional medicines. The project has leveraged this engagement to strengthen inventory management from the central level down to the facility level.

In 2010, basic support for warehouse space transitioned into transporting and monitoring the storage of malaria and reproductive health commodities to the provincial level. Project support reduced the diversions of stock to other locations and improved the controls at the central warehouse; this improved distribution between the supply chain levels.

These improved inventory management systems focused on timely delivery and accountability. They helped strengthen the efficiency and capacity of warehousing and commodity management systems, as well as improved the capacity of key CMAM personnel working with these systems.

At the national level, by upgrading the warehouse, the project consolidated all products from the 10 central warehouses to three, saving resources in storage costs. The project's intervention also prevented drug losses because of the improved storage and automated inventory management within the warehouse. They were reinforced by essential capacity building in both warehouse and inventory management.

At the provincial- and district-levels, the project improved distribution of essential medicines, in addition to warehousing, particularly for malaria commodities. A kitting system was developed to simplify inventory management for lower-level health providers. Since 2010, CHWs and health units received pre-packaged kits with malaria treatment and rapid tests; this allows for easy storage and inventory management at the lowest level of the supply chain.





Increase National Commitment to Commodity Security

Commodity security exists when every person is able to choose, obtain, and use quality contraceptives and other reproductive health products whenever they need them. Strong supply chains alone cannot ensure the availability of, and access to, these commodities.

To help countries create an enabling environment for reproductive health commodity security, the USAID | DELIVER PROJECT, with its counterparts, undertake a variety of policy and advocacy activities at the global , regional , and country levels.

Strategic Planning for Forecasting and Procurement Planning

Annual quantifications have eliminated gaps in donor commitment and improved coordinated planning.

The project has conducted annual quantifications across malaria and reproductive health commodities since 2007. Having a strong supply plan is key to ensuring that the needs at the last mile are met. The project has worked with the Commodities Technical Working Group, whose members include the MOH: World Health Organization (WHO); United Nations Populations Fund, United Nations Children's Fund; Global Fund to Fight AIDS, Tuberculosis, and Malaria: the World Bank: MOH programs; and CMAM, to review previous annual forecasts and actual consumption data and incorporate these data into the estimates for future

commodity needs. While data challenges still exist, improvements in the availability and quality of the LMIS data used in the annual quantifications have helped produce more reliable commodity forecasts and supply plans, and have increased confidence in the validity of the results.

The project's investment has built the capacity of the NMCP and the Family Planning Technical Working Group. These indigenous groups have begun to play a large role in quantification and forecasting, creating a well-trained and engaged supply chain workforce. Prior to project engagement, the MOH staff could not

conduct such an activity; quantifications were improvised, at best.

Now, supply planning is a routine, participatory process that results in documented forecasting and supply planning. Quantifications are done annually. Subgroups, working with development partners in a collaborative and documented process, complete the quarterly updates. This work has helped reduce the perception of overlapping donor commitments, and it has helped donors coordinate and optimize their inputs, as well as build internal capacity at the national level to appropriately plan for the country's supply needs.



Expanding Commodity Security Approaches Across All Essential Medicines

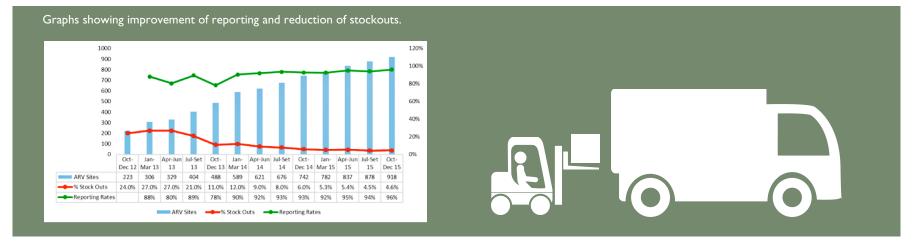
Adapting the reproductive health commodity approach to other health areas deepened the reach of commodity security structures.

The USAID | DELIVER PROJECT has built capacity and ensured contraceptive security since 2010. The Reproductive Health Working Group, which is responsible for monitoring contraceptive supply chain activities and needs, now uses data from the project's Procurement Planning and Monitoring Report to guide decision making for commodity needs. This effort, the result of project advocacy, has improved the continuous availability of contraceptives and reduced central-level stockouts. This approach, originally only used by the

Reproductive Health Working Group, has been expanded for condoms, contraceptive implants, malaria commodities; and, most recently, maternal health commodities.

Because of the success improving commodity security at the national level, the project replicated this approach at the provincial level by developing commodity security committees. These committees provide comparable oversight to the district level, increasing the visibility of commodity needs.

These efforts have led to the dramatic stockouts reduction across commodities supported by the project including, malaria, family planning, and HIV commodities. Although the project does not specifically mange ARVs, by ensuring the flow of data and commodities, engagement of the project at the provincial level led to maintaining high reporting rates and low stockout rates of ARVs, even when the number of antiretroviral sites was rapidly increasing.





Build Sustainable Capacity

An essential component of a robust health supply chain is the staff that implement the logistics tasks. To run effectively, public health supply chains require motivated, trained, and skilled staff, with competency in the various essential logistics functions; they must also be empowered to make decisions that positively impact health supplies and supply chains.

The goal of the project's capacity building activities is to strengthen human resources in public health supply chain systems in the developing world. A focus on developing a superior workforce enables organizations and individual staff to accomplish their customer service goals, ensuring higher performance among public health personnel and, therefore, increased availability of contraceptives and other essential health products.

Developing Human Resources for Supply Chain Information Systems

Since the inception of the LMIS, 3,719 health workers have been trained in logistics data management.

Prior to the project, supply chain staff had not received training in supply chain management since 2005. The lack of training, coupled with high attrition, meant that data collection and supply chain management had both suffered throughout the country. To address this need, the project designed a training curriculum to address all aspects of the supply chain; beginning in 2012, the project delivered these trainings.

In 2010 and 2011, the project developed standard operating procedures (SOPs) for CMAM staff who are responsible for managing commodities across all levels of the supply chain. The SOPs were rolled out using a formal training strategy to ensure they were disseminated nationwide.

The roll out of the new SOPs included a training-of-trainers and a national rollout training for 3,719 health workers nationwide. This was followed by ongoing on-the-job training for health workers and supervisors. In addition, two companion pieces—guidelines for both supervision and internal audits—were developed to reinforce the implementation of the new procedures after the trainings.

By implementing the SOPs at all levels of the supply chain, the management of health commodities through the public sector health supply chain improved, including both access to commodities and the capacity of supply chain staff. The project successfully maintained a well-trained supply chain workforce by providing periodic refresher trainings and training new staff during the quarterly report review meetings. Through the project's efforts, the district reporting rates increased from 18 in 2012 to consistently over 90 percent in 2015.



Strengthening Decentralized Management Systems

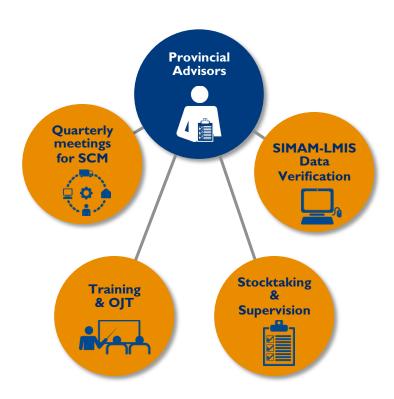
Appropriate supervision and management has increased reporting to 99 percent at the district level.

Prior to 2011, the provincial- and district—warehouse staff had not been trained and they received limited to no supervision. When the project began delivering commodities to the provincial level, and redefining staff SOPs, it was clear that the ongoing capacity building of the supply chain managers from the provinces and districts was essential to the continued improvement of supply chain efficiency.

With the central-level CMAM staff, the project sent supervision teams to provincial warehouses, selected district warehouses, and several health facilities within each district. These supervision visits provided on-the-job training for decentralized supply chain managers, as well as giving central-level management staff an opportunity to receive coaching from project staff. In addition to warehouse staff, provincial pharmacy managers accompany the teams to identify gaps, take immediate corrective steps, and collect information to plan longer-term preventive measures.

In addition to these supervision visits, the project seconded advisors in six provinces to provide daily capacity building support. These advisors work hand-in-hand with provincial supply chain staff, which improves communications between the districts and the provinces. The advisors also host quarterly technical meetings with key supply chain managers across the provincial- and district-levels.

All 10 provinces and Maputo city have hosted quarterly technical meetings and supervision visits—leading to district reporting rates that are consistently higher than 90 percent. Consumption data is now available, allowing CMAM to analyze and provide feedback to the provinces, as well as improve central ordering and forecasting.





The Way Forward

The Way Forward



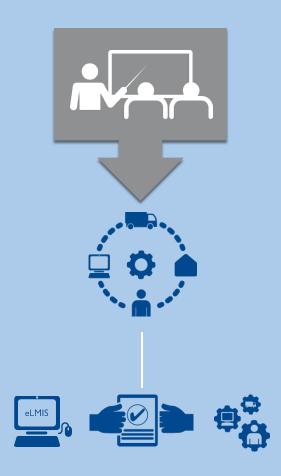
During the past eight years of project engagement, the capacity of CMAM staff has increased and they are increasingly independent as they manage the public health supply chain. However, gaps remain in their ability to safely manage the supply chain. It is essential for partners to continue working together, and directly with CMAM, to provide the needed capacity. Looking forward, consolidating the technical working groups that are critical to supply planning and forecasting would allow for training and on-the-job capacity building for more individuals and across commodities, and would maintain communications across stakeholders. These relationships are crucial to sustaining a cohesive and effective supply chain.

Through the approved Pharmaceutical Logistics Master Plan, MISAU has outlined its vision for the future of the pharmaceutical supply chain.

The plan provides an opportunity for all partners supporting the supply chain to be led by the government and provides for coordinated support.

The project has improved data visibility from the Central Medical Stores down to the health unit level. This work has contributed to vast improvements across all supply chain functions. If the effects are to continue to be beneficial, it is critical for this data visibility to be maintained and supported.

The commitment of the GOM to a strong supply chain is clear. To continue the strides made during the tenure of the project, all partners—including government, donors, and the private sector—must continue to coordinate across a shared understanding for the supply chain.



Coordinating partners to continue building the capacity of CMAM is essential to the success of the supply chain.



Additional Resources

Acronyms

MOH

Ministry of Health

| CHW | community health workers | NMCP | National Malaria Control Program |
|-------|--|-------|---|
| CMAM | Central Medical Stores | PMI | President's Malaria Initiative |
| DHS | demographic health survey | RDT | rapid diagnostic test |
| eLMIS | electronic management information system | SCMS | Supply Chain Management System |
| GOM | Government of Mozambique | SIMAM | Medications and Medical Commodities Information |
| LLIN | long-lasting insecticide-treated bed net | | System |
| LMIS | logistics management information system | SOP | standard operating procedure |
| | | USG | U.S. Government |
| MCH | maternal and child health | WHO | World Health Organization |
| MISAU | GOM Ministry of Health | | |

Further Readings

National Institute of Statistics, Mozambique Ministry of Health, USAID, and MEASURE DHS/ICF International. 2013. *Mozambique Demographic Health Survey, 2011.* Calverton, Maryland, USA: MISAU, INE and ICFI. Available at: http://dhsprogram.com/pubs/pdf/FR266/FR266.pdf

World Health Organization. No date. "Maternal and Perinatal Health Profile." Available at: http://www.who.int/maternal_child_adolescent/epidemiology/profiles/maternal/moz.pdf

Presidents Malaria Initiative. 2015. "Mozambique Country Profile." Available at: http://www.pmi.gov/docs/default-source/default-document-library/country-profiles/mozambique-profile.pdf?sfvrsn=16

President's Malaria Initiative. 2015. *Mozambique Malaria Operational Plan FY 16*. Available at: http://www.pmi.gov/docs/default-source/default-document-library/malaria-operational-plans/fy16/fy-2016-mozambique-malaria-operational-plan.pdf?sfvrsn=5

UNICEF. 2013. "Statistics." Available at: http://www.unicef.org/infobycountry/mozambique_statistics.html





USAID | DELIVER PROJECT

John Snow, Inc.
1616 Fort Myer Drive, 16th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480

Email: askdeliver@jsi.com Internet: deliver.jsi.com