



USAID | DELIVER PROJECT



Task Order 7 Annual Report

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PRESIDENT'S MALARIA INITIATIVE



Task Order 7

Annual Report

October 2015–September 2016

USAID | DELIVER PROJECT, Task Order 7

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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.

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Abstract

This report describes the activities and achievements of the USAID | DELIVER PROJECT, Task Order 7, from October 1, 2015, to September 30, 2016. The project works to improve the lives of men, women, and families by strengthening the supply chains that deliver health commodities, developing sustainable national capacity and ownership for operating the supply chain, and cultivating enabling environments for malaria products.

Cover photos:

A pharmacist explains how to take artemether-lumefantrine 6x1 to a patient at the Marrere Health Center in Nampula, Mozambique. Photographer: Arturo Sanabria for USAID | DELIVER PROJECT, 2015.

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

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Acronyms

ACT	artemisinin-based combination therapy
A/L	artemether/lumefantrine
AMP	Alliance for Malaria Prevention
ANC	antenatal care
AS/AQ	artesunate/amodiaquine
CNM	The National Center for Parasitology, Entomology and Malaria Control, Cambodia
CMS	Central Medical Store
COA	certificate of analysis
DFID	Department for International Development
DPLMT	Directorate of Pharmacy, Laboratories and Traditional Medicine
DPS	Directorate of Pharmacy Services
DRC	Democratic Republic of Congo
EIWG	Emerging Issues Working Group
eLMIS	electronic logistics management information system
EMFTWG	Emergency Medicines Fund Technical Working Group
EMLIP	Essential Medicines Logistics Improvement Program
ERP	enterprise resource planning
EUV	End-Use Verification
FDC	fixed-dose combination
FIND	Foundation for Innovative Diagnostics
FY	fiscal year
GHS	Ghana Health Service
GHSC-PSM	Global Health Supply Chain-Procurement and Supply Management
GMP	Global Malaria Program
IA	interim approach
JSI	John Snow, Inc.
LLIN	long-lasting insecticide-treated bed net
LMIS	logistics management information system
LMU	logistics management unit
MIP	Malaria in Pregnancy Working Group
MIS	management information system
MOH	Ministry of Health
MOHSW	Ministry of Health and Social Welfare

MOP	Malaria Operational Plan
MSD	Medical Stores Department
MSL	Medical Stores Limited
MSV	monitoring and supportive supervision Vvisits
NMCC	National Malaria Control Center
NMCP	National Malaria Control Program
NMEP	National Malaria Elimination Program
OAA	Office of Acquisition and Assistance
PMI	President's Malaria Initiative
PMP	Performance Monitoring Plan
PPMRm	Procurement Planning and Monitoring Report for malaria
PSI	Population Services International
QA	quality assurance
RBM	Roll Back Malaria
RDMA	Regional Development Mission Asia
RDT	rapid diagnostic test
SCM	supply chain management
SCMS	Supply Chain Management System
SCMU	Supply Chain Management Unit
SDP	service delivery point
SIAPS	Systems for Improved Access to Pharmaceuticals and Services
SP	sulfadoxine-pyrimethamine
STTA	short-term technical assistance
TA	technical assistance
TB	tuberculosis
TO	task order
TO Malaria	Task Order Malaria
TO7	Task Order 7
TWG	technical working group
UPS SCS	UPS Supply Chain Solutions
USAID	U.S. Agency for International Development
USG	U.S. Government
VCWG	Vector Control Working Group
WHO	World Health Organization

Executive Summary

The USAID | DELIVER PROJECT (the project) works to strengthen the supply chains that deliver health commodities, improve supply chain visibility and accountability, and build local capacity to sustain system performance.

This annual report covers October 1, 2015, to September 30, 2016; it describes the activities of Task Order 7 (TO7), also called Task Order Malaria (TO Malaria), under the USAID | DELIVER PROJECT indefinite quantity contract with John Snow, Inc. TO Malaria is part of the U.S. Government (USG) effort to fight malaria in sub-Saharan Africa through the President's Malaria Initiative (PMI). PMI is a joint initiative led by the U.S. Agency for International Development (USAID) and the Centers for Disease Control and Prevention. The initiative worked in 19 sub-Saharan African-focus countries and the Mekong region. TO Malaria had a long-term presence in 12 of the PMI-focus countries (Democratic Republic of Congo [DRC], Ghana, Liberia, Madagascar, Malawi, Mali, Mozambique, Nigeria, Rwanda, Tanzania, Zambia, and Zimbabwe); the Regional Development Mission Asia (RDMA); and the three USAID malaria non-focus countries (Burkina Faso, Burundi, and South Sudan).

TO Malaria had three main objectives, under which all activities were organized: 1) improve, implement, and expand USAID's provision of antimalarial commodities to country programs; 2) strengthen in-country supply systems and their capacity for managing antimalarial commodities; and 3) improve global supply and the availability of antimalarial commodities. The level of effort varied across the objectives: 50 to 60 percent for Objective 1; 30 to 40 percent for Objective 2; and 5 to 7 percent for Objective 3. To achieve these objectives, TO Malaria partnered with PATH; Crown Agents Consultancy, Inc.; Imperial Health Science (IHS, formerly called RTT); UPS Supply Chain Solutions (UPS SCS); Logenix International, LLC; MEBS Global Reach, LLC; FHI 360; The Manoff Group, Inc.; 3i Infotech; Foundation for Innovative Diagnostics (FIND); Social Sectors Development Strategies, Inc. (SSDS); VillageReach; and Population Services International (PSI).

Objective 1: Improve, Implement, and Expand USAID's Provision of Malaria and Related Commodities to Programs Worldwide

Timely, Transparent, Cost-Effective Procurement of High-Quality Malaria Products

A principal activity of TO7 was to support PMI by procuring malaria commodities in response to USAID Missions' requests, which were based on the needs outlined in the yearly Malaria Operational Plans (MOPs). During fiscal year 2016 (FY16), we processed new requests for procurement assistance from 13 countries: Angola, Burma, Burundi, Ghana, Guinea, Liberia,



A box of malaria rapid diagnostic tests.

Photo: Arturo Sanabria for USAID | DELIVER PROJECT, 2014.

Malawi, Mozambique, Rwanda, South Sudan, Tanzania, Uganda, and Zambia. Additional procurement orders for countries declined as the project came to an end.

A total of 269 orders were placed with vendors, for a total value of U.S. \$110.9 million (commodity cost only). The project transferred 38 orders to the new project.

From October 1, 2015–March 31, 2016 USAID | DELIVER PROJECT procured—

- **17.2 million** sulphadoxine pyrimethamine tablets for intermittent preventive treatment in pregnancy
- **25.17 million** long lasting insecticide treated bed nets (LLINs)
- **38.8 million** artemisinin based combination therapy treatments
- **75.7 million** rapid diagnostic tests (RDTs).

Efficient and Secure Delivery of Procured Commodities



Two staff members take a break from inventory review in Margibi, Liberia.

Photo: Steve Perry for USAID | DELIVER PROJECT, 2015.

From October 2015 through September 2016, TO7 forwarded commodities to support malaria programs in 24 countries: Angola, Benin, Burkina Faso, Burundi, Cambodia, DRC, Ghana, Guinea, Kenya, Laos, Liberia, Madagascar, Malawi, Mali, Mozambique, Myanmar, Nigeria, Rwanda, Senegal, South Sudan, Tanzania, Uganda, Zambia, and Zimbabwe.

The freight team coordinated the in-country distribution of ACTs and LLINs to several states in DRC and Nigeria; ACTs and RDTs in Angola; and ACTs, RDTs, and severe malaria kits (SMKs) in South Sudan. The freight team also coordinated warehousing in South Sudan.

Provision of High-Quality, Safe, and Effective Malaria Products

The project, through the quality assurance (QA) team, consistently works to ensure that high-quality, safe, and effective malaria products are provided. During the reporting period, the QA team managed pre-shipment inspection and testing for 69 orders of LLINs and 44 orders of RDTs. TO7 contracted with FIND to support lot testing of RDTs through World Health Organization (WHO) laboratories. The QA team reviewed the manufacturer's certificates of analysis (COA) for all batches of Coartem[®] that were procured by the project (183 batches over 27 orders). FHI 360 reviewed COA for every batch of artesunate/amodiaquine (AS/AQ) procured from a manufacturer, performed chemical assay testing, and subjected these batches to near-infrared technology analysis before releasing the orders for shipment. Seventy batches were tested for 29 orders. FHI 360 managed sampling, inspection, and testing for a total of 723 batches of generic artemether/lumefantrine (AL), severe malaria drugs, and various essential medicines.

Management Information Systems

The management information systems (MIS) team supported the ongoing operations of TO7 through continual MIS availability and providing up-to-date and accurate procurement and shipment information. Day-to-day operations were supported by recording and providing commodity needs for management review by country and recipient program, shipment requests by country and recipient program, financial accounts by country and funding source, and the status of shipments.

Objective 2: Strengthen In-Country Supply Systems and Capacity for Effective Management of Malaria Commodities

Strengthening in-country supply systems and building greater capacity for improved management of malaria commodities at the local level are critical to the success of TO Malaria and to reach PMI's goal of working with PMI-supported countries and partners to further reduce malaria deaths and substantially decrease malaria morbidity with long-term goal of elimination. During FY16, most country offices transitioned to GHSC-PSM,

or the GHSC | Technical Assistance project. Most country offices ended technical activities in June 2016; continuation of the technical work will be assumed by the relevant follow-on project, or in some cases the host country governments.

Improve System Performance Ensuring that Malaria Products Are Available When and Where They Are Needed

TO Malaria strengthens routine logistics systems in several countries (Burkina Faso, Ethiopia, Mozambique, Nigeria, Tanzania, Zambia, and Zimbabwe); supports augmented systems in Angola, Ghana, Liberia, Malawi, and South Sudan; supports a system targeting nongovernmental organizations (NGOs) and faith-based organizations in Madagascar; and provides overall technical assistance for system strengthening in all project countries.

Highlights

- **Ethiopia:** supported the integration of malaria commodities into the Integrated Pharmaceutical Logistics System, and designing a resupply calculation that accounts for the seasonal demand of malaria commodities.
- **Ghana:** provided central-level warehousing and quarterly distribution services to Regional Medical Stores and teaching hospitals.
- **Liberia:** conducted routine distribution of malaria commodities to all public facilities in five counties, including Montserrado. Stockout rates have declined significantly.
- **Nigeria:** delivered malaria commodities through last mile distribution in 7 states, and the Direct Delivery and Information Capture system in four states.
- **South Sudan:** worked with a range of stakeholders to distribute ACTs and RDTs to all counties, including conflict states.
- **Zambia:** rolled out the Essential Medicines Logistics Improvement Program Hybrid (EMLIP) system; 73 percent of districts are now included in EMLIP.
- **Zimbabwe:** supported quarterly distribution of malaria commodities to all provinces in the country through the Zimbabwe Informed Push and Zimbabwe Assisted Pull systems. Delivery coverage for these systems is 99 percent.

The TO also supported LLIN distribution in large-scale national-level campaigns and via routine distribution.

Highlights

- **Burundi:** distributed almost 300,000 LLINs through routine distribution.
- **DRC:** delivered 89,500 LLINs to 37 health zones in hard-to-reach areas in less than one month.
- **Ghana:** transports LLINs from the ports to district educational offices in support of the national school-based distribution. The project also supported the distribution of 4.3 million LLINs as part of the point mass distribution.
- **Mozambique:** stored and transported more than 3 million LLINs to regional warehouses. The project also installed 52 40-foot shipping containers in selected districts throughout the country.

Improve Visibility at All Levels of the Supply Chain, from Central to the Facility and Community Health Worker

End-Use Verification activity

The PMI End-Use Verification (EUV) activity is a health facility survey that captures information about malaria product availability, diagnosis, and treatment at public health facilities. The data generated provide visibility of important logistics and case management information. The EUV is routinely implemented by the project in eight countries. This activity was transitioned to GHSC | GHSC-PSM.



Photo : USAID | DELIVER PROJECT, 2015.

Procurement Planning and Monitoring Report for malaria

The Procurement Planning and Monitoring Report for malaria (PPMRm) provides quarterly visibility of stock levels of ACTs, sulfadoxine-pyrimethamine (SP), and RDTs in 24 countries. The report also covers key commodity security updates, providing a detailed snapshot of activities and accomplishments in each country during the quarter. This activity was transitioned to GHSC-PSM, and was managed and implemented by the new project for the FY16 fourth quarter report.

Pharmacy technician at work in Rwanda, 2015.

Country Highlights

- Burkina Faso: implemented and evaluated a mobile phone application by community health workers, which improves timely reporting.
- Ethiopia: managed the Health Commodity Management Information System Dashboard, which allows users to access live commodity data from across the supply chain network.
- Malawi: ran the Parallel Supply Chain, which continued to conduct 100 percent on-time delivery. The project continued to retain copies of signed proofs of delivery (PODs) containing specific batch numbers for the commodities distributed to enhance commodity tracking.
- Rwanda: supported the implementation of the electronic logistics management information system (eLMIS), with real-time visibility of stock levels and consumption. On average, 84 percent of facilities update their consumption data on time in the eLMIS.
- Laos: led the LMIS rollout efforts and launched the eLMIS on the Open Data Kit (ODK) platform, which allows for bi-weekly reporting of stock information at the provincial and district levels.
- Tanzania: after completing the national rollout of the eLMIS, shifted focus to transferring knowledge and building sustainable structures to support the continued functioning of the system.
- Zambia: migrated from Supply Chain Manager to the eLMIS.

Strengthen the Accountability of In-Country Supply Chains that Manage Malaria Products

Country Highlights

- Malawi: continued to conduct spot checks during and after the distribution process to ensure that commodities are distributed according to schedule to intended facilities. There was 100 percent compliance by the project's transportation and warehousing sub-contractors.
- Nigeria: provided technical support to Commodity Management Audits, including sampling of distribution points; reviewing the reconciliation reports and providing guidance on use of the data collection tools; and resolving challenges in obtaining the LLIN supply chain tracking tools used during the replacement campaign.
- Tanzania: designed the Results-Based Financing (RBF) scheme for Medical Stores Department, and conducted baseline assessment of RBF indicators, which include order fill rate, on-time delivery rate, put away accuracy, inventory accuracy, order lead time, damaged or expired commodity rate, and fleet management.
- Zambia: continued support to the MOH and the National Malaria Control Center (NMCC) in conducting joint monitoring supportive supervision visits to facilities. The visits included review of LMIS forms and provision of on-job-training for facilities with logistics challenges to ensure that malaria commodities were always available.

Bridge the Gap between NMCPs and Supply Chain Operators to Improve Core Supply Chain Functions

The project works to bridge the gap between NMCPs and supply chain operators by leading and/or supporting a range of activities including quantification, coordination groups, supply chain strategy development, and logistics management units.

Country highlights

- Cambodia: continued to build The National Center for Parasitology, Entomology, and Malaria Control (CNM) staff capacity in forecasting and supply planning methodologies, programmatic assumption review, and quantification updating processes.
- South Sudan: organized the Emergency Medicines Fund Technical Working Group (EMFTWG), a critical forum for bringing partners and stakeholders together to share EMF information and ensure visibility into the supply chain process.
- Burma: supported the development of the Myanmar Ministry of Health National Health Supply Chain Strategy for Medicines, Medical Supplies, and Equipment 2015–2020. The implementation of this strategy will have significant impact on implementing partners and the national program as many, if not all supply chain activities are expected to be absorbed into a new MOH Directorate of Supply Chain.
- Ghana: The project supported the Interim Management Team to revise and update the Supply Chain Master Plan (SCMP) and associated implementation plan. The revised SCMP has been handed to the MOH

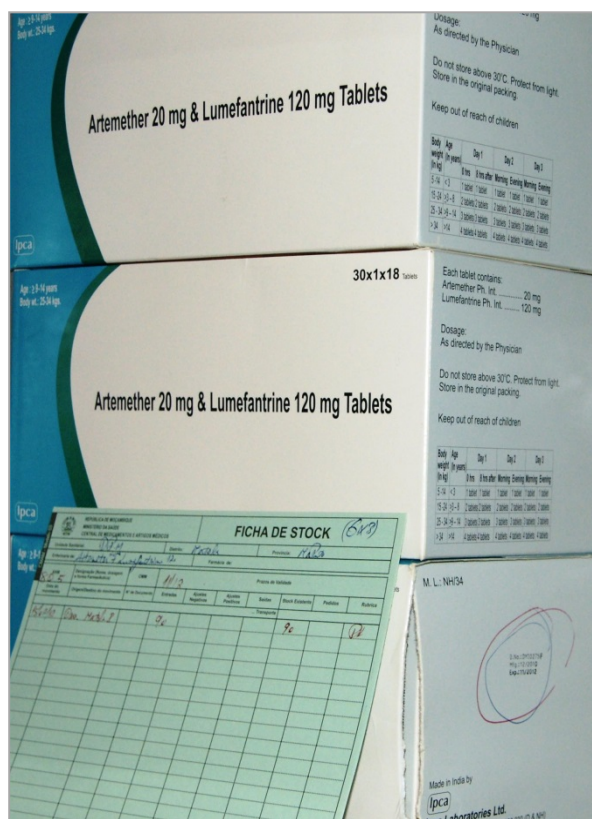
and SCMP steering committee and will inform the development of a cabinet memo on government approval for the setup of a supply chain management entity.

- Tanzania: LMU staff visited 1,577 health facilities in the eight Medical Stores Department (MSD) zones and two sales points, providing on-the-job training to 3,051 health care workers, 2,704 (88.6 percent) of whom were deemed competent. Follow-up with the 347 (11.4 percent) will be undertaken to strengthen their capacity to manage commodities. A total of 443 facility-to-facility redistributions were made during the supervisory visits.

After Systems Meet Performance Levels, Build Local Capacity to Sustain System Performance

Country Highlights

- DRC: supported a supply chain management principles training for 26 PMI-supported health zones. A total of 44 participants increased their understanding of logistics and stock management best practices.
- Mozambique: trained a total of 459 health workers: 338 on the third edition of the Procedures Manuals for Medicine Management and 121 in the management of LLINs for distribution during antenatal care visits.
- Nigeria: conducted Malaria Commodity Logistics System (MCLS) training for 2,318 participants in 10 states. The project also provided technical assistance to the National Malaria Elimination Program (NMEP) to conduct training for 26 participants on the MCLS data aggregation tool in Kogi state.
- Zimbabwe: co-facilitated a training-of-trainers for case management on primaquine rollout to the 20 pre-elimination districts. The training equipped district personnel with skills in case management, enhanced surveillance, and use of low-dose primaquine, and emphasized the need to report adverse drug reactions and proper stock management.



A stock card for the antimalarial drug artemether/lumefantrine at a health facility in Mozambique.

Photo: Arturo Sanabria for USAID | DELIVER PROJECT, 2012

Objective 3: Improve the Global Supply of Malaria Commodities

Strengthen International Collaboration

In May 2015, the RBM board agreed to restructure the partnership to better align its efforts toward advancing the malaria agenda. In April 2016, RBM announced its new board, which will oversee implementation of the new architecture. TO Malaria was an active member in several RBM working groups, including the Vector Control Working Group (VCWG) and the Malaria in Pregnancy Working Group. The project is also a partner in the Alliance for Malaria Prevention (AMP) and attended and presented at the AMP annual and core group meetings. In November 2015, the project presented five posters at the annual ASTMH meeting in Philadelphia.

Conduct Analysis of Demand, Supply, and Pricing Issues Affecting the Global Market for Malaria Products

Task Order Malaria continues to analyze the malaria marketplace and adjusts its procurement strategy accordingly. Though the market for malaria commodities has seen many technical breakthroughs in the past five years, it was affected by instability and supply shortages, which had a direct impact on in-country programs. Analyses include LLIN vendor production capacity and anticipated demand, trends in commodity pricing, and vendor performance. During this period of transition, the project shared relevant documents with the GHSC-PSM team.

Objective I: Improve, Implement, and Expand USAID's Provision of Malaria and Related Commodities to Programs Worldwide

Timely, Transparent, Cost-Effective Procurement of High-Quality Malaria Products

Procurement

A principal activity of Task Order 7 (TO7) is to support the President's Malaria Initiative (PMI) by procuring malaria commodities in response to requests placed by the U.S. Agency for International Development (USAID) Missions based on the needs outlined in the yearly Malaria Operational Plans (MOPs). As we transition to the new PMI procurement mechanism in the final year of the project, the number of new orders the project has received has declined.

Operational Scale

During FY16, we received 23 new procurement requests from 13 countries: Angola, Burma, Burundi, Ghana, Guinea, Liberia, Malawi, Mozambique, Rwanda, South Sudan, Tanzania, Uganda, and Zambia. A total of 269 orders were placed with vendors for a total value of U.S. \$110.9 million (commodity cost only). The value of orders placed during this period is slightly more than half (55 percent) of what was placed in the previous fiscal year (12 months). This decline reflects the transition to the new Global Health Supply Chain | Procurement and Supply Management (GHSC-PSM) mechanism. During the transition, the project transferred 38 orders to GHSC-PSM as the products would not be available in time for the orders to be placed and delivered under the USAID | DELIVER PROJECT.

From October 1, 2015–September 30, 2016, the USAID | DELIVER PROJECT procured:

- 17.2 million sulphadoxine-pyrimethamine (SP) tablets for intermittent preventative treatment in pregnancy (IPTp).
- 2.18 million vials of artesunate injection for treatment of severe malaria.
- 4.3 million sulphadoxine-pyrimethamine + amodiaquine (SP/AQ) blisters for seasonal malaria chemoprevention.
- 25.17 million long-lasting insecticide-treated bed nets (LLINs).
- 38.8 million artemisinin-based combination therapy (ACT) treatments: 22.9 million treatments of artemether/lumefantrine (A/L), and 15.9 million treatments of artesunate/amodiaquine (AS/AQ).
- 75.7 million rapid diagnostic tests (RDTs).

The total value of commodities procured in FY16 is shown in figure 1. Figure 2 compares the values by commodity procured in FY15 and FY16. Figure 3 shows the total commodities procured FY07–FY16.

Figure 1. Total Value of Commodities Procured, by Type, FY16

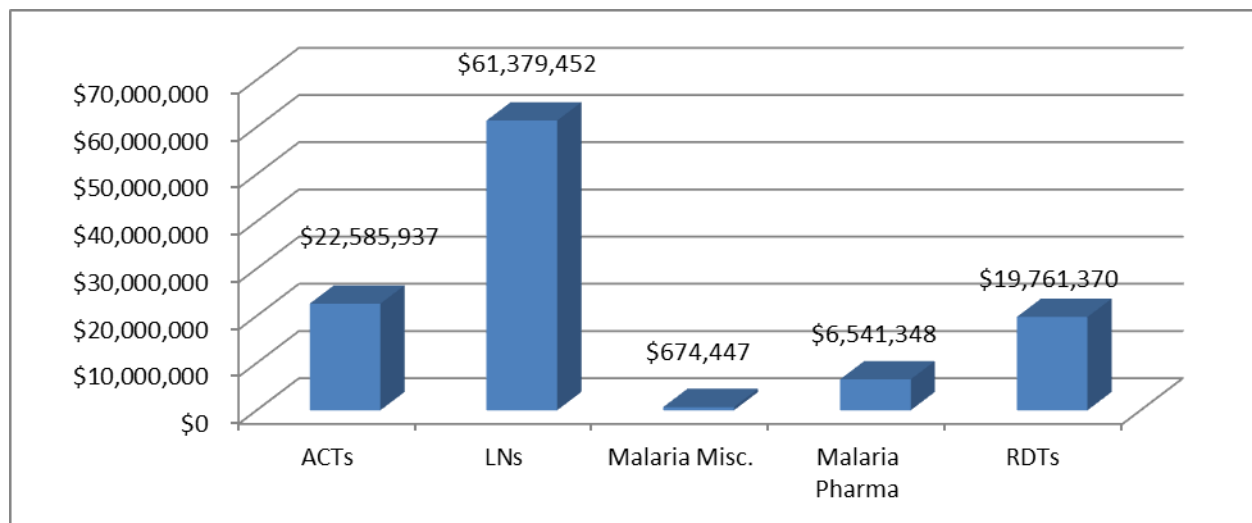


Figure 2. Comparison of Commodities Procured by Value FY15–FY16

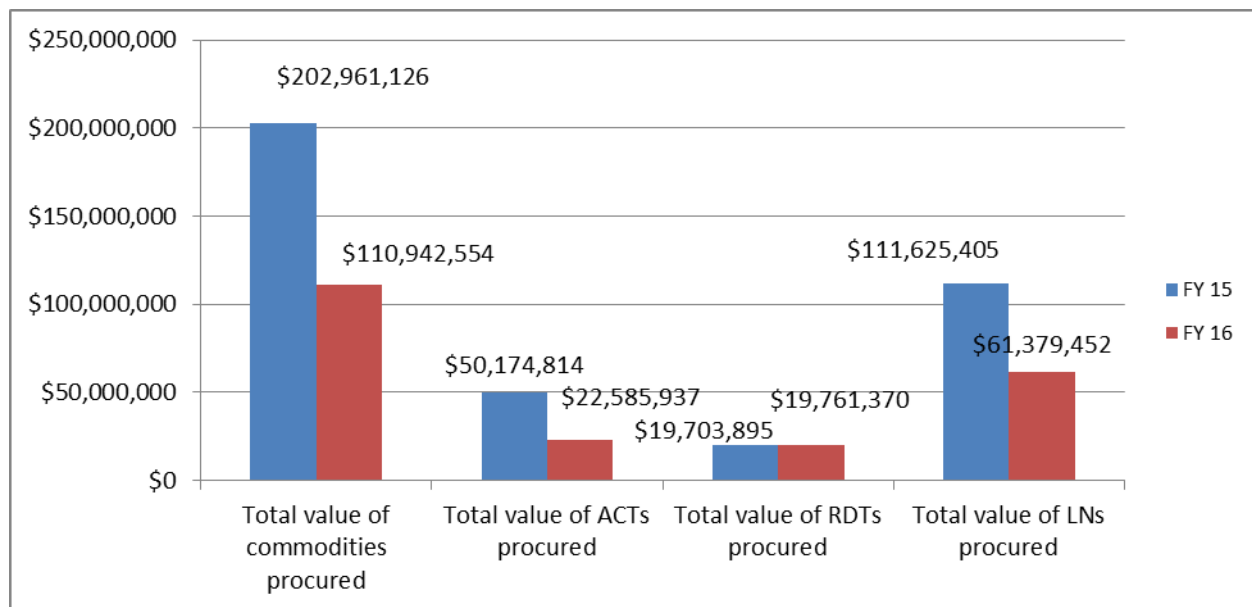
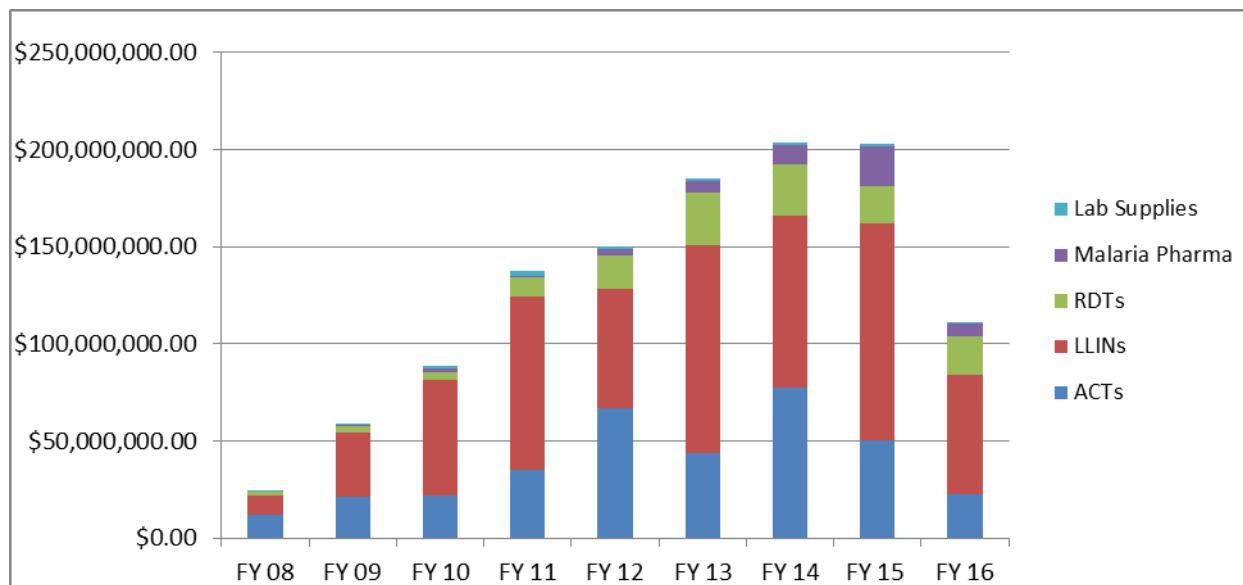


Figure 3. Total Commodities Procured, FY 2007–2016



During this period, we continued procuring commodities for Zambia using funding from the U.K. Department for International Development (DFID). With DFID funding in FY16, we procured 450,000 RDTs and 2.2 million ACTs for a total value of U.S. \$1.7 million (commodity cost only). These figures are included in the total procurement figures above. A complete report of DFID-funded procurement is included in appendix B.

ACT Stockpile

The ACT stockpile was established in 2012 to respond to emergency ACT orders, initially managing only A/L. The stock was stored in the Netherlands and ultimately included AS/AQ and A/L. Demand for the stockpile was low at the end of FY15 and beginning of FY16. In response, after lengthy discussions with PMI, the project cancelled its AS/AQ stock orders from December 2015 forward, lowered the amount of infant A/L, and increased the amount of adult A/L procured to better align with demand. In the latter half of FY16, demand began to increase. During the reporting period, TO Malaria processed 29 ACT orders from the stockpile, shipping 11.2 million treatments to requesting countries.

Inventory Transfer

As part of the transition to GHSC-PSM, TO Malaria transferred its remaining stock in the Netherlands to GHSC-PSM. Both projects had independent auditors undertake the count with representatives from both projects and the warehouse vendor observing. All parties agreed with the count and once approval from USAID's Office of Acquisitions and Approvals (OAA) was granted, the stock transferred to GHSC-PSM in September 2016. In addition to the stockpile inventory, country programs that managed stock on behalf of PMI and the country transferred any remaining stock to GHSC-PSM. The countries followed a similar process where initial counts were done by audit firms, OAA granted approval, and GHSC-PSM took possession. Ghana, Liberia, Malawi, Mozambique, and Nigeria transferred TO7 and Essential Medicine inventory by June 30, 2016. Zimbabwe transferred LLINs to GHSC-PSM in August 2016.

Procurement Scorecard and PMP Indicators

During the reporting period, the project continued to monitor system performance monthly using the scorecard to show results. The targets for this period are as follows: 85 percent or higher (green); from 84 to 65 percent (yellow); and 64 percent or lower (red). The indicator "received in-country by desired receipt date" was

in the yellow at 66 percent. This increased from 52 percent in the first six months of FY16. The reason that orders were received after the desired receipt date is primarily due to manufacturing and pre-clearance delays. Twelve Nigeria LLIN orders experienced manufacturer delays, and a fire and earthquake delayed LLIN orders to Burundi, Kenya, and Rwanda. Manufacturing delays from two ACT vendors impacted orders to Benin, Burkina Faso, Liberia, and Nigeria. During the reporting period we had 35 deliveries to DRC, which has a long and unpredictable pre-clearance process. Other countries including Benin, Kenya, Mozambique, and Uganda also experienced pre-clearance delays. Delays were also due to issues with quality assurance testing for artesunate suppositories, artesunate injectable, and AS/MQ. Over the reporting period, the supplier fill rate that tracks vendor performance fell just below the target, with 80 percent of the orders delivered on time and in the right quantity.

Table 1. PMP for the Procurement Process, October 1, 2015–September 30, 2016

Operational area	Indicator	Status
Monthly system scorecard implemented	Monthly scorecard available	Available monthly
Orders shipped and received on time (data from October 2015 to September 2016)	% of orders received by countries within a month of agreed date with the Mission	66
Suppliers deliver ordered commodities to satisfy contractual requirements	Supplier fill rate (contracted quantity on time)	80%
Respond to emergency orders	% of emergency orders responded to during the previous 12 months	8/8 = 100

Efficient and Secure Delivery of Procured Commodities

Freight Forwarding

From October 2015 through September 2016, Task Order 7 forwarded commodities to support malaria programs in 24 countries: Angola, Benin, Burkina Faso, Burundi, Cambodia, DRC, Ghana, Guinea, Kenya, Laos, Liberia, Madagascar, Malawi, Mali, Mozambique, Myanmar, Nigeria, Rwanda, Senegal, South Sudan, Tanzania, Uganda, Zambia, and Zimbabwe.

The freight team coordinated the in-country distribution of ACTs and LLNs to several states in DRC and Nigeria; ACTs and RDTs in Angola; and ACTs, RDTs, and severe malaria kits (SMKs) in South Sudan. The freight team also coordinated warehousing in South Sudan.

Shipment execution tasks include freight quote preparation, vendor door pickup, freight booking, shipment tracking, customs clearance, and final recipient delivery. The freight team, with the Customer Order Management team, updates the country-specific shipping instructions in ORION, which is part of the project's management information system (MIS). The project continues to use and improve the electronic data interface with the contracted freight forwarders—Logenix, MEBS, and UPS SCS—to update shipment milestones in ORION. Shipment milestones provide shipment visibility to users of the MIS website, which includes USAID staff.

Per the freight strategy for TO7, shipments are complete and bids provided by the contracted freight forwarders for all shipments, except when the vendor is expected to provide freight services (for which negotiations are made far ahead of time, as part of the RFQ); shipments from a vendor to a UPS warehouse

(these shipments are handled exclusively by UPS); shipments when USAID/Washington concur with the project's recommendation and justification for exclusive use of a freight forwarder to a specific country; and emergency shipments.

Table 2 shows the freight analysis. Figures are calculated based on the difference between the highest and the lowest bids received. Through continued bidding of shipments, the project obtained a cost savings of \$1,910,354 during FY16.

Table 2. Freight Analysis

Time period	Total savings	% savings over all
October–December 2015	\$738,326	31
January–March 2016	\$931,881	45
April–June 2016	\$201,987	32
July–September 2016	\$32,159	25

Quality Assurance

RDTs

The project, through the quality assurance (QA) team, consistently works to ensure that high-quality, safe, and effective malaria products are provided. During the reporting period, the QA team managed pre-shipment inspection and testing for 44 orders, representing over 72 million RDTs from three vendors. The QA team reviewed all test results before clearing an order for shipment. TO7 contracted with the Foundation for Innovative New Diagnostics (FIND) to support all lot testing of RDTs through the WHO laboratories. Lot testing for PMI included initial testing of 161 batches and 18-month stability of 311 batches, and was conducted by the Malaria RDT Quality Assurance Laboratory at the Research

Institute for Tropical Medicine (Philippines) and the Laboratory of Molecular Epidemiology at the *Institut Pasteur du Cambodge* (Cambodia). Results of initial pre-shipment testing were available after 5–28 days (average



Photo: Arturo Sanabria for USAID |
DELIVER PROJECT, 2015.

14) from sampling. The laboratories typically finish testing within five working days of sample receipt. The longest delays were caused by sample shipment and customs delays. No failures were reported for pre-shipment tests.

FIND reported the occurrence of buffer loss in individual buffer ampoules of point-of-care kits in samples that have been stored for stability testing for 32 batches from 10 different orders and all three suppliers. In most cases, units from affected batches were no longer present in-country. In the cases where units of the affected batches were found, they were collected and destroyed. No new point-of-care kits have been procured since this issue arose, and until very recently the WHO guidance recommended not procuring these kits. This has finally been revised and WHO now endorses the procurement of point-of-care kits.

In response to the issue of last year, when a high number of one vendor's RDT's had invalid results, two more rounds of confirmatory testing of that vendor's RDTs, not associated with a country, were performed this year. Samples were collected from various locations throughout Nigeria and sent to the WHO/FIND laboratory in Cambodia. In November, just 2 percent of the tested samples gave invalid results, indicating that the sample was not functioning properly. In March, none of the tested samples were invalid and there were minor issues only, including incomplete clearing and faint lines, which are often observed in a low percentage of tests.

LLINs

From October 2015 to September 2016, the QA team managed pre-shipment inspection and testing for 69 orders of LLINs representing over 30 million nets from three different net vendors. The QA team reviewed the inspection reports and all orders were released for shipment concurrently with laboratory testing.



Photo: Steve Gottesman for USAID | DELIVER PROJECT, 2015.

Woman collecting new LLINs from local health facility to protect her family in Bauchi, Nigeria.

One lot of 65,000 nets destined for Tanzania exceeded the WHO specification for deltamethrin content. This result was confirmed by the manufacturer, which agreed to replace the order with new nets. Further discussions between the QA partners and USAID concluded that the deltamethrin content on the nets was still safe for use, because it was lower than the specified concentration of another net that was deemed safe by WHO. Another destination was found for these nets, while the original client received the new nets that were compliant with WHO specifications.

During the reporting period, one product complaint was reported for orders. The complaint was about specification issues for part of an LLINs order in Rwanda. For details see the “Implementation Challenges” section of the report.

Complete test results were available within 11 to 78 days (average 43) after sampling. Testing times were longer in the spring and summer due to the workload in the laboratory. In all cases, testing was completed before the shipments arrived in-country, so that distribution could have been stopped in case problems were found. FHI 360 created Certificates of Conformance for each consignment after final review of all results.

Pharmaceuticals

Pharmaceuticals regulated by a Stringent Regulatory Authority

Pharmaceuticals that are regulated by an Stringent Regulatory Authority (SRA) did not require laboratory testing, according to approved standard operating procedures (SOPs) developed by FHI 360 and PMI's in-house clinical pharmacist. The QA team reviewed the manufacturer's Certificates of Analysis (COA) before shipment.

During this reporting period, the QA team reviewed COAs of 183 batches of Coartem for 27 orders. The QA team continued to perform identity testing using near-infrared spectroscopy. Of note, although Coartem is approved by an SRA and does not necessitate additional quality testing, use of these data points from the NIR technology retain samples from every batch to provide another layer of product confidence.

The QA team also reviewed the one batch of Eurartesim (DHA+PQP) by a pharmaceutical vendor. This product is approved by the European Medicines Agency, which is also an SRA and additional quality testing was not required.

Sanofi Artesunate+Amodiaquine

AS/AQ from a proven reliable vendor was tested concurrently with shipping; the QA team reviewed manufacturer-issued COAs for every batch before releasing the order for shipment. The supplier sent samples of every batch to the QA team, which then performed concurrent testing, using the manufacturer's test method. 70 unique batches were tested across 29 orders. Test results were available between 3 and 63 days (average 15) from sample receipt. Results of 67 out of 70 batches were available within 23 days or fewer. All results were compliant with the specifications.

Other pharmaceuticals

Other pharmaceuticals procured by the project included generic A/L, artemether injections, artesunate for injection, artesunate suppositories, generic AS/AQ, sulfadoxine/pyrimethamine plus amodiaquine (SP+AQ) tablets, SP tablets, and various essential medicines. These products were tested pre-shipment by independent laboratories. Some wholesalers arranged for testing and shared their test reports. For orders from other wholesalers, the QA team arranged for sampling, inspection, and testing at KABS Laboratories in Canada or North-west University in South Africa. Both are WHO pre-qualified quality control laboratories. The QA team reviewed all results before releasing the orders for shipment, consistent with approved SOPs for pharmaceuticals without SRA approval or WHO pre-qualification. A total of 723 batches were tested.

Two batches of artesunate suppositories were rejected, one for assay, and one for related substances. These batches were not replaced, because all wholesalers said that the manufacturer involved had stopped taking new orders. Questions about the applied test method went unanswered by the manufacturer, causing major delays for another batch that was finally deemed acceptable 316 days after it was sampled.

One batch of cephalexin capsules was also rejected because the mass uniformity was not compliant with the U.S. pharmacopeia specification.

Test results were available 24–316 (average 71) days after sampling. Main reasons for delays were occasional problems clearing samples through customs, out-of-specifications investigations (mentioned above and several sterility investigations of artesunate injections), and the noted issues with artesunate suppositories. Without considering investigations, testing was completed in 93 days at most, 50 on average. The longest testing times were for sterility testing. Forwarding a part of the samples to a microbial laboratory, with the occasional customs delays, as well as the length of the sterility test itself, added considerable time to the turn-around.

Table 3. PMP Indicators for the QA Process October 1, 2015–September 30, 2016

Support area	Operational area	Indicator	Status
Quality assurance and quality control	Quality assurance and quality control procedures established and implemented	% of LN shipments with pre-shipment test reports available	100
		Median time and range (in days from sampling) required for pre-shipment LN test reports	43 days Range: 11–78 days
		% of RDT shipments with pre-shipment test reports available	100
		Median time and range (in days from sampling) for up-to-date RDT test reports	14 days Range: 5–28 days
		% of ASAQ shipments with pre-shipment certificates of conformance	100
		Median time and range (in days from sample receipt) required for pre-shipment ASAQ test reports	15 days Range: 3–63 days
		% of other pharmaceuticals shipments with pre-shipment certificates of conformance	100
		Median time and range (in days from sampling) required for pre-shipment test reports for other pharmaceuticals	71 days Range: 24–316 days

Management Information Systems

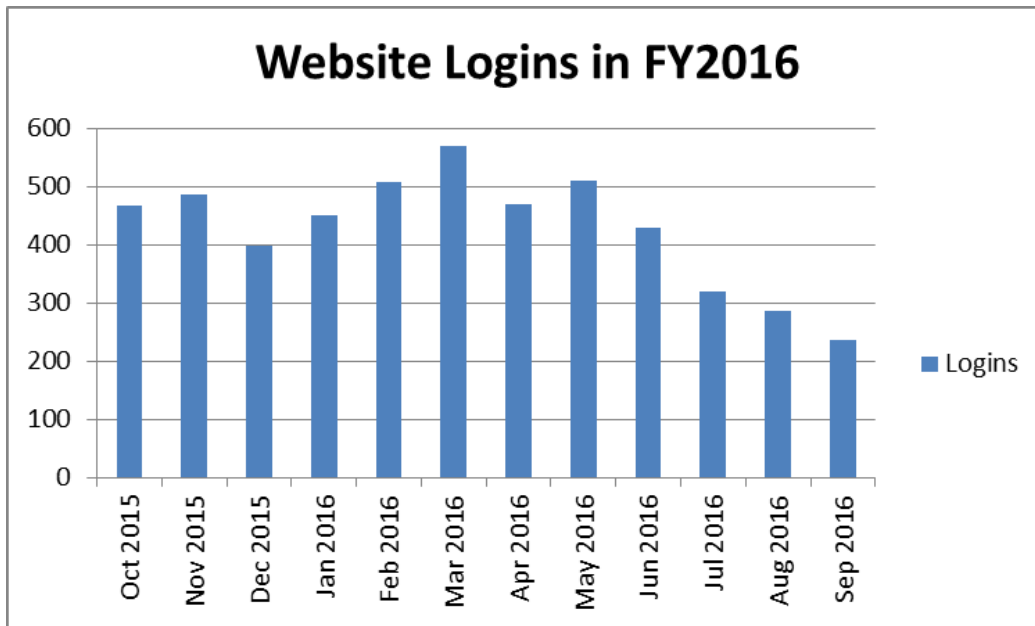
The MIS team supported the ongoing operations of TO7 in FY16 by making sure the MIS was continuously available and providing up-to-date, accurate procurement and shipment information. This included providing access to task order publications and information, shipment requests by country and recipient program, financial accounts by country and funding source, and the status of shipments. The MIS was available to authorized users from JSI, the USG and partners, both centrally and in the field, via a secure web-based user interface known as the USAID | DELIVER PROJECT website.

The MIS is managed according to project management standards as identified by the Project Management Institute using a standard system development life cycle (SDLC). Periodic updates of the MIS are provided to ensure customer satisfaction based on requests from internal and USG sources. These periodic updates are directed and prioritized by the CCB (Change Control Board), which provides for input from USAID and other stakeholders and assesses the impacts of individual issues and prioritizes resource allocation.



MIS reliability, availability, and ease of secure access are measured against a service-level agreement. The project met or exceeded all standards in FY16. Following are a set of graphs showing key MIS measurements during the reporting period.

Figure 4. Website Logins in FY16



In FY16, the USAID | DELIVER PROJECT website had an average of 428 unique login sessions per month. In FY15 the average was 565.

Figure 5. Website Visits in FY16

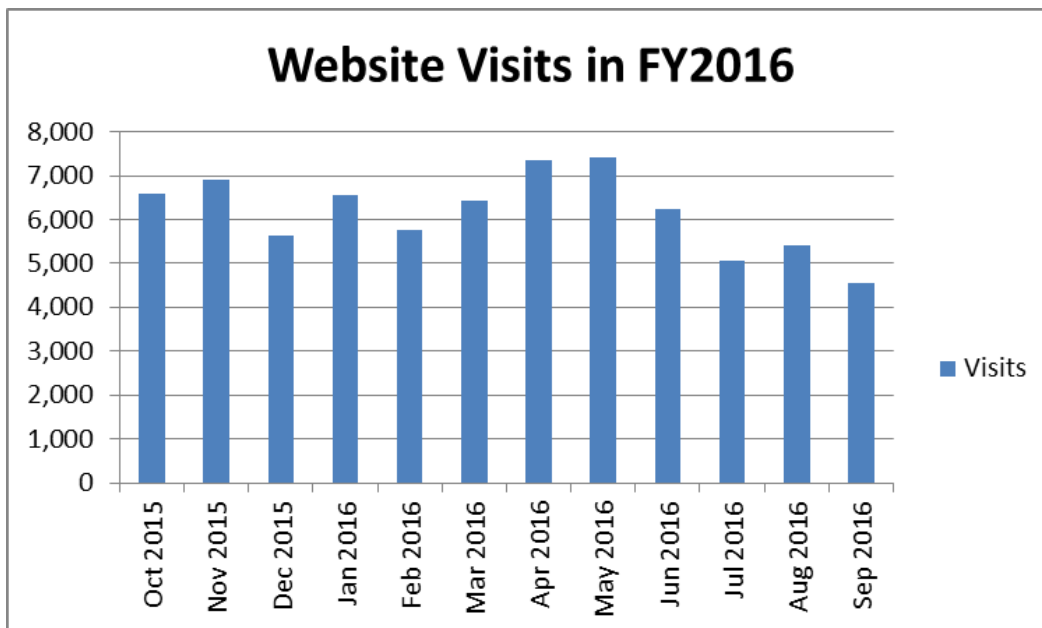


Figure 5 shows the number of times that users accessed the USAID | DELIVER PROJECT website to obtain project, shipment or financial information. The average monthly visits were 6,161 compared with 7,016 in

FY15. The shipment data displayed on the My Commodities portion of the website is updated three times each business day to provide the most current status.

Figure 6. Website Uptime in FY16

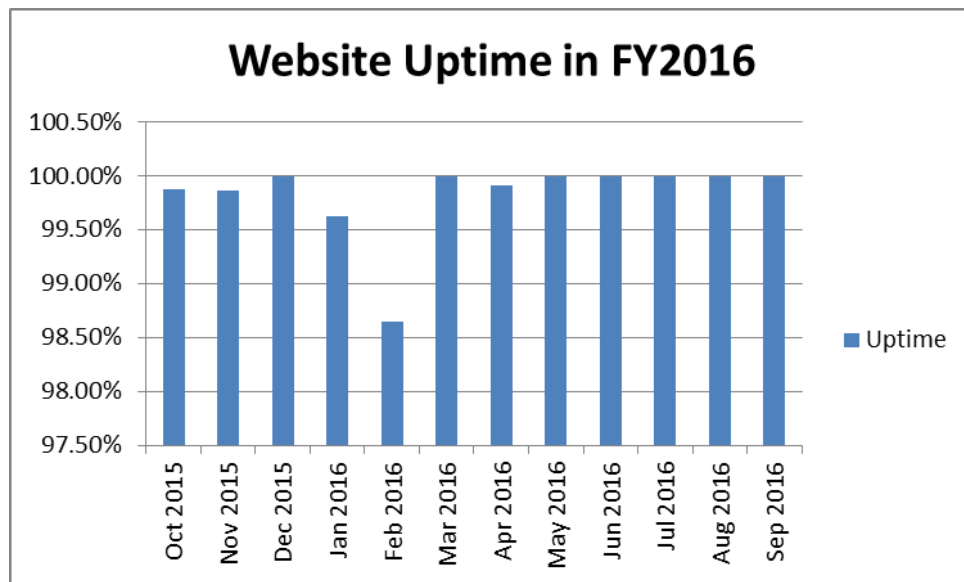


Figure 6 shows the percentage of time per month that the USAID | DELIVER PROJECT website was available for access, excluding scheduled maintenance on the weekends. The standard is 99.50 percent availability and was exceeded each month but one during the reporting period, with an annual average of 99.83 percent availability.

Maintenance Work Completed

The MIS team modified the ORION ERP (Enterprise Resource Planning) system and the USAID | DELIVER PROJECT website to improve data availability and operational productivity. This an ongoing effort was completed along with day-to-day maintenance support of operations including ad hoc queries, user assistance, anomaly research and resolution, and pre-project definition and estimation. The following are the highlights of the past year's enhancements.

Gain loss for warehouse shipments

We implemented new rules for the allocation of batches to warehouse shipments to ensure that batches are 'sold' to clients at the same price they were purchased from a supplier. This minimized the chance a gain or loss on a sale that would have to be adjusted later through a credit or debit to the client account.

Warehouse batch selection and reporting

We added several new batch management features to improve allocation of batches to warehouse shipments, and a new batch aging report to allow easier identification of batches at risk of reaching shelf-life thresholds.

View shipments and shipment history report improvements

We added a multi-select option for each 'Item' selection field in the View Shipments and Shipment Summary Reports sections of My Commodities. This allows users to select multiple individual items for all seven reports

that have the 'Item' selection available. This feature will facilitate exporting of reports in XLS and PDF formats.

System performance improvements

We tuned the warehouse data refresh queries so the refresh happens 70 percent faster, improving overall response time for the ORION ERP and providing data updates more quickly for My Commodities.

Support to the transition to GHSC-PSM

Since January 2016 the MIS team has responded to numerous data requests from USAID and GHSC-PSM as part of the transition to the new GHSC-PSM mechanism:

- Developed special queries and reports, responded to questions about data that are in the business and analytics tool, and attended meetings to discuss the data provided.
- Made changes to ORION and the USAID | DELIVER PROJECT website to allow internal and external users to identify and manage shipments where the project manages the shipment from purchase to delivery, when the project manages purchasing and GHSC-PSM shipping, and GHSC-PSM is responsible for purchase and delivery.
- Completed changes to ORION and the USAID | DELIVER PROJECT website to correctly account for and display the transfer of inventory to GHSC-PSM.
- Updated the website to notify users that the data might be incomplete due to the transition to GHSC-PSM.
- Transitioned the PPMRm software and hosting to GHSC-PSM.
- Closed all outstanding service requests for the web site.
- Completed a financial balance sheet for malaria.

Support to the Business Intelligence and Analytics Contractor

We continued to provide USAID and business intelligence and analytics contractor with production data. In addition, we implemented a change in the data feed to Intellicog to identify shipments that are project-managed, GHSC-PSM-shipped, and GHSC-PSM-managed.

The MIS provides essential support to TO Malaria by delivering management information and detailed reports to aid procurement, supply chain management, and all other aspects of ensuring the correct commodity is in the correct place, at the correct time, and at the lowest possible price.

Table 4. PMP Indicators for the MIS, October 1, 2015–September 30, 2016

Support area	Operational area	Indicator	Status
MIS	Availability of USAID DELIVER PROJECT website	Percentage of time the USAID DELIVER PROJECT website is available	99.83
	Total number of visits	Total number of visits to the USAID DELIVER PROJECT website	73,931
	Number of logins	Total number of logins to the USAID DELIVER PROJECT website	5,135

Objective 2: Strengthen In-Country Supply Systems and Capacity for Effective Management of Malaria Commodities

Strengthening in-country supply systems and building greater capacity for improved management of malaria commodities at the local level are critical to the success of TO Malaria and to reaching the goals of PMI. These actions ensure that commodities procured and delivered under Objective 1 activities and through other key malaria partners reach those in need. This section focuses on the critical areas of supply chain assistance: 1) improving system performance; 2) improving visibility of data at all levels; 3) strengthening accountability for the products managed; 4) bridging the gap between programs and key supply chain entities, such as NMCPs and Central Medical Stores (CMSs); and 5) and building capacity to sustain performance. Other core-funded activities include country stories, supply chain costing, and PPMRm.

During FY16, most country offices transitioned to GHSC-PSM, or the GHSC | Technical Assistance project. Most country offices ended technical activities in June 2016; continuation of the technical work described here was or will be assumed by GHSC-PSM, another mechanism, or in some cases the host country governments. In addition, relevant technical documents were handed to GHSC-PSM. The country offices drafted disposition lists for all non-expendable property and received approval from the Missions. Selected property was given to GHSC-PSM.

Improve System Performance Ensuring That Malaria Products Are Available When and Where They Are Needed

Country Highlights

Burma

Project staff, with counterparts from SCMS, participated in planning and co-facilitating the implementation launch of the Myanmar MOH National Health and Sports Supply Chain Strategy for Medicines, Medical Supplies, and Equipment 2015–2020 (NHSCS). The primary purpose of this meeting was to brief the Minister of Health and Sports (MOHS) focal persons for each of the six functional areas of the strategy on their respective terms of reference (TORs) and for a wider audience to hear the strategy endorsed by the MOHS.

Cambodia

The project facilitated the procurement and installation of a server for the National Center for Parasitology, Entomology and Malaria Control (CNM) to facilitate the monitoring and evaluation of malaria-related data.

Ethiopia

The project continues to support the integration of malaria commodities into the Integrated Pharmaceutical Logistics System (IPLS). Toward this goal, the project developed new report and request forms preprinted with malaria commodities, and printed and distributed these report and request forms during routine supportive supervision visits. The project also revised the standard operating procedure (SOP) manual, trainer's guide and participant workbook for IPLS. The new resupply calculation model for malaria commodities—the look-ahead seasonality index (LSI)—was incorporated in the SOPs. As part of the transition of malaria commodities into IPLS, the project requested short-term technical assistance (STTA) to assist PFSA and the Malaria Logistics Technical Working Group in LSI implementation, including review of the current status and recommendations for the future, and to assist in options for managing unpredictability (including outbreaks). The STTA providers developed LSIs for each hub using 2010–2015 Public Health Emergency Management case data.

Ghana

The project is collaborating with private sector partners to provide warehousing and distribution services for malaria commodities following the loss of the Central Medical Stores in January 2015 due to fire. The project conducted quarterly deliveries of antimalarial supplies from the central level to the Regional Medical Stores (RMSs) and teaching hospitals (THs).

The project transported LLINs from the ports to district educational offices in four regions in support of the national school-based LLIN distribution. The LLINs were transported directly from the ports to the regions to save cost by eliminating the need for central-level warehousing. The project supported the National Malaria Control Program (NMCP) to supervise and monitor the point mass distribution of LLINs in three regions, as part of the NMCP's strategy to replace LLINs that were distributed during mass campaigns in 2012 to maintain universal coverage of LLIN ownership and use. More than 4.3 million LLINs have been distributed in these regions and are expected to provide coverage for over 8.6 million people, including children and pregnant women.



Community members in Ghana collect new LLINs to protect their homes.

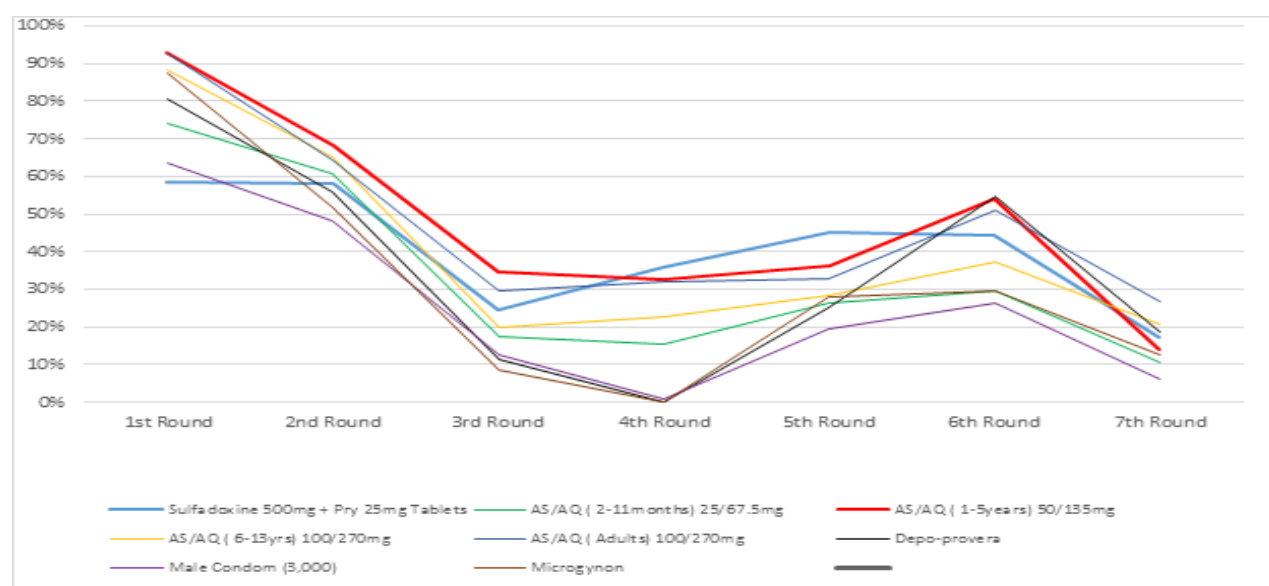
Photo: USAID | DELIVER PROJECT, 2016

The project supported the Ghana Health Service (GHS) to complete route and transportation optimization studies for the Northern and Eastern regions to develop optimized routes to support scheduled delivery of health supplies from the RMS to health facilities. According to the study results, current resource constraints and inventory level variability in the RMS present a strong case for private sector participation in the last-mile delivery of health supplies to facilities. Optimized route models with facility groupings to facilitate the implementation of scheduled deliveries have been shared with the GHS central and regional levels. In addition, a process map for the study was given to GHS to facilitate replication in the other regions of the country.

Liberia

In collaboration with the Supply Chain Management Unit (SCMU), the project conducts quarterly distribution of malaria products and other program commodities in the USAID-supported counties (Lofa, Nimba, Bong, Margibi, and Montserrado). Figure 7 illustrates the average stockout rate in seven rounds excluding Montserrado health facilities. The stockout rates for all malaria products in these counties have been reduced to rates seen before the Ebola crisis.

Figure 7. Comparison of Average Stockout Rates in Seven IA Distribution Rounds, Excluding Montserrado.



Madagascar

Following the design of the national and integrated public supply chain and the development of the SOP manual, the monitoring and supervision guide, the trainers' guide, and the participant's handbook, the project—in collaboration with the Directorate of Pharmacy, Laboratory and Traditional Medicine (DPLMT) and the Technical Logistics Management Unit (TLMU)—launched the pilot of the newly designed supply chain. The project trained 27 trainers from central, regional, and district levels. The trainers then trained 185 health workers (77 males and 108 females) from 102 pilot health facilities in commodity logistics management using the new SOPs. The pilot ran from September 2015 to March 2016. Over those six months, the trainers and the supervision team conducted four monitoring and formative supervision visits to 76 health facilities. Apart from essential medicines that are subject to cost recovery, program commodities have steadily decreased in stockout rates. Based on the success of the pilot, the MOH plans to proceed with the national rollout of the system.

Mozambique

During the reporting period, the project received 3,093,050 bednets into the three regional warehouses contracted and managed by the project; outsourced transportation of 506,150 bednets to the provincial capitals; outsourced transportation of 165,250 bednets from Nampula to all of the districts in Nampula Province; and 52,300 bednets from Pemba to all of the districts in Cabo Delgado Province. In addition, the project transported and installed 52 40-foot shipping containers to selected districts throughout the country to be used as storage space for LLINs. LLINs were transferred to the GHSC-PSM project.

Nigeria

The project completed malaria commodities last-mile distribution (LMD) in 1,524 health facilities in five states (Oyo, Akwa Ibom, Cross River, Benue, and Kebbi). LMD is also conducted in Nasarawa and Kogi states. Malaria commodities are distributed through the Direct Delivery and Information Capture system in four states (Ebonyi, Bauchi, Zamfara, and Sokoto). The project also supported the NMEP with preparation of distribution plans for long haul and LMD of malaria commodities for the 24 Global Fund-supported states.

Burundi LLINs

Routine Distribution and Social Marketing Campaign

The USAID | DELIVER PROJECT has been working in Burundi since 2009. LLINs have been distributed across the country via mass distribution campaigns, routine distribution, and social marketing. Routine distribution is through health centers at the most decentralized level of the health system in Burundi. During the reporting period, the project distributed **299,350** LLINs through routine distribution. The social marketing of LLINs (SUPANET) was re-introduced in 2013 as one channel of routine distribution. LLINs are made available through the private sector via wholesalers, both pharmaceutical and commercial, and to sales points easily accessible by the population to provide another way to sustain coverage between mass distribution campaigns. During the reporting period, **9,007** LLINs were sold.



Photo: USAID | DELIVER PROJECT, 2015.

Workers demonstrate the LLINs during a communication activity to increase sales of LLINs in Burundi.

South Sudan

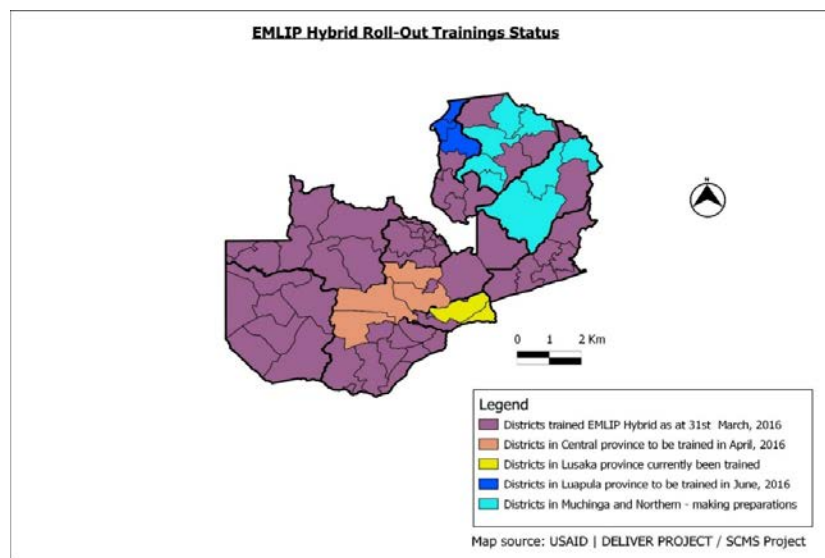
The project continued to work with private sector transporters, national and state MOHs, implementing partners, and NGOs to distribute the EMF and USAID-donated ACTs and RDTs to the county health departments (CHDs), and hospitals in the seven non-conflict affected states of South Sudan. The project leveraged World Food Program airlift capacity to distribute ACTs and RDTs from Juba to the three conflict-affected states (Jonglei, Unity, and Upper Nile), and coordinated with implementing partners, state MOHs, and CHDs to assist with distribution. As a result of this extensive coordination, stakeholders, the project managed to complete the quarterly distribution of ACTs and RDTs to all counties throughout South Sudan.

Zambia

With support from the project, the MOH continued to conduct trainings on the EMLIP hybrid system through which health facilities order malaria commodities. A total of 12 districts from Copperbelt, North Western, and

Lusaka provinces were trained between October 2015 and March 2016. The national coverage of districts trained in the EMLIP now stands at 73 percent (77 of 105). The map below shows the distribution of districts trained in the system and those yet to be trained.

Figure 8. EMLIP Hybrid Roll-Out Trainings Status



Zimbabwe

Malaria medicines and RDTs are distributed through the Zimbabwe Informed Push and Assisted Pull systems. The project supports quarterly deliveries to all provinces in the country, and supports the LMIS of both systems. Delivery coverage for these systems is 99 percent.

Improve Visibility at All Levels of the Supply Chain from Central to Facility and Community Health Worker

Support to LLIN continuous distribution systems

In addition to LLIN campaigns, the project supports continuous distribution systems that distribute LLINs to antenatal care (ANC) clinics.

DRC: In March, the project delivered 89,500 LLINs to 37 health zones to protect pregnant women and children under 12 months against malaria in a record time of one month, despite facilities being located in hard-to-reach areas.



Liberia: As part of the ministry's effort to reduce malaria burden on pregnant women, the project supported the distribution of LLINs to 149 health facilities in seven counties. Comparing the number of facilities issued with LLINs in the first phase distribution in April 2015 to those issued in the second phase, we see an increase in number of HF receiving LLINs for ANC from 594 HF to 625 HF.

Rwanda: The project distributed 374,600 nets to 68 health centers in the then seven high-malaria burden district hospital catchment areas. The activity was completed in seven days.

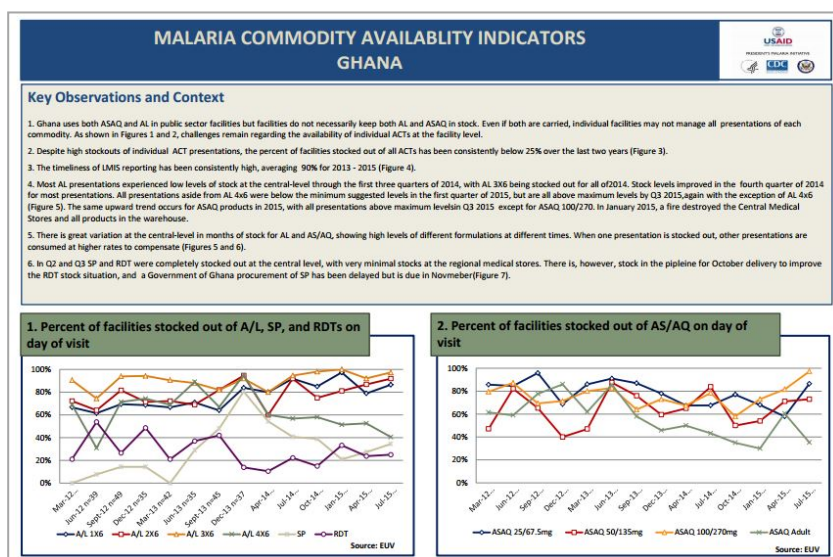
Zambia: The project supported the distribution of 177,700 LLINs to districts in Western Province of Zambia. The nets are earmarked for distribution through antenatal and under-5 clinics in health facilities within the province. In addition, the NMCC provided a distribution schedule for 800,000 PMI nets in June and July 2016, for distribution in Lusaka, Central, Copperbelt, and Luapula provinces. The project office closed and activities ended June 30th, 2016. This activity was turned over to PSM.

Core-Funded Activities

Data dashboards

As part of the project's data analysis and synthesis activities, data dashboards are available for each country on a semi-annual basis. The dashboards provide longitudinal data analysis from various data sources, presented in a concise, user-friendly, largely graphical data dashboard. Dashboards have been completed and updated for 10 countries: Burkina Faso, Ghana, Liberia, Malawi, Madagascar, Nigeria, Rwanda, Tanzania,

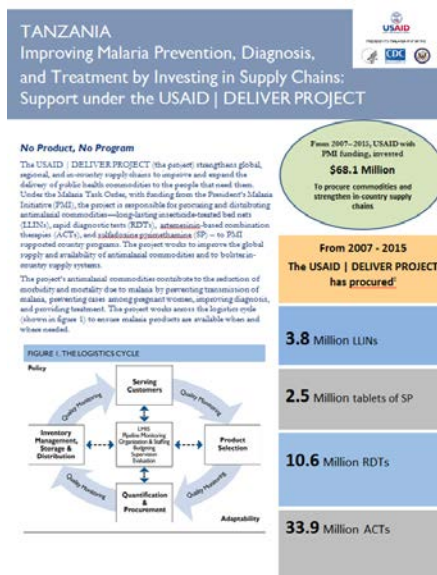
Figure 9. Sample Data Dashboard for Ghana, 2016



Zambia, and Zimbabwe. A sample page of a dashboard is seen in figure 9. The complete set of data dashboards can be found in appendix P.

Country stories

Task Order 7 continued to document the key activities accomplished for each country with the country stories series. Country stories are impact-oriented, data-driven, and rely on country-specific data sources that show the accomplishments of the project. Supply chain as well as malaria indicators are included to show the link between investments in supply chain and improvements in malaria prevention, diagnosis, and treatment.



For example, in Tanzania, since the project began implementing the eLMIS, facility-level stockout rates of ACTs were eliminated. In FY16, the task order developed 12 country stories, one for each country with project presence. A story on the project's work in LLIN distributions and campaigns in approximately 20 countries was also developed.

End-Use Verification activity: continuing support to countries and conducting quantitative analysis

The PMI EUV activity is a health facility survey that captures information about the malaria supply chain and malaria diagnosis and treatment at public health facilities. The data generated by this activity provide visibility of important logistics and case management information that is otherwise unavailable to decision-makers. The EUV is routinely implemented by the project in Burkina Faso, Ghana, Malawi, Mozambique, Nigeria, Tanzania, Zambia, and Zimbabwe. Reports are available on a rolling basis. In

September 2015, the project transitioned implementation of the Liberia EUV to the Collaborative Support for Health (CSH) project. During the reporting period, the EUV activity in all other countries transitioned to GHSC-PSM or GHSC-TA. The last EUV conducted under the USAID | DELIVER PROJECT was in Zimbabwe in June 2016.

Procurement Planning and Monitoring Report for Malaria

The PPMRm provides quarterly visibility for central-level stock levels of ACTs, SP, and RDTs in 24 countries. The report details stock levels in the country—if available, additional levels of the supply chain beyond central may also be included—regardless of the source of supply (e.g., host government, Global Fund to Fight AIDS, Tuberculosis and Malaria, or PMI). The report also covers key commodity security updates in-country, such as reporting on finance and capital, procurement, and logistics committees, and providing a detailed quarterly snapshot of activities and accomplishments in each country during the quarter. Data are reported from eight countries on the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) project and 14 countries supported by project staff. Two countries report through USAID bilateral projects.

The PPMRm can mitigate stockouts and other critical commodity-related problems by providing key in-country stock status data for quick decision-making. In addition, countries can highlight particular actions or issues requiring attention, providing another avenue for early detection of potential stock situations and expediting possible responses.

The April–June 2016 quarter was the last quarter that the project was responsible for administration and production of the PPMRm. During the July–September quarter, the project handed administration to GHSC-PSM. Work included finalizing PPMRm job aids for users and administrators, as well as holding orientation meetings for GHSC-PSM staff.

Figures 11 and 12 show central-level stockouts of A/L and AS/AQ, by calendar year, as reported through the PPMRm beginning in 2010. When interpreting these data, note that central-level stockouts do not necessarily

translate to stockouts at lower levels of the supply chain, where patients are actually seeking health care services and receiving medicines. A country with no product at the central level may have pushed product out to meet country needs, leading to available stock at regional warehouses and health facilities. For a general snapshot of availability at lower levels of the supply chain, please see appendix I (facility stockout rates), and appendix P (individual country data dashboards).

Figure 10. Number of Countries Reporting Stockouts of A/L Products

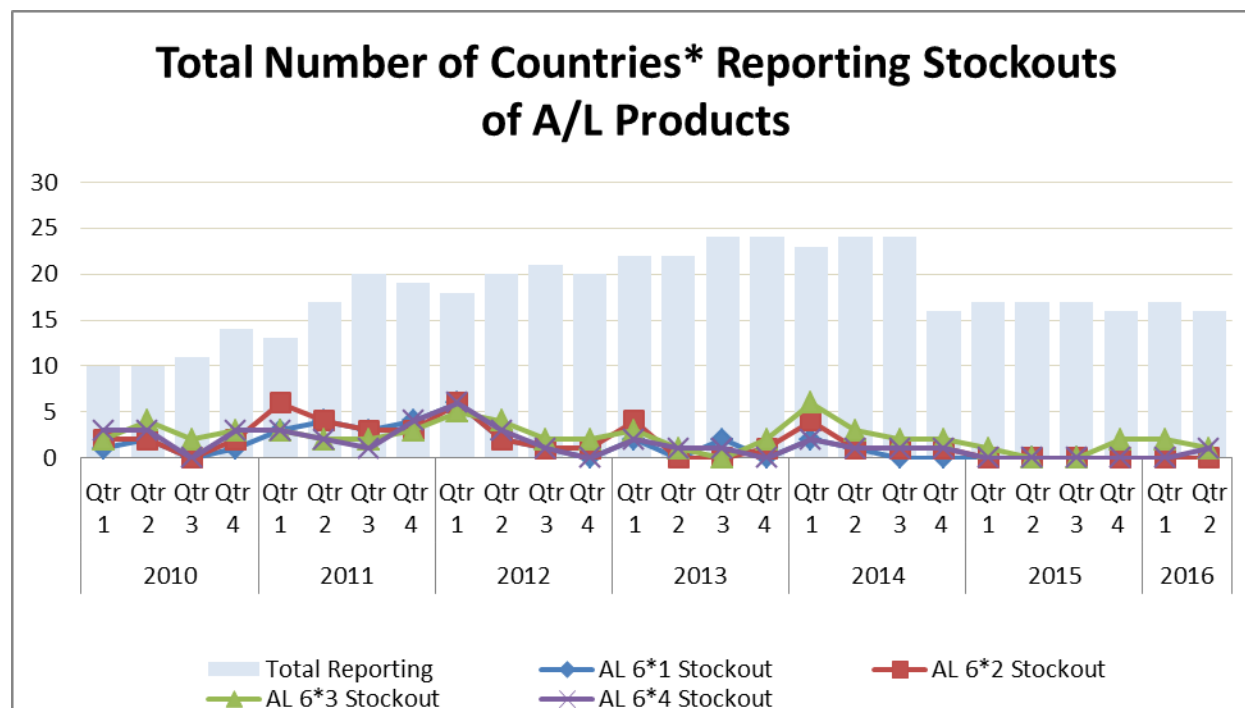
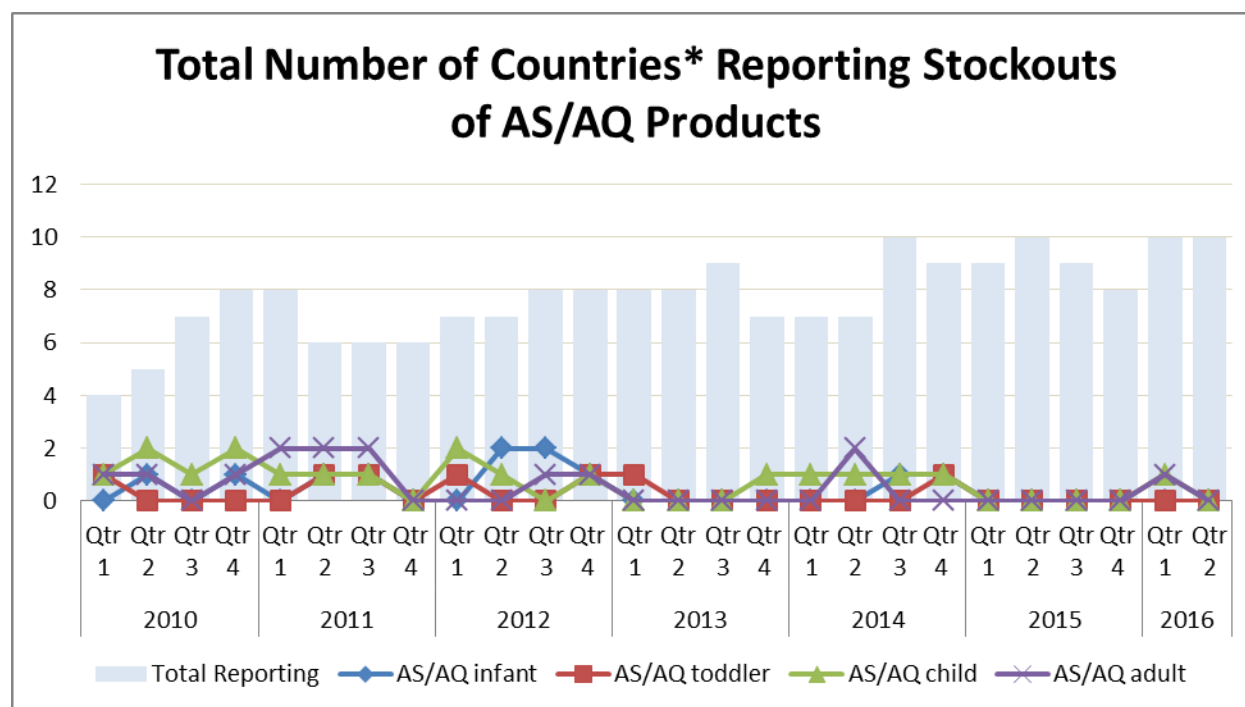


Figure 11. Number of Countries Reporting Stockouts of AS/AQ



Country Highlights

Burkina Faso

The project has been supporting the implementation of called CommCare, a mobile phone application for logistics data transmission. The application has improved timely reporting of consumption data between the CHWs and the health facility.



Photo: USAID | DELIVER PROJECT, 2015.

Parfait Edah, country director of the USAID | DELIVER PROJECT in Burkina Faso, helps community health workers submit monthly reports using their mobile phone with the CommCare application.

DRC

In April, the project facilitated a training-of-trainers on the use and teaching of SOPs on management of the newly designed health commodities system for 24 participants (pharmacists, logisticians, and physicians) from the central and provincial levels. Participant performance was evaluated based on a set of criteria, including subject mastery and use of adult learning techniques. All participants passed the competency test with high marks. In addition, participants developed a preliminary plan for the system rollout within the pilot provinces and health zones.

Ethiopia

The Health Commodity Management Information System (HCMIS) manages supply chain data for essential medicines, including malaria products, in support of the IPLS. The HCMIS dashboard allows users to access live commodity data from across the PFSA network (central and 16 hubs) for all commodities. Dashboard training was provided to 238 PFSA staff in January and February. Since then the project has been tracking dashboard use through Google Analytics. As integration continues, and the export hubs in which the country is investing become more involved in commodity storage and distribution, we expect use of the malaria program dashboards to increase.

The malaria quantification report was finalized, endorsed, and disseminated after partner comments were incorporated. PFSA and the FMOH are in the process of initiating procurement according to the supply plan. This report was developed by the project and was the first national quantification activity in three years.

Malawi

The Parallel Supply Chain continued to conduct 100 percent on-time delivery. The project continued to retain copies of signed proofs of delivery (PODs) containing specific batch numbers for the commodities distributed to enhance commodity tracking. Health Technical Services and Support, with support from the project, also continued to produce and share with stakeholders reports like national monthly LMIS inventory performance reports, monthly stock status reports, distribution schedules, distribution updates, and reconciliations of distribution list against PODs.



Photo: USAID | DELIVER PROJECT, 2015.

Everyone comes together to help load the warehouse with a new delivery of ACTs in Malawi.

the hospital module of the eLMIS, a total of 140 hospitals representing 66 percent of hospitals now submit request and requisitions using the eLMIS. The project's LMIS focus during this transition period has been on transferring knowledge and building sustainable structures to support the continued functioning of the system. Twenty-four representatives from the LMU and MSD Information and Communication Technology (ICT) department were trained in eLMIS. In Zanzibar, 17 staff from the CMS, district health management team, and MOH were trained to provide support to the eLMIS as well, increasing the human resource support pool for the long-term eLMIS management.

Zambia

The project helped MOH/MSL migrate from the use of Supply Chain Manager to the eLMIS. Trained provincial, district, and health facility eLMIS users can enter and approve health facility orders electronically instead of submitting paper reports to MSL. The eLMIS work will continue under the AIDSfree project.



Photo: USAID | DELIVER PROJECT, 2015.

Health worker instructs a father in proper ACT dosage for his young son in Kalomo, Zambia.

Strengthen the Accountability of In-Country Supply Chains that Manage Malaria Products

Improving Data Visibility in Laos

The project led LMIS rollout efforts through training of provincial antimalarial station (PAM) and district antimalarial station (DAM) staff in low endemic areas (Luangprang, Oudomxai, Bolikhamxay) as well as all health center staff in high endemic areas (Savannakhet, Saravan, Sekong, Attapeu, and Champassack). In November, eLMIS was launched on the Open Data Kit (ODK) platform. This allows for bi weekly reporting of facility level aggregated stock information (max/ min, stock on hand, months of stock). At the Malaria Annual Review and Planning meeting in March, the ODK data was presented and showed decreases in stockouts in highly endemic areas.

In January, the project local consultant led the Center for Malaria Parasitology and Entomology logistics team and the MSH international consultant on a preliminary round of logistics supportive supervision visits to three northern provinces. A key focus of the supportive supervision visits is to review the LMIS data collection and reporting procedures and the methodology for calculating resupply quantities with facility staff. Inputs from this first round of supportive supervision visits have been used to develop the Logistics Supportive Supervision Plan which has been approved by CMPE.

A formal training curriculum and supportive supervision tools were developed by the project. During the Logistics Supportive Supervision Workshop, the project trained 16 participants representing the central and regional/provincial levels as well as malaria partners Global Fund and PSI. Following the training, supportive supervision has been rolled out in Khammouane, Saravane, Champassak and Sekong provinces. To date, it has been well received by both supervisors and supervisees. Supportive supervision seems to be highly effective in creating a collaborative environment where all staff are able to learn from one another. Supervisors have also used the opportunity to ensure the new design of the stock card and monthly summary reporting forms are well understood.

Country Highlights

Liberia

In August 2015 the Minister of Health replaced the senior management team of the National Drug Services (NDS), due to accountability and commodity security concerns. An interim team provided caretaker management to the NDS while a long-term solution—outsourcing NDS management to a 3PL—was developed. The project continued support to the NDS IMT, providing a series of SSTA visits and longer term support by seconding an enterprise manager to support the NDS managing director.

Malawi

The project continued to conduct spot checks during and after the distribution process to ensure that commodities are distributed according to schedule to intended facilities. There was 100 percent compliance by Cargo Management Logistics and Imperial Health Sciences, the project's transportation and warehousing sub-contractors, respectively.

Nigeria

In collaboration with NMEP the project provided technical support to GHSC-PSM branch to coordinate the implementation of LLIN commodity management audits (CMAs) in Kaduna, Niger, and Sokoto. Support included sampling of distribution points; reviewing the reconciliation reports, providing guidance on use of the data collection tools, and resolving challenges to obtaining the LLIN supply chain tracking tools used during the replacement campaign.

In addition to the CMA training, the project provided technical assistance to NMEP to conduct training on the Malaria Commodity Logistics System (MCLS) data aggregation tool in 11 states (Zamfara, Lagos, Niger, Kebbi, Edo, Rivers, Jigawa, Katsina, Ogun, Kwara, and Sokoto). The training was aimed at equipping government staff with skills to perform data management tasks (which affect the management of malaria commodities) using the aggregation tool to improve data integrity and enhance data visibility. The tool is being used in the various states where the trainings have been held to aggregate all local government malaria data, which is subsequently sent to NMEP for decision making.

The project also conducted a semi-annual quality assurance/quality control (QA/QC) of PMI procured mRDTs distributed to 10 PMI focus states. Samples were randomly selected from two health facilities and the state CMS in each of these 10 states. The activity helped monitor the integrity and performance characteristics of the stored mRDTs to determine if the results generated by the test kits were correct, reliable, and acceptable. The QA/QC tests were conducted at the WHO/FIND collaborating center in the Philippines.

Tanzania

Following the design of MSD's Resource-Based Financing (RBF) scheme, the project presented baseline findings on the set of RBF indicators that will be monitored in three strategic business units: Muleba, Mwanza, and MSD Central. Incentive targets were agreed upon and set for the seven indicators, which are order fill rate for district- approved orders; on-time delivery rate; put away accuracy; inventory accuracy; order lead time; damaged or expired commodity rate; and fleet management. These indicators will be monitored with the aim of supporting MSD in its efforts to improve performance of the national public health supply chain.

Zambia

The project continued support to the MOH and the NMCC in conducting joint monitoring supportive supervision visits to health facilities in supply chain of malaria commodities. The visits included review of LMIS forms and provision of on-job-training for facilities with logistics challenges to ensure that malaria commodities were always available.



Health workers load LLINs on a truck to deliver to further reaches of their community in Benue, Nigeria.

Photo: USAID | DELIVER PROJECT, 2015.

Bridge the Gap between NMCPs and Supply Chain Operators to Improve Core Supply Chain Functions

Quantification activities

In almost all countries, the project supports routine quantifications and quantification updates.

Quantifications bring NMCPs, CMSs, and other partners together to review available data, make necessary adjustments, agree on assumptions, and develop forecasts and supply plans to keep programs between minimum and maximum stock levels. During

quantification exercises, partners provide updates on their commitments, supply plans are developed to inform procurements, and funding gaps are determined. NMCPs can use these funding gaps for resource mobilization.

The project has also worked with countries to include seasonality in the development of the supply plan. In Rwanda, use of a seasonality index for supply planning is now a routine step in the quantification process.

Strengthening Quantification in Cambodia

Over the past six months, the project worked to build CNM appreciation for and capacity to conduct quantification. Following the September quantification exercise, led by the project, the report was finalized and distributed to all stakeholders. The report includes recommendations for follow-on activities to monitor consumption and stock status of malaria commodities in-country, as well as updating the quantification routinely. The project continues to build CNM staff capacity in forecasting and supply planning methodologies, programmatic assumption review, and quantification updating processes.

Coordination and collaboration groups

Coordination and collaboration groups, or supply chain technical working groups (TWGs), are another key activity in which both program staff and supply chain staff participate. These groups convene stakeholders to coordinate and collaborate on all aspects of supply chain decision-making and management. This forum is instrumental in managing commodity-related resources across the programs and ensuring product availability.

At these forums, information on stock status is shared, status of planned shipments discussed, quantification results presented, resources mobilized, upcoming supply chain activities highlighted, technical capacity-building needs identified, and solutions for common supply bottlenecks or challenges are developed. Examples from Burma, Ethiopia, and South Sudan are provided below.

Burma

The project received support from the malaria program to examine the landscape of supply chains that provide health commodities to a variety of community health workers and to inform policies and strategies for implementing integrated community case management (iCCM) by malaria volunteers.

In addition to meeting with MOH counterparts and supporting implementing partners, project staff conducted a field visit to Kayin State for the purpose of informing future plans for supply chain management of iCCM, specifically by NMCP-supported volunteers under the Global Fund. The project met volunteers and MOH staff at the township and state levels and learned a variety of mechanisms under which various community volunteers receive the commodities they need.

Additionally, after initiating the vector-borne disease control (VBDC) insectary in May 2015, the project worked with PMI counterparts for many months to finalize the specifications, then worked with suppliers, freight forwarders, and the consignee to ensure that all commodities would arrive in time for an entomology training conducted by the CDC. The VBDC insectary has been completed in time for the project to hand off to the follow-on.

Ethiopia

The project facilitated the establishment of malaria Logistics TWGs at several hubs. Logistics and program experts from RHBs, zonal health departments, and partners attended the meetings, which guide the transition process for inclusion of malaria commodities into the IPLS.

During the meetings, project staff presented stock availability data from supportive supervision visits, and present the look-ahead seasonality index for calculating routine resupply for facilities.

South Sudan

The project, in collaboration with MOH, USAID, and other partners, organized an EMF Technical Working Group (EMFTWG), which is a critical forum for convening partners and stakeholders to share EMF information and ensure visibility into the supply chain process. The project provided updates on the status of import verification and tax exemption for incoming shipments, antimalaria kit pipeline information, and in-country distribution of antimalaria medicines and test kits. Chaired by the MOH, the EMFTWG solicits assistance from various parties to ensure seamless distribution of EMF commodities to the CHD level.

Supply chain strategies/master plans

The project has supported the development, updating, and implementation of supply chain master plans (SCMPs) in several countries. SCMPs provide a strategic road map for the supply chain, establish the framework for all supply chain system strengthening activities, and describe the objectives and strategic interventions.

Burma

The project supported the development of the Burma Ministry of Health National Health Supply Chain Strategy for Medicines, Medical Supplies, and Equipment 2015–2020 and facilitated a 2-day meeting for the dissemination of the strategy to MOH and development partners. The vision for the strategy is an efficient, cost-effective, transparent health supply chain ensuring commodity availability at all levels to improve health outcomes. In general this will be achieved through the integration of existing multiple health supply chains, reducing complexity, and increasing efficiencies. The implementation of this strategy will have significant positive effects for implementing partners and the national program, as many, if not all, supply chain activities are expected to be absorbed into a new MOH Directorate of Supply Chain.



Three generations prepare a boat to carry malaria commodities across the river in Pekong, Burma.

Photo: USAID | DELIVER PROJECT, 2015.

Ghana

The project supported the interim management team (IMT) for the SCMP to complete a process of revising the document to respond to stakeholder demands and reflect current time lines. The strategic, monitoring and evaluation, and implementation plans including costing of activities, and capital and recurrent cost were revised and updated. The revised SCMP has been handed to the MOH and SCMP steering committee and will inform the development of a cabinet memo for setting-up of a supply chain management entity.

Liberia

The MOH and partners, with technical assistance from the project, updated the national SCMP. This activity convened all supply chain stakeholders including MOH (SCMU, programs/community health, pharmacy), NDS, LMHRA, Pool Fund, WHO, United Nations Children's Fund, UNFPA, CSH, CHAI, Riders for Health, PIH, PACS, etc. The revised SCMP prioritized three key principles for the supply chain of the future: 1) one integrated system

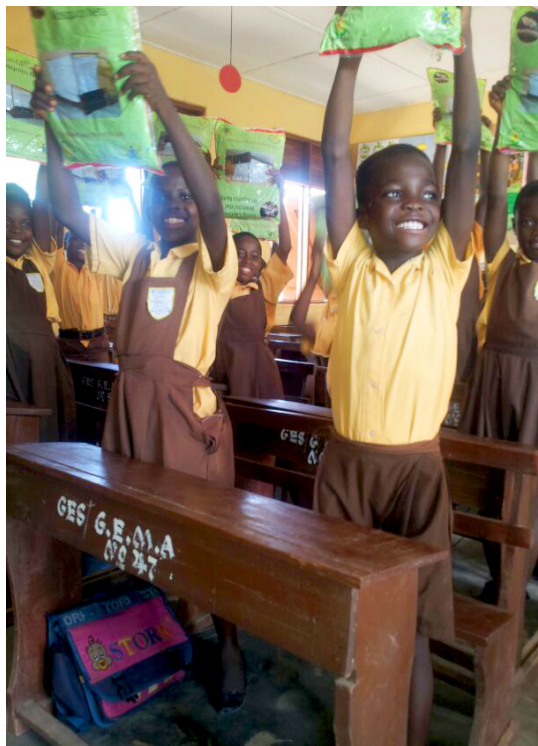


Photo: USAID | DELIVER PROJECT, 2015.

Students hold up LLINs they received during a school distribution in Ghana.

harmonized data across multiple streams; 2) provides accountability and availability; and 3) reduces the burden on health care workers at lowest levels.

Tanzania

The official launch of the National Pharmaceutical Action Plan 2015–2020 and the Toolkit for Best Practices in Commodity Management and Good Governance in Council Health Facilities in March 2016 reiterated the government's commitment to strengthening the pharmaceutical supply chain sector in the country. These documents provide strategic direction and operational guidelines for strengthening the national supply chain.

Logistics management units

Key to building sustainable logistics systems is recognition of and investments in human resources and structures required to effectively and efficiently manage these systems. An LMU is a management structure responsible for organizing, monitoring, and supporting all supply chain activities within a logistics system. Through a pattern of continuous improvement, the LMU identifies supply chain problems, and develops and implements interventions to solve them. The project supports LMUs in Tanzania, Zambia, and Zimbabwe.

In Tanzania, LMU staff visited 1,577 health facilities in the eight MSD zones and two sales points, providing on-the-job training to 3,051 health care workers, 2,704 (88.6 percent) of whom were deemed competent. Follow-up with the 347 (11.4 percent) who did not pass will strengthen their capacity to manage commodities. A total of 443 facility-to-facility redistributions were made during the supervisory visits.

After Systems Meet Performance Levels, Build Local Capacity to Sustain System Performance

Country Highlights



Photo: USAID | DELIVER PROJECT, 2015.

Father and daughter carry LLINs home in Madagascar.

DRC

In October 2015 and March 2016, the project supported a supply chain management principles training for 26 PMI-supported health zones. A total of 44 participants increased their understanding of logistics and stock management best practices. The sessions focused on practical exercises related to maximum-minimum inventory control system, LMIS and other updated tools, quantification/re-supply, and reporting.

Madagascar

The project, in collaboration with the DPLMT, organized a management, monitoring, and evaluation training course for 20 participants (10 female) from MOH (16); Madagascar Community-Based Integrated Health Program (MAHEFA) (1); PSI (1); and project staff (2). The purpose of the course was to improve participants' understanding of the basic concepts of logistics management and to strengthen their capacity to use appropriate indicators to monitor and assess the strength/functionality of the national integrated supply chain.

Mozambique

The project conducted supervision and on-the-job training visits focused on strengthening capacity to order health commodities; data reporting; storage and warehousing; inventory control; distribution; and product availability. The FST also held classroom in-service training for 459 health workers: 338 on the third edition of the Procedures Manuals for Medicine Management, and 121 on management of LLINs for distribution during ANC visits.

Nigeria

The project conducted Malaria Commodity Logistics System (MCLS) training for 2,318 participants from Ebonyi, Kogi, Zamfara, Oyo, Cross River, Benue, Nasarawa, Kebbi, Bauchi, and Sokoto State. The training focused on the malaria commodity LMIS, proper storage, stock status review and record keeping, and was aimed to equip service providers oversee consumption data management, inventory management, use of data collection tools, and other key logistics functions.

The project also provided technical assistance to the NMEP to conduct training for 26 participants on the MCLS data aggregation tool in Kogi state. This was the final training in a series that started in February 2016 and covered 24 states—Akwa Ibom, Anambra, Bauchi, Benue, Cross Rivers, Edo, Ekiti, Imo, Jigawa, Kwara, Katsina, Kano, Kaduna, Kebbi, Lagos, Niger, Oyo, Osun, Ogun, Ondo, Rivers, Sokoto, Zamfara—and trained 663 people. The training gave government staff the skills to perform data management tasks and use the aggregation tool efficiently. This will contribute to improved data integrity and better data visibility. So far, the various states have started to use the tool to aggregate all local government-level malaria data, which is sent to the NMEP for decision-making.

Rwanda

The project finalized the district pharmacy (DPs) operation manual, which will improve the supply and demand planning of malaria commodities, securing stock availability at DPs and availability of malaria commodities at service delivery points.

Zimbabwe

Project staff co-facilitated a TOT for case management focusing on primaquine rollout to pre-elimination districts. The country has scaled up the number of districts implementing pre-elimination activities from seven to 20 (of 59 districts nationally). The training gave district personnel case management skills, enhanced surveillance, and use of low dose primaquine. The training emphasized the need to report adverse drug events and proper stock management to avoid stockouts while also reducing expiries.

Objective 3: Improve the Global Supply of Malaria Commodities

Strengthen International Collaboration

Support to the Roll Back Malaria Partnership

In May 2015, the RBM board agreed to restructure the partnership to better align its efforts toward advancing the malaria agenda and approved a new architecture for the partnership at its December 2015 board meeting. As part of its restructuring, RBM closed its secretariat in December 2015. In April 2016, RBM announced its new board, which will oversee implementing the agreed changes to the architecture and provide the leadership required to strengthen the partnership. TO Malaria has been an active member in several RBM working groups. The Procurement and Supply Chain Management Working Group (GHSC-PSM WG) temporarily suspended activities until the new RBM structure is in place, while the Malaria in Pregnancy Working Group (MiP WG), and the Vector Control Working Group (VCWG) continued to operate during the restructuring period.

The purpose of the VCWG is to align RBM partners on best practices to reach and maintain universal coverage with effective vector control interventions. The VCWG disseminates the normative and policy-setting guidelines of the World Health Organization (WHO) by helping to translate these norms and standards to international and country-level partners. In addition to participating in its monthly teleconferences, the project attended the VCWG annual meeting in February. The restructuring of the work streams was the highlight of this year's meeting. TO Malaria's participation focuses on the LLIN priorities (which combine the former Durability and Continuous Distribution work streams, New Challenges & New Tools in Vector Control, and Integrated Vector Management work streams).

The role of the MiP WG is to provide the RBM Partnership with strategic advice on best practices for scaling up interventions to prevent and control malaria during pregnancy to achieve RBM targets and broader development goals. During the reporting period, TO Malaria participated in routine MiP WG conference calls and collaborated with key working group members on the development of an advocacy infographic to accompany the RBM MiP Call to Action, released in 2015. The infographic targets in-country policy makers and stakeholders with succinct guidance on key MiP interventions and paths to strengthening these interventions. The infographic was released on World Malaria Day, 2016 to continue Call to Action momentum.

Alliance for Malaria Prevention

As a partner in the Alliance for Malaria Prevention (AMP) the project is available to collaborate with government agencies, private sector businesses, public sector organizations, faith-based organizations, and humanitarian organizations to scale up LLIN ownership and use and build national capacity to sustain the fight against malaria. For example, the project provides ongoing support to partners who have inquiries about LLIN packaging options. In February 2016, a technical advisor from the U.S. attended the AMP annual meeting which convenes partners to discuss collective efforts to help countries reach their respective RBM targets through increased LLIN ownership and use. The theme for this year's meeting was "Fighting malaria in complex operating environments: Challenges and lessons learned for providing LLINs and other critical malaria interventions in emergency, high-burden and difficult to access areas."

TO Malaria staff presented the routine resupply system for malaria commodities that operated in Liberia during the Ebola crisis. The advisor also provided input to the subject of LLIN preference as a component of the Emerging Issues Work Group (EIWG) priority subject of finding flexibility for net distribution. The EIWG supports AMP by identifying and addressing issues related to scaling up LLIN ownership and use before, during, and after mass distribution campaigns. In addition to joining the weekly AMP teleconference, TO Malaria also participates in EIWG quarterly teleconferences.

The project also attended the AMP core group meeting on August 10–11, 2016. The major theme was to take stock of AMP partnership to date, changes over time, and to define a broad vision and strategy for the way forward. This included a discussion of new activities and strategies that may be included in AMP's future work (e.g., SMC). The LLIN work stream of the Vector Control Working Group also presented key activities such as school-based LLIN distribution in Tanzania.

American Society for Tropical Medicine and Hygiene (ASTMH)

The project presented five posters at the annual ASTMH meeting in Philadelphia, November 2015.

- Procurement Options for Addressing LLIN Packaging Waste.
- Malaria Surveillance Data and Commodity Logistics Data Used to Respond to Outbreaks in Southern Laos PDR.
- Availability of Malaria Products at the Last Mile.
- How to Account for Seasonality When Planning National-Level Malaria Orders.
- Supply Chain Management Considerations for LLIN Continuous Distribution.

Conduct Analysis of Demand, Supply, and Pricing Issues Affecting the Global Market for Malaria Products

Analysis of Malaria Market

Task Order Malaria continues to analyze the malaria marketplace and adjusts its procurement strategy based on the analysis. Though the market for malaria commodities has seen many technical breakthroughs in the past five years, it has also been affected by instability and supply shortages which have had a direct impact on in-country programs. Analyses include LLIN vendor production capacity and anticipated demand, trends in commodity pricing, and vendor performance. During this period of transition, the project shared relevant documents with the GHSC-PSM team.

Table 5. PMP Indicators for Supporting Global Supply and Availability Initiatives

Operational area	Indicators	Status
Support global and regional stakeholders/forums of SCM technical issues	Number of global and regional malaria initiatives with USAID DELIVER PROJECT technical participation	4 (AMP meeting, VCWG meeting, ASTMH meeting, AMP core meeting)

Performance Monitoring

TO7 monitors performance using a set of indicators outlined in the PMP and detailed in the Quality Assurance Surveillance Plan and Environmental Mitigation Monitoring Plan. All indicators calculated for this reporting period are included in the relevant sections throughout this document. For additional information, see appendices.

In addition to the PMP indicators, a set of deliverables have been agreed to during the work planning process for the fiscal year, including dates of submission. During the reporting period, the project routinely assessed the status of these deliverables at weekly TO7/USAID meetings and provided regular updates to PMI/USAID.

Less formal methods for performance monitoring and management, such as weekly TO7/USAID meetings and distribution of an updated Current Actions Table, which outlines the current status of all TO7 procurements and made available to all PMI and project managers, are also in place. During weekly meetings with USAID personnel and principal project staff, the TO7 team discusses all issues related to upcoming procurements and technical activities, and determines the best way to address problems. The project also conducts in-depth, country-by-country reviews of all ongoing procurement actions.

Implementation Challenges and Solutions

During the past 12 months, the project has faced several implementation challenges, which have been addressed in a variety of ways. The overarching challenge has been to actively manage the transition work from the project into the GHSC-PSM contract—for procurement, field offices, and core-funded work.

Managing Project Transition and Close Out

In the project's final year, managing a smooth transition to the new mechanism, GHSC-PSM, remains a priority. On the procurement side, all commodity delivery dates are being monitored to ensure that goods available dates are met whenever possible. We are also jointly managing some orders, for which the project may be responsible for placing the order and GHSC-PSM bears responsibility for the freight.

In some countries, commodities were in the possession of the project. The project contracted with audit firms to conduct physical inventories and complete the USG SF 1428 form verifying the quantities on hand. Any products that were in the custody of the project have been handed over to GHSC-PSM.

On the technical assistance side, the home and field offices worked closely to identify potential risks to the transition process at the country level, and to mitigate those risks to the degree possible. In countries that support direct logistics, key issues included the need for uninterrupted distribution of product during the transition period. We worked closely with each office and with GHSC-PSM to manage staff who are transitioning from one project to the other.

With regard to core-funded work, TO7 staff transitioned the EUV activity and the PPMRm to GHSC-PSM.

Political Turmoil Disrupts Field Office Operations

Activities in several countries were disrupted due to political unrest.

- When Burundi elected a new president in July 2015, the transition to a new government and growing opposition created an unstable environment and forced the project to cease operations. Since then, LLIN distribution to the districts resumed. The project ended technical work in March 2016.
- Burkina Faso experienced a coup attempt in September, 2015 which resulted in office closures in Ouagadougou. As the situation has stabilized, the country has resumed technical work.
- In Mali, militants attacked a hotel in Bamako in November, 2015. Due to the insecurity in country, the project had to cancel a planned SSTA trip. The purpose of this trip was to review the status of work orders with our subcontractor in-country and to meet PPM (public sector entity responsible for warehousing and distribution) to obtain documentation required for closeout. The project rescheduled and conducted the SSTA in June 2016.
- Political tensions have been increasing in the DRC with the lead-up to presidential elections. The project was asked to continue its technical work through the end of October 2016 to allow sufficient time for handover to the new supply chain technical assistance mechanism.

Country Requirements of Remaining Shelf Life

In an effort to prevent dumping of expired or close-to-expiry commodities, many countries adopted policies requiring that pharmaceuticals have a certain percent of shelf life remaining when imported into the country. In some cases, these requirements pose a significant challenge for the product. For example, a country may require 80 percent shelf life remaining for all products entering the market. Given the time it takes for the product to be available at the time of production, coupled with time requirements for QA testing (if applicable), and time for shipping clearance procedures, 80 percent shelf life is often difficult to attain. This is particularly challenging when the quantity ordered will certainly be consumed before it expires, despite not having 80 percent shelf life remaining.

Rwanda LLINs

A commodity procurement information request for 1,000,000 conical LLINs was received from Rwanda. The LLINs arrived in two batches of 500,000 each, and had passed our internal QC procedures as well as those of the manufacturer. Upon arrival in Rwanda, the first lot of 500,000 was not accepted subsequent to results from QC testing completed by the Rwanda Biomedical Center. These QC concerns were primarily of two categories: defects in the LLINs and seam the measurements (dimensions). The net manufacturer mobilized staff to Rwanda to work with RBC through the review and evaluation of the LLINs. Ultimately, agreement was reached on the measurements for one of the tranches of 500,000 nets. The manufacturer hired local staff to repair the LLINs, which will be examined before distribution to lower levels.

Initially, the project planned to conduct the distribution of these LLINs upon receipt in country. However, given closeout timelines and the fact that all technical staff had left the project before the LLINs had been officially accepted, responsibility for the distribution of these LLINs, and continued QC of the second tranche of 500,000 was transferred to GHSC-PSM.

Stockpile-Rectal Artesunate

Increasing demand, in-country registration challenges, and QC concerns have made rectal artesunate a particularly challenging product to procure. The global demand of rectal artesunate has been increasing from the last three years. Last year, the primary manufacturer experienced serious delays in production, and lead time grew to seven months. The project proposed procuring quantities for a stockpile to respond to country orders, but QC issues prevented that. Because two orders failed QC testing and were ultimately rejected, the QA team is reviewing manufacturer data. Finally, the registration of rectal artesunate in countries has been a challenge, and for at least one country, rectal artesunate could not be imported because of lack of registration.

Appendix B. Commodities Procured October 1, 2015–September 30, 2016

Orders Placed: October 1, 2015 to March 31, 2016

Country	PO Date	Sub Category	Order Quantity	Total Value
Angola	23-Oct-2015	Rapid Diagnostic Test Kit (kit of 25)	68,000	731,000
	05-Nov-2015	AS/AQ FDC (pack of 25)	19,368	196,585
	05-Nov-2015	AS/AQ FDC (pack of 25)	6,048	105,538
	05-Nov-2015	AS/AQ FDC (pack of 25)	10,164	46,246
	05-Nov-2015	AS/AQ FDC (pack of 25)	44,712	283,921
Benin	23-Oct-2015	Rapid Diagnostic Test Kit (kit of 25)	40,000	430,000
	23-Oct-2015	Rapid Diagnostic Test Kit (kit of 25)	40,000	430,000
	16-Nov-2015	Long-Lasting Insecticide Treated Net	730,000	1,912,600
	16-Dec-2015	Coartem (pack of 30)	7,862	172,964
	16-Dec-2015	Coartem (pack of 30)	13,911	156,499
	16-Dec-2015	Coartem (pack of 30)	7,491	84,274
	16-Dec-2015	Coartem (pack of 30)	4,233	93,126
	16-Dec-2015	Coartem (pack of 30)	9,501	165,127
	16-Dec-2015	Coartem (pack of 30)	5,288	70,066
	16-Dec-2015	Coartem (pack of 30)	5,116	88,916
	16-Dec-2015	Coartem (pack of 30)	2,847	37,723
	11-Mar-2016	Malaria Pharmaceuticals	6,667	74,204
Burkina Faso	06-Oct-2015	Rapid Diagnostic Test Kit (kit of 25)	80,000	860,000
	11-Nov-2015	Long-Lasting Insecticide Treated Net	75,400	171,912
	11-Nov-2015	Long-Lasting Insecticide Treated Net	324,600	740,088
	13-Nov-2015	Rapid Diagnostic Test Kit (kit of 25)	80,000	860,000
	21-Dec-2015	Coartem (pack of 30)	10,005	141,071
	21-Dec-2015	Coartem (pack of 30)	12,000	338,400
	21-Dec-2015	Coartem (pack of 30)	23,340	588,168
	21-Dec-2015	Coartem (pack of 30)	16,680	210,168
	18-Mar-2016	AS/AQ FDC (pack of 25)	8,000	81,200
	18-Mar-2016	AS/AQ FDC (pack of 25)	13,032	227,408

Burundi	06-Nov-2015	AS/AQ FDC (pack of 25)	8,016	139,879
	06-Nov-2015	AS/AQ FDC (pack of 25)	4,004	18,218
	06-Nov-2015	AS/AQ FDC (pack of 25)	27,576	175,108
	19-Nov-2015	Long-Lasting Insecticide Treated Net	532,500	985,125
	19-Nov-2015	Long-Lasting Insecticide Treated Net	532,500	985,125
	24-Mar-2016	Rapid Diagnostic Test Kit (kit of 25)	30,412	129,251
Cambodia	07-Dec-2015	Malaria Misc. Commodities	1	7,797
	07-Dec-2015	Malaria Misc. Commodities	1	1,514
	07-Dec-2015	Malaria Misc. Commodities	1	8,195
	07-Dec-2015	Malaria Misc. Commodities	1	62,598
	07-Dec-2015	Malaria Misc. Commodities	1	1,633
	07-Dec-2015	Malaria Misc. Commodities	1	5,075
Congo, Democratic Republic of	21-Dec-2015	Rapid Diagnostic Test Kit (kit of 25)	200,000	850,000
	21-Dec-2015	Rapid Diagnostic Test Kit (kit of 25)	400,000	1,700,000
	19-Feb-2016	Malaria Pharmaceuticals	372,900	648,846
	19-Feb-2016	Malaria Misc. Commodities	7,458	19,764
	23-Mar-2016	Malaria Pharmaceuticals	4,708	212,566
	23-Dec-2015	AS/AQ FDC (pack of 25)	44,316	449,807
	23-Dec-2015	AS/AQ FDC (pack of 25)	29,496	514,705
	23-Dec-2015	AS/AQ FDC (pack of 25)	24,332	110,711
	23-Dec-2015	AS/AQ FDC (pack of 25)	51,948	329,870
	23-Dec-2015	AS/AQ FDC (pack of 25)	44,316	449,807
	23-Dec-2015	AS/AQ FDC (pack of 25)	29,496	514,705
	23-Dec-2015	AS/AQ FDC (pack of 25)	24,332	110,711
	23-Dec-2015	AS/AQ FDC (pack of 25)	51,948	329,870
Ghana	03-Nov-2015	Malaria Pharmaceuticals	1,895	95,754
	04-Dec-2015	Rapid Diagnostic Test Kit (kit of 25)	148,000	962,000
	20-Jan-2016	Rapid Diagnostic Test Kit (kit of 25)	160,000	960,000

Guinea	05-Nov-2015	Malaria Misc. Commodities	5,000	10,750
	18-Dec-2015	Rapid Diagnostic Test Kit (kit of 25)	74,600	801,950
	19-Jan-2016	Long-Lasting Insecticide Treated Net	500,000	1,115,000
	19-Jan-2016	Long-Lasting Insecticide Treated Net	500,000	1,115,000
Kenya	19-Nov-2015	Long-Lasting Insecticide Treated Net	625,000	1,718,750
	19-Nov-2015	Long-Lasting Insecticide Treated Net	625,000	1,718,750
	14-Dec-2015	Malaria Pharmaceuticals	540,000	939,600
	05-Jan-2016	Malaria Pharmaceuticals	5,009	165,147
	20-Jan-2016	Rapid Diagnostic Test Kit (kit of 25)	226,000	1,864,500
	20-Jan-2016	Rapid Diagnostic Test Kit (kit of 25)	226,000	1,864,500
	16-Feb-2016	Coartem (pack of 30)	25,545	360,185
	16-Feb-2016	Coartem (pack of 30)	17,970	506,754
	16-Feb-2016	Coartem (pack of 30)	25,545	360,185
	16-Feb-2016	Coartem (pack of 30)	17,970	506,754
	25-Feb-2016	Long-Lasting Insecticide Treated Net	625,000	1,881,250
	25-Feb-2016	Long-Lasting Insecticide Treated Net	625,000	1,881,250
	21-Mar-2016	Coartem (pack of 30)	58,680	1,505,142
	24-Mar-2016	Coartem (pack of 30)	9,705	248,933
Liberia	05-Oct-2015	Malaria Pharmaceuticals	2,381	17,619
	16-Oct-2015	Malaria Pharmaceuticals	200	5,790
	27-Oct-2015	Rapid Diagnostic Test Kit (kit of 25)	80,000	340,000
	11-Nov-2015	Malaria Pharmaceuticals	259,255	451,104
	16-Nov-2015	Long-Lasting Insecticide Treated Net	320,000	681,600
	04-Dec-2015	Rapid Diagnostic Test Kit (kit of 25)	6,480	38,070
	04-Dec-2015	Rapid Diagnostic Test Kit (kit of 25)	3,800	33,250
	09-Dec-2015	AS/AQ FDC (pack of 25)	18,129	204,495
	09-Dec-2015	AS/AQ FDC (pack of 25)	18,756	110,848
	09-Dec-2015	AS/AQ FDC (pack of 25)	11,000	38,830
	09-Dec-2015	AS/AQ FDC (pack of 25)	10,000	112,800

	24-Mar-2016	Malaria Misc. Commodities	201	4,573
Madagascar	16-Nov-2015	Long-Lasting Insecticide Treated Net	650,000	1,408,550
	22-Dec-2015	Malaria Misc. Commodities	38,400	87,360
	07-Jan-2016	Rapid Diagnostic Test Kit (kit of 25)	76,000	475,000
	08-Jan-2016	Malaria Misc. Commodities	1	8,019
	08-Jan-2016	Malaria Misc. Commodities	1	1,909
	08-Jan-2016	Malaria Misc. Commodities	1	7,033
	22-Feb-2016	Malaria Misc. Commodities	1	7,375
	22-Feb-2016	Malaria Misc. Commodities	1	61,094
Mali	09-Oct-2015	Malaria Pharmaceuticals	2,560,000	896,000
	09-Oct-2015	Malaria Misc. Commodities	640,000	204,800
	23-Oct-2015	Malaria Pharmaceuticals	6,000	154,800
	27-Oct-2015	Rapid Diagnostic Test Kit (kit of 25)	60,000	645,000
	11-Nov-2015	Rapid Diagnostic Test Kit (kit of 25)	60,000	645,000
	11-Nov-2015	Long-Lasting Insecticide Treated Net	700,000	1,603,000
	11-Nov-2015	Long-Lasting Insecticide Treated Net	700,000	1,603,000
	10-Dec-2015	Coartem (pack of 30)	15,000	168,750
	10-Dec-2015	Coartem (pack of 30)	15,000	330,000
	10-Dec-2015	Coartem (pack of 30)	10,000	261,000
	10-Dec-2015	Coartem (pack of 30)	10,000	202,500
	19-Feb-2016	Malaria Misc. Commodities	470	11,459
	19-Feb-2016	Malaria Misc. Commodities	2,400	468
	19-Feb-2016	Malaria Misc. Commodities	470	2,411
	21-Oct-2015	Malaria Misc. Commodities	1	5,815
	17-Nov-2015	Long-Lasting Insecticide Treated Net	669,150	1,672,875
	17-Nov-2015	Long-Lasting Insecticide Treated Net	217,700	544,250
	17-Nov-2015	Long-Lasting Insecticide Treated Net	185,400	463,500
	17-Nov-2015	Long-Lasting Insecticide Treated Net	669,150	1,672,875
	17-Nov-2015	Long-Lasting Insecticide Treated Net	227,900	569,750

Mozambique	17-Nov-2015	Long-Lasting Insecticide Treated Net	185,400	463,500
	17-Dec-2015	Coartem (pack of 30)	10,000	528,000
	17-Dec-2015	Coartem (pack of 30)	32,128	1,465,037
	17-Dec-2015	Coartem (pack of 30)	16,710	471,222
	17-Dec-2015	Coartem (pack of 30)	19,815	279,392
	18-Dec-2015	Rapid Diagnostic Test Kit (kit of 25)	320,000	1,400,000
	07-Jan-2016	Coartem (pack of 30)	32,336	533,544
Myanmar	24-Nov-2015	Rapid Diagnostic Test Kit (kit of 25)	3,600	38,700
	09-Dec-2015	Malaria Pharmaceuticals	30	1,680
	15-Mar-2016	Rapid Diagnostic Test Kit (kit of 25)	6,000	64,500
Nigeria	21-Oct-2015	Malaria Pharmaceuticals	40,000	378,000
	18-Nov-2015	Long-Lasting Insecticide Treated Net	750,000	1,732,500
	18-Nov-2015	Long-Lasting Insecticide Treated Net	750,000	1,732,500
	18-Nov-2015	Long-Lasting Insecticide Treated Net	750,000	1,732,500
	18-Nov-2015	Long-Lasting Insecticide Treated Net	750,000	1,732,500
	18-Nov-2015	Long-Lasting Insecticide Treated Net	750,000	1,732,500
	18-Nov-2015	Long-Lasting Insecticide Treated Net	750,000	1,732,500
	18-Nov-2015	Long-Lasting Insecticide Treated Net	750,000	1,740,000
	18-Nov-2015	Long-Lasting Insecticide Treated Net	725,000	1,682,000
	18-Nov-2015	Long-Lasting Insecticide Treated Net	725,000	1,682,000
	19-Nov-2015	Long-Lasting Insecticide Treated Net	100,000	232,000
	19-Nov-2015	Long-Lasting Insecticide Treated Net	200,000	464,000
	19-Nov-2015	Long-Lasting Insecticide Treated Net	200,000	464,000
	19-Nov-2015	Long-Lasting Insecticide Treated Net	250,000	580,000
	19-Nov-2015	Long-Lasting Insecticide Treated Net	250,000	580,000
	19-Nov-2015	Long-Lasting Insecticide Treated Net	250,000	580,000
	19-Nov-2015	Long-Lasting Insecticide Treated Net	350,000	857,500
	19-Nov-2015	Long-Lasting Insecticide Treated Net	150,000	367,500
	20-Nov-2015	Long-Lasting Insecticide Treated Net	250,000	580,000
	04-Feb-2016	AS/AQ FDC (pack of 25)	4,800	17,472

	04-Feb-2016	AS/AQ FDC (pack of 25)	4,001	9,722
	04-Feb-2016	AS/AQ FDC (pack of 25)	8,000	93,120
	04-Feb-2016	AS/AQ FDC (pack of 25)	4,000	24,360
	11-Feb-2016	Coartem (pack of 30)	35,834	935,267
	11-Feb-2016	Coartem (pack of 30)	21,900	443,475
	16-Feb-2016	Coartem (pack of 30)	42,134	474,008
	16-Feb-2016	Coartem (pack of 30)	27,667	608,674
	01-Mar-2016	Rapid Diagnostic Test Kit (kit of 25)	80,000	280,000
Rwanda	19-Nov-2015	Long-Lasting Insecticide Treated Net	500,000	1,620,000
	19-Nov-2015	Long-Lasting Insecticide Treated Net	500,000	1,620,000
	09-Dec-2015	Malaria Misc. Commodities	10	880
	09-Dec-2015	Malaria Misc. Commodities	2	297
	09-Dec-2015	Malaria Misc. Commodities	2	619
	09-Dec-2015	Malaria Misc. Commodities	4	51
	09-Dec-2015	Malaria Misc. Commodities	2	217
	09-Dec-2015	Malaria Misc. Commodities	2	146
	09-Dec-2015	Malaria Misc. Commodities	4	646
	09-Dec-2015	Malaria Misc. Commodities	30	105
	22-Feb-2016	Malaria Misc. Commodities	30	1,575
	14-Mar-2016	Malaria Misc. Commodities	170	10,611
	14-Mar-2016	Malaria Misc. Commodities	170	585
	14-Mar-2016	Malaria Misc. Commodities	170	106,871
	14-Mar-2016	Malaria Misc. Commodities	170	1,505
Senegal	07-Oct-2015	Long-Lasting Insecticide Treated Net	607,500	1,421,550
	07-Oct-2015	Long-Lasting Insecticide Treated Net	607,500	1,421,550
	16-Oct-2015	Malaria Pharmaceuticals	1,750,000	612,500
	13-Nov-2015	Malaria Pharmaceuticals	38,400	67,968
	18-Dec-2015	Rapid Diagnostic Test Kit (kit of 25)	88,000	946,000
	14-Jan-2016	Long-Lasting Insecticide Treated Net	250,000	505,000
	17-Mar-2016	Coartem (pack of 30)	585	8,249

	17-Mar-2016	Coartem (pack of 30)	2,340	65,988
	17-Mar-2016	Coartem (pack of 30)	5,264	277,939
	17-Mar-2016	Coartem (pack of 30)	3,616	147,533
Stockpile	16-Nov-2015	Malaria Pharmaceuticals	200	13,734
Tanzania	06-Nov-2015	Rapid Diagnostic Test Kit (kit of 25)	13,164	148,095
	18-Nov-2015	Rapid Diagnostic Test Kit (kit of 25)	64,800	289,980
	23-Feb-2016	Long-Lasting Insecticide Treated Net	19,082	46,560
	23-Feb-2016	Long-Lasting Insecticide Treated Net	235,918	575,640
	23-Feb-2016	Long-Lasting Insecticide Treated Net	3,280	8,003
	23-Feb-2016	Long-Lasting Insecticide Treated Net	17,000	36,720
	25-Feb-2016	Long-Lasting Insecticide Treated Net	641,000	1,531,990
	25-Feb-2016	Long-Lasting Insecticide Treated Net	519,000	1,240,410
	25-Feb-2016	Long-Lasting Insecticide Treated Net	55,000	139,150
	25-Feb-2016	Long-Lasting Insecticide Treated Net	55,000	134,200
	29-Feb-2016	Long-Lasting Insecticide Treated Net	69,765	170,227
	29-Feb-2016	Long-Lasting Insecticide Treated Net	25,235	61,573
Thailand	17-Dec-2015	Malaria Pharmaceuticals	1,500	990
	17-Dec-2015	Malaria Pharmaceuticals	8,500	16,830
Uganda	23-Dec-2015	Rapid Diagnostic Test Kit (kit of 25)	17,402	104,412
	23-Dec-2015	Rapid Diagnostic Test Kit (kit of 25)	25,000	150,000
	05-Jan-2016	Malaria Pharmaceuticals	384,200	668,508
	05-Jan-2016	Malaria Pharmaceuticals	253,260	440,672
	05-Jan-2016	Malaria Pharmaceuticals	337,680	587,563
	06-Oct-2015	Long-Lasting Insecticide Treated Net	300,000	630,000
	19-Nov-2015	Long-Lasting Insecticide Treated Net	500,000	1,050,000
	14-Jan-2016	Rapid Diagnostic Test Kit (kit of 25)	18,000	83,340
	19-Feb-2016	Coartem (pack of 30)	10,154	137,079

Zambia	19-Feb-2016	Coartem (pack of 30)	44,846	739,959
	04-Mar-2016	Coartem (pack of 30)	13,335	376,047
	04-Mar-2016	Coartem (pack of 30)	15,008	247,632
	04-Mar-2016	Coartem (pack of 30)	15,008	247,632
	04-Mar-2016	Coartem (pack of 30)	15,008	220,618
Zimbabwe	06-Oct-2015	Rapid Diagnostic Test Kit (kit of 25)	33,440	167,200
	19-Nov-2015	Long-Lasting Insecticide Treated Net	735,000	2,844,450
	16-Feb-2016	Malaria Pharmaceuticals	4,660	17,941

Appendix C. DFID-Funded Procurement, October 1, 2015– September 30, 2016

DFID Zambia Orders: October 1, 2015 to March 31, 2016

Country	Funding Source	PO Date	Sub Category	Order Quantity
Zambia	DFID	14-Jan-2016	Rapid Diagnostic Test Kit (kit of 25)	18,000
	DFID	19-Feb-2016	Coartem (pack of 30)	10,154
	DFID	19-Feb-2016	Coartem (pack of 30)	44,846
	DFID	04-Mar-2016	Coartem (pack of 30)	13,335
	DFID	04-Mar-2016	Coartem (pack of 30)	15,008
	DFID	04-Mar-2016	Coartem (pack of 30)	15,008
	DFID	04-Mar-2016	Coartem (pack of 30)	15,008

Total Value
83,340
137,079
739,959
376,047
247,632
247,632
220,618

Purchase Order History "PO Date" From: '01-OCT-2015' To '31-MAR-2016' Commodity Program Areas : 'MALARIA'

Country	Source	PO#	Item Description	RO#	PO Date	GAD	Rate	Order Quantity	Total Value
Zambia	PMI	PO-PUP-2271	Bed Net, Polyester, Deltamethrin, 100 Denier (180(W) x 160(L) x 170(H) cm), Rectangular, White	RO-6509	06-Oct-2015	18-Jan-2016	2.10	300,000	630,000.00
Zambia	PMI	PO-PUP-2311	Bed Net, Polyester, Deltamethrin, 100 Denier (180(W) x 160(L) x 170(H) cm), Rectangular, White	RO-6508	19-Nov-2015	18-Jan-2016	2.10	500,000	1,050,000.00
Zambia	DFID	PO-PUC-2227	Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	RO-6853	14-Jan-2016	01-Feb-2016	4.63	18,000	83,340.00
Zambia	DFID	PO-PUC-2250	Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	RO-6893	19-Feb-2016	30-Mar-2016	16.50	44,846	739,959.00
Zambia	DFID	PO-PUC-2250	Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	RO-6893	19-Feb-2016	30-Mar-2016	13.50	10,154	137,079.00
Zambia	DFID	PO-PUC-2258	Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	RO-6927	04-Mar-2016	31-Mar-2016	28.20	13,335	376,047.00
Zambia	DFID	PO-PUC-2259	Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	RO-6928	04-Mar-2016	30-Apr-2016	16.50	15,008	247,632.00
Zambia	DFID	PO-PUC-2260	Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	RO-6938	04-Mar-2016	30-Apr-2016	16.50	15,008	247,632.00
Zambia	DFID	PO-PUC-2260	Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	RO-6938	04-Mar-2016	30-Apr-2016	14.70	15,008	220,617.60

Purchase Order History "Goods Available Date" From : '01-OCT-2015' To : '31-MAR-2016' Commodity Program Areas : 'MALARIA'

Country	Source	PO#	Item Description	RO#	PO Date	GAD	Rate	Order Quantity	Total Value
Zambia	PMI	PO-PUP-2271	Bed Net, Polyester, Deltamethrin, 100 Denier (180(W) x 160(L) x 170(H) cm), Rectangular, White	RO-6509	06-Oct-2015	18-Jan-2016	2.10	300,000	630,000.00
Zambia	PMI	PO-PUP-2311	Bed Net, Polyester, Deltamethrin, 100 Denier (180(W) x 160(L) x 170(H) cm), Rectangular, White	RO-6508	19-Nov-2015	18-Jan-2016	2.10	500,000	1,050,000.00
Zambia	DFID	PO-PUC-2227	Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	RO-6853	14-Jan-2016	01-Feb-2016	4.63	18,000	83,340.00
Zambia	DFID	PO-PUC-2250	Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	RO-6893	19-Feb-2016	30-Mar-2016	16.50	44,846	739,959.00
Zambia	DFID	PO-PUC-2250	Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	RO-6893	19-Feb-2016	30-Mar-2016	13.50	10,154	137,079.00
Zambia	DFID	PO-PUC-2258	Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	RO-6927	04-Mar-2016	31-Mar-2016	28.20	13,335	376,047.00

Appendix E. Pre-Selected RDT Manufacturers

RDTs - PRE-SELECTED LIST

Pre-Selected RDT manufacturers

Manufacturer	Test Name	Target Antigen	Species	Comments
Access Bio	CareStart™ Malaria	pLDH	PAN	
	CareStart™ Malaria 3 line	pLDH	Pf/PAN	
	CareStart™ Malaria Combo	HRP2/pLDH	Pf/PAN	
	CareStart™ Malaria	HRP2	Pf	
	CareStart™ Malaria (Pf/Pv) Combo	HRP2/pLDH	Pf/Pv	
	CareStart™ Malaria Combo	HRP2/pLDH	Pf/VOM	VOM = Vivax, Ovale, Malariae,
	CareStart™ Malaria	HRP2/pLDH	Pf	
	CareStart™ Malaria SCREEN			
ICT	Malaria Pf Casette	HRP2	Pf	
Orchid Biomedical	Paracheck Pf Device	HRP2	Pf	
Premier Medical	First Response Malaria Ag -Bulk	HRP2	Pf	
Span	ParaHIT f Device	HRP2	Pf	
	ParaHIT f Dipstick	HRP2	Pf/Pan	
	ParaHIT Total Device	HRP2	Pf/Pan	
Standard Diagnostics	Bioline Malaria Ag Pf	HRP2	Pf	
	Bioline Malaria Ag Pf/PAN	HRP2/pLDH	Pf/PAN	
	Bioline Malaria Ag Pf/Pv	HRP2/pLDH	Pf/Pv	
	Bioline Malaria Ag Pf	HRP2/pLDH	Pf	

Appendix F. Pre-Selected LLIN Manufacturers

Pre-selected LLINs Manufacturers

Brand	Manufacturer	Polyester	Polyethylene	Polypropelene	Denier	Pesticide	Whopes Status
Interceptor ®	BASF	√			75 & 100	Alpha-cypermethrin	Interim
DuraNet ®	Shobikaa Impex Private Ltd		√		145+/- 5% (138 – 152)	Alpha-cypermethrin	Full
Olyset ®	Sumitomo Chemical		√		150	Permethrin	Full
Olyset ®	A-Z Textile Mills Ltd		√		150	Permethrin	Full
DawaPlus® 2.0	Tana Netting	√			75 & 100	Deltamethrin	Interim
Permanet® 2.0	Vestergaard Frandsen	√			75 & 100	Deltamethrin	Full
					100 (roof) / 100 (sides - no border) / 75 (sides with 70cm lower border)		
Permanet® 3.0	Vestergaard Frandsen	√	√			Deltamethrin	Interim
LifeNet®	Bayer			√	100	Deltamethrin	Interim

Appendix G. WHO Pre-Qualified ACT Manufacturers

PRE-SELECTED PHARMACEUTICAL MANUFACTURERS/VENDORS

Manufacturer	Product	Details
Sanofi Aventis/Africasoins	Winthrop® FDC ASAQ	Artesunate+Amodiaquine, four dosage presentations
IPCA Laboratories Ltd	Generic FDC ASAQ	Artesunate+Amodiaquine, four dosage presentations
Novartis Pharma AG	Coartem® FDC	Artemether/Lumefantrine, 20mg/120mg, four dosage presentations
Ajanta Pharma Limited	Generic ALu	Artemether/Lumefantrine, 20mg/120mg, six dosage presentations
IPCA Laboratories Ltd*	Generic ALu	Artemether/Lumefantrine, 20mg/120mg, four dosage presentations
Cipla	Generic ALu	Artemether/Lumefantrine, 20mg/120mg, four dosage presentations
Mylan Laboratories	Generic ALu	Artemether/Lumefantrine, 20mg/120mg, four dosage presentations
Sigma Tau	Eurartesim® - PQP+DHA	Piperaquine tetraphosphate + dihydroartemisinin 160/20 mg, 320/40 mg

*Currently suspended until FDA warning letter is resolved

Appendix I. Obj. 2 PMP Indicators

Supplemental Information

INDICATOR 1: Facility stockout rate (the percentage of facilities that experienced a stockout of a product expected to be provided or issued by that site on the day of visit) (source: EUV).

Country	Date submitted	% stocked out of all ACTs	N	Comments
Burkina Faso	Oct–Dec 2015	NA	38	Because Burkina has carried only ASAQ FDC products, this indicator is not applicable and not calculated.
	Jan–Mar 2016	NA	43	
	April–June 2016	NA	41	
Ghana	Oct–Dec 2015	6.2	48	
	Jan–Mar 2016	5.4	37	
	April–June 2016	12	82	
Liberia	Oct–Dec 2015	NA	NA	At the start of this fiscal year, the EUV is now implemented by Collaborative Support for Health.
	Jan–Mar 2016	NA	NA	
	April–June 2016	NA	NA	
Malawi	Oct–Dec 2015	NA	NA	The project did not have responsibility to produce the EUV report during this quarter.
	Jan–Mar 2016	NA	NA	The project did not have responsibility to produce the EUV report during this quarter.
	April–June 2016	NA	NA	The project did not have responsibility to produce the EUV report during this quarter.
Mozambique	Oct–Dec 2015	6	65	
	Jan–Mar 2016	5	153	
	April–June 2016	NA	NA	The project did not have responsibility to produce the EUV report during this quarter.
Nigeria	Oct–Dec 2015	NA	NA	The project did not have responsibility to produce the EUV report during this quarter.
	Jan–Mar 2016	0	110	Nigeria conducts EUV on a semi-annual basis.
	April–June 2016	NA	NA	The project did not have responsibility to produce the EUV report during this quarter.
Tanzania	Oct–Dec 2015	6	203	
	Jan–Mar 2016	3	220	
	April–June 2016	9	208	
Zambia	Oct–Dec 2015	2.6	39	
	Jan–Mar 2016	10	41	
	April–June 2016	23	31	
Zimbabwe	Oct–Dec 2015	8	36	
	Jan–Mar 2016	0	35	
	April–June 2016	0	34	
	July–Sept 2016	0	37	

Notes: "Stocked out of all ACTs" indicates an absence of all four AL presentations: AL 6x1, AL 6x2, AL 6x3, and AL 6x4. Data for Ghana and Nigeria are an exception, as they reflect the absence of ACTs for all AL and AS/AQ presentations (FDC and co-blister).

Nigeria collects EUV data only on a semiannual basis, and reports separately for states receiving support from the MAPS project, and those that are not.

This indicator could not be calculated for the following TO7 presence countries, as the requisite data are not reported through the EUV or LMIS: Burkina Faso, Burundi, Liberia, Madagascar, and Rwanda.

Because of project close-out activities, last EUVs conducted by the project occurred during the April–June quarter, with the exception of Zimbabwe, which also conducted a survey in July.

INDICATOR 2

Country stockout rate: the percentage of countries experiencing a stockout at the central warehouse(s) at the time of reporting (source: PPMRm).

October–December 2015

Commodity	% stocked out	N	Countries/states stocked out
AL 6x1	5.9	17	Burma/Myanmar
AL 6x2	0	17	
AL 6x3	12.5	16	Kenya, Burma/Myanmar
AL 6x4	6.3	16	Mali
FDC AS/AQ 25/67.5mg	11.1	9	Burkina Faso
FDC AS/AQ 50/135mg	11.1	9	Burkina Faso
FDC AS/AQ 100/270mg, 3 tabs	0	9	
FDC AS/AQ 100/270mg, 6 tabs	0	9	
SP	6.3	16	South Sudan
RDTs	0	25	

January–March 2016

Commodity	% stocked out	N	Countries/states stocked out
AL 6x1	5.6	18	Burma/Myanmar
AL 6x2	5.6	18	Burma/Myanmar
AL 6x3	5.9	17	Ghana
AL 6x4	0	17	
FDC AS/AQ 25/67.5mg	0	9	
FDC AS/AQ 50/135mg	0	9	
FDC AS/AQ 100/270mg, 3 tabs	11.1	9	Ghana
FDC AS/AQ 100/270mg, 6 tabs	0	9	

SP	11.8	17	Malawi, Zambia
RDTs	0	25	

April–June 2016

Commodity	% stocked out	N	Countries/states stocked out
AL 6x1	0	17	
AL 6x2	0	17	
AL 6x3	6.3	16	Kenya
AL 6x4	6.3	16	Malawi
FDC AS/AQ 25/67.5mg	0	9	
FDC AS/AQ 50/135mg	0	9	
FDC AS/AQ 100/270mg, 3 tabs	0	10	
FDC AS/AQ 100/270mg, 6 tabs	0	10	
SP	23.5	17	Burkina Faso, Guinea, Madagascar, Malawi
RDTs	0	24	

INDICATOR 6: Percentage of countries receiving field support TA funds reporting on supply chain performance via the EUV activity

Country	End-use carried out by the project	Note
Burkina Faso	Yes	The project began the EUV in February 2014 and completed its 7 th round in March.
DRC	No	This activity is conducted by SIAPS.
Ghana	Yes	Ghana has implemented and currently share reports on the EUV activity on a quarterly basis since July 2009.
Guinea	No	Guinea is not currently receiving field support TA funds to conduct an EUV activity at this time.
Liberia	No	At the start of this fiscal year, EUV implementation transitioned to Collaborative Support for Health (CSH).
Madagascar	No	The end-use activity has been unable to proceed in Madagascar, as per the prohibition on partnering with the host government.
Malawi	Yes	The project assumed responsibility for the end-use activity in January 2011.
Mozambique	Yes	The EUV commenced in September 2011 and is conducted in conjunction with a government supervisory activity.
Nigeria	Yes	The first EUV activity was conducted in November 2012 and is carried out on a semi-annual basis.
RDMA	No	No countries in RDMA have been selected to execute EUV surveys by PMI MOPs.

Rwanda	N/A	Although Rwanda is a TO7 presence country, responsibility for the end-use activity was transferred to the SPS project, as per the FY10 MOP; it is thus not included in the denominator for this indicator.
Tanzania	Yes	Tanzania has been conducting the EUV survey since January 2009.
Zambia	Yes	<p>During this period, the malaria case management EUV exercise has been conducted twice (December 2014 and February 2015). NMCP was involved in the data analysis prior to report writing. This was conducted in an effort to build capacity in NMCP to ensure sustainability of the EUV exercise and to allow them an opportunity to appreciate the process.</p> <p>The results of the two EUV exercises were shared with NMCP and other stakeholders. Of all cases sampled, 51% were malaria cases. The results also showed that of all malaria cases, 81% were diagnosed using RDTs while 17% were diagnosed using clinical method. Further results showed that 81% of under-5 children diagnosed with malaria were treated with ACTs.</p> <p>The next EUV exercise is scheduled for May 2015.</p>
Zimbabwe	Yes	Zimbabwe has been conducting the end-use activity quarterly since January 2012.

Appendix J. Environmental Monitoring and Mitigation Plan

**The DELIVER Task Order 7 Malaria
EMMP Part 2 of 3: Mitigation Plan**

Category of Activity from Section 4 of PIEE	Description of Mitigation Measures for these activities as required in Section 5 of PIEE	Monitoring Indicator	Status of Mitigative Measures	List any outstanding issues relating to required conditions	Remarks
The direct or indirect methods that, result in the generation and disposal of hazardous or highly hazardous medical waste (e.g., administration of injectables (for severe malaria treatment), and malaria diagnostics using rapid diagnostic testing kits).	<p>We do not anticipate that we will be undertaking any activities that result in generation of hazardous waste. However as we will be procuring a number of products that will require appropriate waste management we propose the following:</p> <ol style="list-style-type: none"> 1. At the request of the USAID Mission or PMI Washington we will provide guidelines and/or training on the appropriate disposal of hazardous or highly hazardous medical waste 2. Project developed RDT waste guidance, which is made available on the project's website 3. Project will seek confirmation from the Mission that acknowledges the existence of waste guidelines. 	<ol style="list-style-type: none"> 1. Number of instances when DELIVER TO7 has been requested to provide guidelines or training. 	<ol style="list-style-type: none"> 1. 0. No requests have been made for training 	N/A	Annually
Procurement, storage, management and disposal of public health commodities, including pharmaceutical drugs, LLINs and laboratory supplies and reagents.	<ol style="list-style-type: none"> 1. In cases where the project's role is limited to procurement and delivery to the port of entry, environmental considerations related to the generation and disposal of medical waste will be within the scope of the USAID Mission rather than the Bureau for Global Health. 2. Consignees for all pharmaceutical drugs and other public health commodities procured under this funding will be advised to store the product according to the information provided on the manufacturer's MSDS 3. Any grants or monetary transfers of USAID funds (e.g., subgrants) to support TO7 procurement, storage, management and disposal activities will incorporate provisions that the activities to be undertaken will comply with the 	<ol style="list-style-type: none"> 1. Product-specific information documenting disposal requirements provided to recipients 2. Percentage of disposed products under project control returned to supplier or dealt with according to WHO guidelines 	<ol style="list-style-type: none"> 1. Complete, and local USAID Mission IEE on file 2. 100% 	N/A	Annually

Category of Activity from Section 4 of PIEE	Description of Mitigation Measures for these activities as required in Section 5 of PIEE	Monitoring Indicator	Status of Mitigative Measures	List any outstanding issues relating to required conditions	Remarks
	<p>environmental determinations and recommendations of the PIEE</p> <p>4. If disposal of any pharmaceutical drugs under project control is required, due to expiration date or any other reason, the project will first pursue the preferred method of disposal of returning the product to the manufacturer. If this is not possible, the project will follow the guidelines in the WHO document <i>Guidelines for Safe Disposal of Unwanted Pharmaceuticals During and After Emergencies</i></p>				
Use, procurement, or storage of pesticides or pesticide containing material.	<p>1. In cases where the project's role is limited to procurement and delivery to the port of entry, environmental considerations related to the generation and disposal of medical waste will be within the scope of the USAID Mission rather than the Bureau for Global Health.</p> <p>2. The project will adhere to WHOPES recommendations and established QA/QC policies when procuring LLINs. If there is a change or addition to the class of insecticides (currently pyrethroids) acceptable for use with nets, the project EMMP will be adapted to respond to any changes necessary from the PIEE.</p> <p>3. For countries where LLIN registration is required, the project will only procure those nets that both meet WHOPES recommendations and are registered in the country.</p> <p>4. Upon request, the project will work with in-country implementing BCC parties to ensure appropriate BCC information concerning proper use and disposal of LLINs will be included when nets are provided, including flyers or other information for individuals during distribution campaigns.</p> <p>5. The project will adhere to the</p>	<p>1. Percentage of LLIN shipments with pre-shipment test reports available</p> <p>2. Percentage of LLINs procured that are registered in accordance with country policies (if required by the country)</p> <p>3. Recorded instances of assistance provided for development/distribution of BCC materials</p>	<p>1. 100%</p> <p>2. 100%</p> <p>3. 0</p>	N/A	

Category of Activity from Section 4 of PIEE	Description of Mitigation Measures for these activities as required in Section 5 of PIEE	Monitoring Indicator	Status of Mitigative Measures	List any outstanding issues relating to required conditions	Remarks
	<p>recommendations identified in the Programmatic Environmental Assessment for Malaria Vector control, dated January 2007, for:</p> <ul style="list-style-type: none"> ○ Procurement ○ Storage ○ Inventory Control ○ Use ○ Waste Disposal <p>6. Project has funded recycling efforts.</p>				
Small-scale rehabilitation of health or laboratory facilities	<p>We do not anticipate that we will be undertaking any large scale construction. For small scale construction:</p> <p>1. Rehabilitation of existing facilities shall be conducted following the principles provided in the Small Scale Construction chapter of the USAID Environmental Guidelines for Small-Scale Activities in Africa</p>	<p>1. Documented verification of Mission IEE on file</p> <p>2. Recorded instances of small scale construction that follows USAID Environmental Guidelines for Small-Scale Activities in Africa</p>	<p>1. IEE on file</p> <p>2. 0. There have been no recorded instances of small-scale rehabilitation of health or laboratory facilities</p>		
Other activities that are not covered by the above categories: Describe	NA	NA			NA

Appendix L. Performance Monitoring Plan

USAID | DELIVER PROJECT Task Order Malaria
Performance Monitoring Plan

	Outcome	Indicators	Numerator / Denominator	Source	Frequency	Comments	Measures project performance	Measures factors beyond project control
Objective 1. Improve and expand USAID's provision of malaria commodities to programs (50-60 percent LOE)								
<i>Direct procurement services</i>								
	Monthly procurement scorecard implemented	Monthly scorecard available which includes the following the indicators: Orders available for shipping on time; Orders shipped on time; Orders received on time; Supplier fill rates; Right quantity received; Goods arrived in right condition	Number of scorecards with 80% of the indicators available / number of months	DelPHi, Management reports	Monthly		X	
	Orders shipped on time	Percentage of orders available for shipping within 10 working days of contracted date with the vendors	Number of orders available for shipping within 10 working days of contracted date with the vendor / Total number of orders placed to the vendor	DelPHi	Semi-annual		X	X
	Orders received on time	Percentage of orders received by consignee countries within a month of agreed date with the mission	Number of orders received by consignee countries within a month of agreed date with the mission / Total number of orders placed by consignee countries	DelPHi	Semi-annual	The CPIR has been received and the money is available for the order	X	X
	Suppliers deliver ordered commodities to satisfy contractual requirements	Supplier fill rate (contracted quantity on time) (by products)	Number of on-time delivery of the agreed upon quantity / Total number of orders placed	DelPHi	Semi-annual	Full quantity means agreed upon quantity with mission at the time of order placement		X
	Respond to emergency orders as per PMI/USAID requests	Percentage of emergency orders responded to during the previous 6 months	Number of emergency orders for which a purchase order was placed / number of emergency orders	DelPHi	Semi-annual	The PMI/USAID team must formally acknowledge a request as an "emergency, " which signifies initiation of the request	X	
<i>Management information system</i>								
	Availability of functioning MIS to USAID PMI staff	Percentage of time the USAID DELIVER PROJECT website is available	Amount of time the USAID DELIVER PROJECT website was available/Total amount of service hours	Performance Metrics Report	Monthly	For service hours see Service Level Agreement	X	
	Total number of visits	Total number of visits to the USAID DELIVER PROJECT website	N/A	Performance Metrics Report	Monthly		X	X
	Number of logins	Total number of logins for the Oracle Portal	N/A	Performance Metrics Report	Monthly	Logins include MMIS and SDG websites.	X	
<i>Quality assurance and quality control</i>								
	Quality assurance and quality control procedures established and implemented	Percentage of LN shipments with pre-shipment test reports available	Number of LN shipments with pre-shipment test report available / Number of LN shipments for which a pre-shipment test report should be available	QA/QC Report Cards, inspection reports, certificates of conformation	Semi-annual		X	
		Median time (in days) and range required for pre-shipment LN tests reports	N/A				X	X
		Percentage of RDT shipments with up-to-date post-shipment test reports available	Number of RDT shipments with up to date post-shipment test reports available / Number of RDT shipments	QA/QC Report Cards, RDT post-shipment test report, certificates of conformation	Semi-annual	Based on SOPs	X	
		Median time (in days) and range required for up to date post-shipment RDT test reports	N/A		Semi-annual		X	X
		Percentage of pharmaceutical shipments with pre-shipment certificates of conformance	Number of pharmaceutical shipments with pre-shipment certificates of onformance / Number of pharmaceutical shipments	QA/QC Report Cards, certificates of conformation	Semi-annual		X	X
		Median time (in days) and range required for pre-shipment pharmaceutical test reports	N/A		Semi-annual		X	X

	Outcome	Indicators	Numerator / Denominator	Source	Frequency	Comments	Measures project performance	Measures factors beyond project control
Objective 2: Strengthen in-country supply systems and capacity for management of malaria commodities (30-40 percent LOE)								
	Monitoring of in-country supply chain performance	Facility stockout rate: by product, the percentage of facilities that experienced a stockout on the day of the visit/report	In TO7 presence countries, number of facilities experiencing a stockout of a given product on the date of visit or at the time of reporting / In TO3 presence countries, the total number of facilities reporting via LMIS, or End-Use reports	LMIS, End-Use Verification reports	Semi-annual			X
		Country stockout rate: by product, the percentage of countries experiencing a stockout at the central warehouse(s) at the time of reporting	In TO7 presence countries, number of countries experiencing a stockout of a given product at the central warehouse(s) at time of reporting / In TO3 presence countries, the total number of facilities reporting data for the PPMRm	PPMRm	Semi-annual			X
		Functioning LMIS: Proportion of project-presence countries with an LMIS that routinely reports stock status from SDP level	In TO7 presence countries, number of countries with a functioning LMIS / Total number of TO7 presence countries	Country reports	Semi-annual			X
	Respond to STTA needs as per mission requests	Percentage of STTA trips per Mission's or PMI Washington ad hoc request conducted on time (within 14 days of the requested date)	Number of ad hoc STTA requests filled within 14 days of requested date/ Total number of ad hoc STTA requests	Program documents	Semi-annual	Ad hoc is outside of workplan	X	
	In-country supply chain data management system developed or improved	Quantity of malaria commodities (LNs, SP tablets, ACT treatments, RDTs) distributed in country using funds obligated to USAID DELIVER PROJECT	N/A	Management reports, Delphi3, LMIS, program records/reports	Semi-annual		X	
		Percentage of countries receiving field support TA funds reporting on supply chain performance via the End-Use Verification Activity	Number of TO7 presence countries participating in the end-use monitoring activities / TO3 presence countries that have been tasked with leading the End-Use activity	End use verification reports	Semi-annual	Countries where the project is leading PMI's end use monitoring	X	X
		Number of individuals trained on the supply chain management of malaria commodities	N/A	Activity reports	Semi-annual	Anyone who was trained other than USAID DELIVER PROJECT staff	X	
		Percentage of countries with field support TA funds reporting central level stock levels of select malaria products in quarterly stock monitoring reports	Number of TO7 presence countries providing data for the PPMRm/Number of TO7 presence countries	Quarterly stock monitoring report	Semi-annual	Countries where the project is leading PMI's PPMRm reporting	X	
		Functioning Coordination Committee: Percentage of countries that have a logistics coordination mechanism in place that includes participation of NMCP and CMS (or their equivalents), with a meeting that takes place at a specifically appointed time (e.g. during a reporting quarter)	Number of TO7 presence countries with a functioning malaria logistics coordination committee / TO7 presence countries	Quarterly country reports	Semi-annual		X	X
		Available supply plans: Percentage of countries that have developed supply plans for PMI funded commodities	Number of TO7 presence countries that have developed supply plans for PMI-funded commodities / TO7 presence countries	Quarterly country reports	Semi-annual		X	X
		Number of technical reports or tools developed to support malaria supply chain performance	N/A	Program reports	Semi-annual		X	
Objective 3: Improve global supply and availability of malaria commodities (5-7 percent LOE)								
	Support global and regional stakeholders/forums of SCM technical issues	Number of global, regional and country level malaria initiatives with DELIVER technical contributions	N/A	Program reports	Semi-annual		X	

Appendix M. TO7-Funded Short Term Technical Assistance October 1, 2015–September 30, 2016

Country	FirstName	LastName	TripStartDate	TripEndDate	Project	SOW	ObjectiveList
Zambia	Jennefer	Schultz	10/3/2015	10/17/2015	DELIVER II	Purpose:Provide administrative support, guidance and review on the managem	Program Management
Liberia	Audrey	Sullivan	10/5/2015	10/16/2015	DELIVER II	Purpose:Management Visit Provider(s): Audrey Sullivan, Regional Manager	PerioTO Malaria
Zambia	Andrew	Kigozi	10/5/2015	10/23/2015	DELIVER II	Purpose:Provide administrative support, guidance and review on the managem	Program Management
Netherlands and Singapore	Kate	Coleman	10/10/2015	10/18/2015	DELIVER II	Purpose:As a part of the inventory management responsibilities for Task Order 5	Program Management, TO Malaria
Netherlands and Singapore	Scott	Dubin	10/10/2015	10/18/2015	DELIVER II	Purpose:As a part of the inventory management responsibilities for Task Order 5	Program Management, TO Malaria
Rwanda	Mariana	da Silva	10/10/2015	10/17/2015	DELIVER II	Purpose:Attend a meeting for moderate and high transmission of malaria count	TO Malaria
Madagascar	Motomoke	Eomba	10/16/2015	11/7/2015	DELIVER II	Purpose:Supply Chain Management for Commodity Security course and manage	TO Malaria, TO Public Health
Madagascar	Norbert	Pehe	10/17/2015	11/16/2015	DELIVER II	Purpose:Supply Chain Management for Commodity Security course and manage	TO Malaria, TO Public Health
Nigeria	Abdurhama	Shifa	10/24/2015	11/7/2015	DELIVER II	Purpose:Finance and Operations Systems Assessment	Provider(s): Olga GolovaneProgram Management
Nigeria	Olga	Golovanen	10/24/2015	11/7/2015	DELIVER II	Purpose:Finance and Operations Systems Assessment	Provider(s): Olga GolovaneProgram Management
Malawi	Johnnie	Amenyah	10/28/2015	11/7/2015	DELIVER II	Purpose:To assist the MOH Health Technical Support Services (HTSS) Directorate	TO Malaria, TO Public Health
Malawi	Safia	Ahsan	10/28/2015	11/11/2015	DELIVER II	Purpose:To assist the MOH Health Technical Support Services (HTSS) Directorate	TO Malaria, TO Public Health
Malawi	Ashefani	Desta	10/30/2015	6/30/2016	DELIVER II	Provider(s): Ashenafi DestaPeriod of Performance:o/a November 1, 2015-June 3	TO Malaria, TO Public Health
South Africa	Egbert	Bruce	11/1/2015	11/7/2015	DELIVER II	Scope of Work:The primary objective of this STTA is to participate in the worksh	TO Malaria, TO Public Health
Liberia	Tenly	Snow	11/6/2015	11/21/2015	DELIVER II	Purpose:Reinforce Proof of Delivery (POD) reconciliation and documentation of	TO Malaria
Tanzania	Brian	Serumaga	11/6/2015	11/25/2015	DELIVER II	Purpose:Finalize development of training materials and manual and of the resul	TO Malaria, TO Public Health
Tanzania	David	Paprocki	11/6/2015	11/25/2015	DELIVER II	Purpose:Finalize development of training materials and manual and of the resul	TO Malaria, TO Public Health
Cambodia	Chris	Warren	11/9/2015	11/16/2015	DELIVER II	Purpose:Travel to Cambodia to attend Bi-Regional Meeting of Malaria Drug Resis	TO Malaria
Zimbabwe	Greg	Roche	11/9/2015	6/10/2016	DELIVER II	Purpose:Provide Deputy Country Director support for the ZW field office activiti	TO Malaria
Liberia	Naomi	Printz	11/12/2015	11/24/2015	DELIVER II	Purpose:Quantification for malaria commodities	Provider(s): Naomi Printz, DepuTO Malaria
Mali	Tenly	Snow	11/28/2015	12/13/2015	DELIVER II	Purpose:Work with PPM and subcontractor PSI to resolve outstanding work ord	TO Malaria
Zambia	Nana	Konadu	12/2/2015	12/17/2015	DELIVER II	Purpose:Finance and Operations Management Visit	Provider(s): Nana Konadu, CTO Malaria, TO Public Health
Mali	Minal	Amin	12/5/2015	12/12/2015	DELIVER II	Purpose: Work with PSI and DELIVER to resolve outstanding work orders in Mali	TO Malaria
Cambodia	Loren	Bausell	1/2/2016	1/6/2016	DELIVER II	Purpose:A Task Order 7 (TO7) Technical Advisor will travel from Hanoi, Vietnam	TO Malaria
Zambia	Nana	Konadu	1/9/2016	1/29/2016	DELIVER II	Purpose:Finance and Operations Coverage	Provider(s): Nana Konadu, Country PrTO Malaria, TO Public Health
Liberia	Emma	Stewart	1/11/2016	1/22/2016	DELIVER II	Purpose:Gather necessary data and build a basic network model for a national s	TO Malaria, TO Public Health
Liberia	Julia	Bem	1/11/2016	1/22/2016	DELIVER II	Purpose:Gather necessary data and build a basic network model for a national s	TO Malaria, TO Public Health
Liberia	Steven	Perry	1/11/2016	1/22/2016	DELIVER II	Purpose:Gather necessary data and build a basic network model for a national s	TO Malaria, TO Public Health
Angola	Scott	Dubin	1/12/2016	1/28/2016	DELIVER II	Purpose:Delivery of malaria commodities to Angolan Ministry of Health wareho	TO Malaria
Ghana	David	O'Brien	1/12/2016	6/10/2016	DELIVER II	Purpose:Provision of Long Term Technical Assistance (TA) to support the SCMP i	TO Malaria, TO Public Health
Laos	Nina	Frankel	1/21/2016	6/30/2016	DELIVER II	Purpose: U.S. based short term technical assistance to be provided over a six mo	TO Malaria
Zambia	Aina	Ravelojaon	1/25/2016	1/31/2016	DELIVER II	Purpose:Senior Finance Manager relocation	Provider(s): Aina RavelojaonaPeriodTO Malaria, TO Public Health
Switzerland	Chris	Warren	1/28/2016	2/6/2016	DELIVER II	ountry: Switzerland TA	Provider(s): Chris Warren Project: USAID DELIVER PROJE
Nigeria	Mike	Geurink	2/10/2016	3/6/2016	DELIVER II	Purpose:Short-Term Technical Assistance for Finance/Admin and HR support for	Program Management, TO Malaria, TO Public Health
Liberia	Andrew	Inglis	2/15/2016	3/2/2016	DELIVER II	Purpose:Conduct system design workshop	Provider(s): Naomi Printz, Andrew IngTO Malaria, TO Public Health
Liberia	Naomi	Printz	2/16/2016	3/2/2016	DELIVER II	Purpose:Conduct system design workshop	Provider(s): Naomi Printz, Andrew IngTO Malaria, TO Public Health
Liberia	Peter	Williams	2/19/2016	3/5/2016	DELIVER II	Purpose:Finance and Administration support	Provider(s): Jos WilliamsPeriod of TO Malaria, TO Public Health
Madagascar	Norbert	Pehe	2/20/2016	4/4/2016	DELIVER II	Purpose:Provide technical and management support. Provider(s): Norbert Aime	TO Malaria, TO Public Health
Madagascar	Therese	Muyingo	2/27/2016	3/19/2016	DELIVER II	Purpose:Provide technical and management support. Provider(s): Norbert Aime	TO Malaria, TO Public Health
Ghana	Pardon	Moyo	2/29/2016	3/15/2016	DELIVER II	Purpose:To develop security SOPs and training materials for warehouse security	TO Malaria, TO Public Health
Rwanda	John	Durgavich	2/29/2016	3/12/2016	DELIVER II	Purpose:Quantification for malaria commodities	Provider(s): One Technical AdviTO Malaria
South Sudan,	Edward	Wilson	3/2/2016	3/4/2016	DELIVER II	Purpose:Participate in DELIVER South Sudan Closeout Event	Provider(s): Edward Program Management
Kenya	Laud	Baddoo	3/6/2016	3/11/2016	DELIVER II	Purpose:	Participate in Regional Health Products Management Program Management, TO Malaria
Thailand	Chris	Warren	3/8/2016	3/12/2016	DELIVER II	Purpose:Travel to Thailand for Second Asia Symposium, Addressing infectious di	TO Malaria
Zimbabwe	Amy	Studenic	3/11/2016	3/27/2016	DELIVER II	Purpose:Finance and Administrative Closeout Preparation visit	Provider(s): AndrProgram Management, TO Malaria
Zimbabwe	Andrew	Kigozi	3/11/2016	3/27/2016	DELIVER II	Purpose:Finance and Administrative Closeout Preparation visit	Provider(s): AndrProgram Management, TO Malaria
Cambodia	Loren	Bausell	3/13/2016	3/18/2016	DELIVER II	Purpose:A Task Order 7 (TO7) Technical Advisor will travel from Hanoi, Vietnam	TO Malaria
South Sudan,	Fiker	Befekadu	3/20/2016	3/31/2016	DELIVER II	Purpose:Finance and Administrative Closeout Visit	Provider(s): Fiker Befekadu, F Program Management, TO Malaria, TO Public Health
Benin	Heather	Casciato	3/23/2016	4/8/2016	DELIVER II	Purpose:Oversee LLIN Distribution to Health Facilities	Provider(s): HeaTO Malaria
DR congo	Motomoke	Eomba	3/26/2016	4/19/2016	DELIVER II	Purpose:Facilitate a TOT workshop	Provider(s): Motomoke Eomba, Director of CaTO Malaria
DR congo	Therese	Muyingo	3/26/2016	4/19/2016	DELIVER II	Purpose:Facilitate a TOT workshop	Provider(s): Motomoke Eomba, Director of CaTO Malaria
Malawi	Lisa	Hare	3/27/2016	4/4/2016	DELIVER II	Purpose:Malawi PSC Transition	Provider(s): Lisa A Hare, Director Task Order MaTO Malaria
Ghana	Audrey	Sullivan	3/29/2016	4/9/2016	DELIVER II	Purpose:Management Visit	Provider(s): Audrey Sullivan, Regional ManagerPerioProgram Management

Liberia	Brian	Serumaga	3/29/2016	4/16/2016	DELIVER II	Purpose:Cost new supply chain design Provider1 STTA provider Period of Perfor TO Malaria, TO Public Health
Zimbabwe	Walter	Proper	3/30/2016	4/6/2016	DELIVER II	Purpose:Zimbabwe Transition Provider(s): Walter Proper, TO4 DirectorPeriod ofProgram Management, TO Malaria, TO Public Health
Malawi	Michael	Egharevba	4/2/2016	4/23/2016	DELIVER II	Purpose:Malawi Annual National Quantification 2016Proposed Provider: Techni TO Malaria
Nigeria	Johnnie	Amenyah	4/4/2016	4/18/2016	DELIVER II	Purpose:Nigeria Transition Provider(s): Johnnie Amenyah, Director of Country I TO Malaria, TO Public Health
Liberia	Audrey	Sullivan	4/9/2016	4/15/2016	DELIVER II	Purpose:Management Visit Provider(s): Audrey Sullivan, Regional ManagerPeric Program Management
Rwanda	Johnnie	Amenyah	4/23/2016	5/2/2016	DELIVER II	Purpose:Transition planning in Rwanda Provider(s): Johnnie Amer Program Management, TO Malaria, TO Public Health
Ghana	Andrew	Inglis	4/25/2016	5/13/2016	DELIVER II	Purpose:Route cost and optimization for health commodity distribution in the E TO Malaria, TO Public Health
Nigeria	Michael	Egharevba	4/25/2016	5/6/2016	DELIVER II	Purpose:To provide intensive field based senior managerial and technical suppo TO Malaria
Cambodia	Emma	Stewart	4/29/2016	5/10/2016	DELIVER II	Purpose:To assist the National Center for Parasitology, Entomology and Malaria TO Malaria
Cambodia	Loren	Bausell	4/29/2016	5/10/2016	DELIVER II	Purpose:To assist the National Center for Parasitology, Entomology and Malaria TO Malaria
Ghana	David	Paprocki	5/2/2016	5/9/2016	DELIVER II	Purpose:To develop security SOPs and training materials for warehouse security TO Malaria, TO Public Health
Malawi	Peter	Williams	5/18/2016	6/3/2016	DELIVER II	Purpose:To provide Finance and Administrative support in preparation for progr Program Management
Tanzania	Michele	Weaverling	5/24/2016	6/3/2016	DELIVER II	Purpose:To provide logistical, technical, and strategic support for the Tanzania o Program Management
Mozambique	Wellington	Zinhanga	5/25/2016	5/30/2016	DELIVER II	Purpose:Travel from Zimbabwe to Mozambique for inventory count and comple TO Malaria
Malawi	Farai	Chiwade	6/6/2016	6/11/2016	DELIVER II	Purpose:Travel from Mozambique to Malawi for inventory count and completion TO Malaria, TO Public Health
Malawi	Munyaradz	Zaba	6/6/2016	6/11/2016	DELIVER II	Purpose:Travel from Mozambique to Malawi for inventory count and completion TO Malaria, TO Public Health
Mali	Jennifer	Pietropaoli	6/11/2016	6/25/2016	DELIVER II	Purpose:Work with Mali in-country subcontractors on inventory transfer and to TO Malaria
Nigeria	Mike	Geurink	6/13/2016	9/9/2016	DELIVER II	Purpose Short-Term Technical Assistance for Finance/Admin and HR Closeout su Program Management
Malawi	Sam	Schmader	6/15/2016	7/1/2016	DELIVER II	Purpose:To provide operational support in preparation for program close-out.Pr Program Management
Mali	Joseph	Kere	6/16/2016	6/23/2016	DELIVER II	Purpose:Travel from Ghana to Mali by selected auditing vendor for inventory co TO Malaria
Zimbabwe	Tapiwa	Mukwashi	6/17/2016	6/17/2016	DELIVER II	Tapiwa Mukwashi, Senior Logistics Advisor to travel from Monrovia, Liberia to H Program Management
Nigeria	Marilyn	Noguera	6/20/2016	7/8/2016	DELIVER II	1.Help the field office facilitate and oversee the physical stock audits and transfe Program Management
Nigeria	Suliman	Kazimi	6/20/2016	8/19/2016	DELIVER II	Purpose:Finance SCOD Administrative Closeout VisitProvider(s): Suliman Kazimi, Program Management
Nigeria	Eduardo	Segatore	6/24/2016	7/8/2016	DELIVER II	Purpose:Ensure that final DELIVER TO7 (Malaria) shipments are delivered on tir TO Malaria
Liberia	Zoe	Matza	6/25/2016	7/9/2016	DELIVER II	Purpose:To provide operational support in preparation for program close-out.Pr Program Management
Nigeria	Miriam	Sohlberg	7/2/2016	8/3/2016	DELIVER II	Short-Term Technical Assistance for Finance and Administrative Closeout suppo TO Malaria, TO Public Health
Nigeria	Shapoor	Nabi	7/2/2016	8/19/2016	DELIVER II	Statement of WorkPurpose:Finance and SCOD Administrative Closeout VisitProv Program Management
Mozambique	Blythe	Elkin	7/5/2016	8/5/2016	DELIVER II	Purpose:Mozambique Field Office Close OutProvider(s): Blythe ElkinsFinance & Program Management
Cambodia	Loren	Bausell	7/17/2016	7/19/2016	DELIVER II	Purpose:A Task Order 7 (TO7) Technical Advisor will travel from Hanoi, Vietnam TO Malaria
Ethiopia	Emily	Donahue	7/30/2016	8/13/2016	DELIVER II	Name(s) of Traveler(s): Emily DonahueTitle(s) of Traveler(s): Country (Ethiopia), Program Management
Mozambique	Laura	Wille	7/30/2016	8/19/2016	DELIVER II	Purpose:Mozambique Field Office Close OutProvider(s): Laura WilleProgram Off Program Management, TO Malaria
Tanzania	Edward	Wilson	7/30/2016	8/6/2016	DELIVER II	Purpose:USAID DELIVER - Multi-award (GHSC-TA) Transition VisitProvider(s): E Program Management
Zambia	Abbey	Gonter	7/30/2016	10/22/2016	DELIVER II	Purpose:Provide coverage for the Senior Finance Manager of the Zambia Field C Program Management, TO Malaria, TO Public Health
Nigeria	Yusef	Babaye	7/31/2016	8/1/2016	DELIVER II	Yusuf Babaye, Liberia Country Director, to travel from Monrovia, Liberia, to Abuj Program Management
Rwanda	Alexander	Naguit	8/4/2016	9/2/2016	DELIVER II	Purpose:To support project close out.Provider(s): Alexander Naguit, Finance and Program Management
Ghana	Seni	Compaore	8/20/2016	8/26/2016	DELIVER II	In support of the finance and administrative closeout of the DELIVER Ghana fiel Program Management
Netherlands	Kristiann	Fry	8/23/2016	8/26/2016	DELIVER II	Purpose:The USAID DELIVER Project is closing in February, 2017, and will be tra TO Malaria
Burkina Faso	Seni	Compaore	8/25/2016	9/8/2016	DELIVER II	Purpose:To support project close out.Provider(s): Seni Compaore, Finance and Program Management
Tanzania	Moses	Kiema	9/23/2016	10/8/2016	DELIVER II	Purpose:Finance and Administrative Closeout VisitProvider(s): Moses Kiema, Finance Program Management
Zimbabwe	Fiker	Befekadu	9/23/2016	10/7/2016	DELIVER II	In support of the finance and administrative closeout of the DELIVER and SCMS Program Management

Appendix N. EUV Summary Table

	BURKINA FASO	GHANA	LIBERIA	MALAWI	MOZAMBIQUE	NIGERIA	TANZANIA	ZAMBIA	ZIMBABWE
Date of Last Implementation	March 2016	February 2016	September 2015 by DELIVER; now implemented by Collaborative Support for Health (CSH)	May 2015	March 2016	February 2016	January 2016	February 2015	January 2016
Number of Surveys Completed	7	24	2010: 2 under DELIVER 2011 - late 2013: 5 (SIAPs) March 2014 - Sept 2015: 5 (DELIVER)	19 (17 DELIVER, 2 SPS)	11	7	27	20	15
Survey Frequency	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly, but at the discretion of the Government of Mozambique	Bi-annual	Quarterly	Quarterly	Quarterly
Facility Information**	1858 facilities in the country (including 133 which don't manage commodities)	2550 facilities in the country	643+ health facilities in country (per 2013 MoH&SW facility list); 430 facilities in the five PMI-supported counties. *In Montserrat County and larger towns in other counties, up to a quarter of the facilities on the list had changed.	Approx. 650 facilities in the country	1425 facilities in the country plus 10 provincial warehouses and 142 district warehouses.	2,216 facilities across 11 PMI-supported states	4468 facilities in the country	1956 facilities in the country	1409 facilities in the country
Methodology	Nationally representative sample over the course of year, multi-level stratified random sample (by facility type and region/district), 95% confidence level ($p > .05$), with the intention for each indicator, aggregated annually, to have a margin of error of approximately 7.5 percent. All 13 regions of the country are covered annually.	Nationally representative sample over the course of the year, multi-level stratified random sample (by facility type and district), 95% confidence level ($p > .05$), with the intention for each indicator, aggregated annually, to have a margin of error of approximately 7.5 percent.	Currently combined with the data verification activity (under the Interim Approach), this EUV is currently limited to the five PMI counties (comprising ~70% of the population and HFs). Multi-level stratified random sample (by facility level and county) of 10% of the sites in Montserrat and 25% of the sites in the remaining four counties each quarter. County Depots are also included in each round.	The sample is stratified by district and facility type (facility and hospital, including CHAM and MOH). The EUV is conducted on a random sample of at least 2 facilities per district in each of the 28 districts countrywide.	Original plan for nationally representative sample was ultimately not approved by the NMCP. Currently, a mix of random and purposeful sampling, covering all provinces over the course of the year. 1 provinces covered each month, with 2 districts randomly selected within each. In each district, the district warehouse is selected, plus one urban health unit, 1 rural health center, and 1 CHW/API. For SCM supervision the HU are chosen with the provincial Medical Chiefs based in performance using the SCM feedback report.	Nigeria is unique, in that the universe of facilities to be sampled are only PMI-supported facilities. The random selection is stratified by state and facility type (secondary and primary level facilities). As the number of PMI supported states has increased over time (from 8 to 11), so has the number of states (and facilities) covered by the survey.	Multi-level stratified random sample (by facility type and district), nationally representative for each quarter; 95% confidence level ($p > .05$), with the intention for indicators each quarter to have a margin of error of approximately 7 percent.	Sampling methodology was revised and is now designed to be nationally representative (as of September 2014). Multi-level, stratified random sample (by facility type and province; covers all provinces each quarter. Random selection of a minimum of 158 facilities per year, or approximately 40 per quarter. This methodology allows for a 95% confidence level ($p > .05$), with the intention for indicators, aggregated annually, to have a margin of error of 7.5%.	Multi-level, stratified random sample (by facility type and district) across all provinces over the course of four quarters. The sampling plan incorporates a district-level approach into sampling, pulling a proportional selection (proportion to the number of facilities) of random selection of a minimum of 158 facilities per year, and randomly samples a minimum of 154 treating facilities across these districts, over the course of four quarters. This methodology allows for a 95% confidence level ($p > .05$), with the intention for indicators, aggregated annually, to have a margin of error of 7.5%.
Changes in Methodology	None	None	None	None	None	None	Updated to be nationally representative on a quarterly basis as of April 2012	Updated to be nationally representative on an annual basis as of September 2014	None
Number of Sites	Approximately 40 sites are visited each quarter	Approximately 40 sites are visited each quarter	Latest EUV surveyed 76 facilities (711 health facilities and 5 county depots); total of 280 facilities to be surveyed annually	Latest EUV visited 58 facilities	During 2014 for EUV only 5 provinces were visited, 10 districts and 20 SDPs, although 13 provincial warehouses, 27 district warehouses and 64 SDPs were visited through SCM supervision, plus the NASC visits (that also collected Malaria data) 10 provinces plus Maputo city, 22 districts and 66 SDPs.	Last EUV surveyed 110 facilities	Latest EUV surveyed 200 facilities	Last EUV surveyed 35 facilities	~40 facilities per quarter
Software used	Magpi	Magpi	Magpi	Magpi	Magpi but transitioning to SurveyCTO, using tablets	Magpi	Magpi	Magpi	Magpi
Formal Agreement with MOH/NMCP regarding data ownership?	There is no formal agreement with the NMCP regarding the EUV data. Although the project hosts the activity and database, the NMCP has ownership of the data.	There is no formal agreement with the NMCP regarding use of the data. When the report is ready, it is shared with the NMCP. USAID team in Ghana and other GHG counterparts. There is no specifically defined owner of the data and how it should be used	There is no documented formal agreement with the MOH/NMCP regarding the EUV data. However, the MOH and the NMCP endorse the activity and support its function as helping to manage and reduce the malaria case burden in Liberia.	There is currently no formal agreement regarding the EUV data.	No formal agreement currently. As the data is collected through routine supervision activities, the data belongs to the NMCP.	There is no formal agreement with the FMCH/NMCP regarding the EUV data; its ownership and use is determined by USAID. Dissemination of the report is shared with the government at the national and state PSM sub-committee meetings.	All data is owned by the MOH&SW, but there is no formal agreement regarding the data with the MOH/NMCP	The project has officially written to NMCP concerning EUV and its objectives; however, currently the project owns the raw data as it is received from facilities. The project also generates the report which is shared with NMCP and other stakeholders.	Currently no formal agreement with MOH/NMCP regarding ownership and usage of the data.
PMI Involvement	PMI/USAID activity manager informed about the activity and provided with reports.	PMI advisor informed about the activity and the selected regions for each round and provided with reports. Advisors have participated in data collection.	The USAID/Mission in Liberia follow-up on issues (based on results or items noted for follow-up) with both the project and related MOH programs, especially the NMCP and SCMI.	The PMI advisor participated in field visits during 2 rounds of EUV data collection. The advisors are very interested in EUV results and contribute to follow-up discussions on issues identified.	Participate in data collection, briefings at HLI, District, Province and central level, provide support in supervision report for the provinces and central level; participate in supply chain trainings; and OIT during the supervision when find problems and/or deviations.	The PMI advisors receive and review EUV reports.	PMI advisors have once participated in data collection and orientation training. Quarterly, briefings take place during technical working group meetings, and reports are shared.	The PMI advisors receive and review EUV reports and recently attended a debriefing on the revised EUV strategy, which covered the revised sampling methods plus revised communications of findings and revised tool.	The PMI advisors have attended briefings on implementation of the activity and findings and have expressed in writing their appreciation for the activity and its actionable information.
Level of Follow-up	Findings are discussed with NMCP, Family Health Department, at the National ACT Committee Meetings (with national and international stakeholders) and at the Regional/Hospital pharmacists semi-annual workshops on malaria commodity management	Urgent distribution of stock to regions and SDPs following EUV findings - identified knowledge gaps in supply chain - influenced the selection of personnel, facilities, and regions for supply chain trainings and organized trainings. Informed the development of a Supply Chain Master Plan for the entire health sector	Urgent distributions to depots when EUV findings indicates current or imminent stockouts.	The project and stakeholders are closely monitoring stock imbalances and using the data to support the NMCP with distribution planning. NMCP is also using EUV data to continue pushing for adherence to new malaria case management guidelines.	Follow up training and supervision efforts have focused on issues such as managing and updating stock cards; improving physical examination, diagnostic and clinical data logging; correct use of mITDs; and correct first-line treatment of severe malaria.	Follow up work has focused on improving record keeping, both in stock management and malaria case management, as well as providing standard malaria diagnosis using RDTs. TO7 state logistics advisors, NMCP-SMOH and TSPH staff are involved in the data collection process. EUV findings were shared with NMCP, AMAPS, TSPH-SMOH and local government. Reports and strategies are discussed at regular malaria stakeholder meetings (National and State PSM meetings, and National Malaria and State Malaria Technical Working Group meetings).	Communication facilitated between respective district pharmacists and MSD Zones to resupply stock. Ensuring ACT commodities arriving in country are cleared on a timely basis, and are pushed down immediately upon arrival to avoid facility stock outs. MOH&SW now depends on EUV commodity stock out information to adjust for its forecasts, and EUV experience resulted in revisiting the RAR report form and adding day's stock out column. Logistics management unit (LMU) conduct redistribution of commodities among health facilities and perform on job trainings on stock management and ordering processing during supportive supervision visits.	The recent re-strategizing activity (August 2014) focused on making better use of EUV data, to inform follow-up supervision efforts and broader decision-making. This process was strengthened through a national workshop focused on enhancing quick communication of findings to key stakeholders (NMCC, Mission, PMI, provincial governments) and enhancing data quality.	With knowledge of stock outs, redistribution and immediate delivery of commodities to affected facilities takes place. Management level discussions regularly occur among key stakeholders regarding how to better supply facilities and manage malaria cases in the long term.
Cost of EUV, including PMI's percent contribution, and coverage of Magpi	\$10,000 - \$12,000 quarterly; Magpi cost is \$5,000 annually, covered by TO7.	Depending on travel, \$6,500 - \$12,000 quarterly. TO4 35%, TO7 65%, including Magpi cost.	\$17,000 per quarter; Magpi costs are covered by TO7	\$35,000 per quarter; costs of Magpi are covered by TO7	\$8,500 per quarter, with TO7 contributing 58%	\$89,000 semi-annually. TO7 100%. Cost of Magpi is shared by SCMS and the DELIVER PROJECT, while TO7 covers 25% of the total cost	\$92,000 per quarter, with TO7 contributing 10% to the total cost. Magpi costs are shared as follows: TO4 (10%), TO7 (10%) and SCMG (80%).	\$28,500 per quarter	\$27,500 per quarter; Magpi is covered by TO7
Other organizations or institutions providing funding for EUV	Government of Burkina Faso (through MOH/NMCP) provides with 50% of the vehicles and 75% of the personnel for the data collection	Costs are split between TO4 and TO7	Costs are split between the EUV and Interim Approach Data Verification budgets (Both under the USAID DELIVER PROJECT). TO4 also provides some funding because of the NCI commodities that are included.	Costs are covered entirely by TO7 (100%); NMCP provides vehicles	Costs are split between TO4 (42%) and TO7 (58%)	None	Costs are split between SCMS, TO4 and TO7	Costs are covered entirely by TO7 (100%)	None

Follow-up funding needed?	Yes, a small amount of funding is needed to cover the costs of some additional equipment (phones for data collection) and support. Specific costs have yet to be determined.	In the past when stockouts were identified through the EUV, specific funding was required to support distribution of commodities, particularly RDTs and SP from the central level to selected regions. Apart from cases like this, there has not been a regular need of additional funding.	Follow up issues have required attention; however, they have been resolved without requiring additional funds. There have been other issues outside the EUV activity (such as addressing stockouts at HF level), which have funding obligation issues.	Yes, follow up funding is needed for EUV results dissemination meetings. A discussion needs to be held as to how much funding is required.	No follow up funds are needed at this time.	Actions where follow up funding was needed was covered by TOT, an example being the clean-up of expired commodities in Kogi state, and repeat visits to ensure proper storage practices in Ebonyi state. Additional funding could also help cover a larger sample size of health facilities.	Yes, additional funding is needed to address EUV issues that may arise during data collection. Funding need is estimated at an additional \$25,000	No, additional funding for EUV activities is not needed at this time	While follow up funding is needed for activities identified by the EUV, there is currently no follow up funding needed for the EUV activity itself
Other organizations or institutions involved in EUV implementation	NMCP, Family Health Department, Pharmacy and Labs' Department	Stores, Supplies and Drugs Management (SSDM), NMCP, Pharmacy unit, Disease Control unit, Family Health Division (FHD), National Tuberculosis Control Program (NTCP), National AIDS Control Program (NACP) and the Centre for Health Information Management (CHIM). They assist in the data collection on the field, while doing supportive supervision and DIT at the visited facilities.	MohSW is involved in the entire process; NMCP and the Supply Chain Management Unit provide data collectors; County Pharmacists and district personnel ride along for many of the facility visits and sometimes assist in the data collection.	NMCP	NMCP and Central de Medicamentos e Artigos Medicos (CAMM) both provide data collectors each quarter. NMCP provides supervision of the EUV.	NMCP, State Ministry of Health of all PMU focus states, MAPS, TSMP	LMU, Pharmaceutical Service Section (PSS), National Aids Control Programme (NACP), National Malaria Control Programme (NMCP), Reproductive and Child Health Section (RCHS), Council Health Management Teams (CHMTs) e.g. s district pharmacists and district malaria focal person.	MOH (Provincial and district medical offices) provide staff to accompany field office staff and are actively involved in data collection.	Ministry of Health Child Welfare (MOHCW) NMCP and MOHCW Directorate of Pharmacy Services, as well as Provincial Pharmacy Managers and Provincial Epidemiology and Disease Control Officers participated in EUV training and tool development; as data collectors, and in discussions of findings.
Other products included in survey	Malaria and FP commodities. Please see "other commodity specifics" tab for full list.	40 products in total, including malaria, ARV, TB, FP and other commodities. Please see list on "Other Commodity Specifics" tab	28 products in total. Malaria Commodities, Essential Medicines (Please see "other commodity specifics" tab for full list)	Only malaria commodities	In addition to malaria commodities, data on 35 products in total collected. Please see list on "Other Commodity Specifics" tab	Only malaria commodities	8 malaria commodities, 8 reproductive health commodities, 10 essential medicines, 12 ARV commodities and 3 test kits. Please see full list on "Other commodity specifics" tab	Only malaria commodities	Only malaria commodities
Other information					Almost no EUV activity in the last quarter of 2014. October due to political elections; in November due to the National Supply Chain Assessment (NSCA); in December and January due to the Road, and in February due to cholera. New activities will begin in the last two weeks of March. EUV became in 2015 the only source for NMCP supervision. In another hand we (SOLIVER & SCMS) in order to reach more SDPs, decided to standardize the stocktaking tool and use it in the SCM supervision, with this we will be able to have more information on product availability. In the last Field Support field meeting (March 9-13) we decided to include the register book part in the SCM supervision. To clarify the EUV-NMCP supervision is performed always with NMCP staff and need to include one clinician to check on case management from the files. The SCM supervision do not include NMCP staff and can be performed by the regional/provincial advisers with provincial permission and does not include, necessarily, central level staff.		EUV surveys have started to be implemented in Zanibar since October 2014 whereby a total of 117 health facilities are visited on a quarterly basis. This sample is considered representative of the country since it is statistically significant with confidence interval of 95% and margin of error between 6.8% and 7.5%. Commodities assessed include 3 antimalarials, 10 essential medicines, 5 family planning and maternal health commodities, 12 ARVs and 2 RTKs. The cost to implement EUV survey in Zanibar is split between SCMS, TDA and TOT.		The EUV report is shared with the MOH through the National Malaria Control Program (NMCC) to help the program strengthen malaria case management and implement appropriate supportive interventions to ensure commodity availability. The report is also shared with PMI Zambia and all technical staff at USAID / DELIVER PROJECT and SCMS (Zambia field office). Results from the EUV are used by NMCP as reference during Malaria commodity forecasting and quantification meetings as well as other meetings. The EUV exercise is reflected in the NMCP annual work plan signifying the importance they attach to the activity. The project also takes every opportunity to get MOH/NMCP involved in the EUV exercise. NMCP/MOH were fully involved in the EUV re-strategising meeting held in August 2014 by participating in the EUV exercise that followed immediately after the meeting. MOH staff at district level are also involved in all EUV activities conducted quarterly. As we move towards building capacity in NMCP and increase ownership in supply chain activities, EUV activities are one of the priority areas.
Effect of Ebola virus on EUV activity	None	None	Specific supportive documents are difficult to find; however, services at health facilities in Liberia during the Ebola virus crisis came to a complete standstill. Across the country it was proven/understood that healthcare services came to a recorded low with a significant number of HF's closing due to the outbreak. One particular example is Margibi County, where 100% of HF's (35 total) closed during the period. This means that the entire healthcare service in this county was not functioning properly, and a large number of people seeking medical attention could not access commodities and services within that county. The other counties may not have been at 100% closure, but a good number of their health services could not function during this period.	None	None	Ebola is no longer present in the country, and no PMU-funded state ever recorded any cases of Ebola. The issue is not applicable.	None	None	None
Collecting data on LLNs & folic acid	Data is currently collected on LLNs, and folic acid can be added to the next round of reporting.	Data is already collected on folic acid and LLNs	Not currently collecting, but these can be added.	LLNs are already being included; the country will discuss the feasibility of including folic acid with the NMCP.	Data is currently collected on LLNs; however, since 35 products are already being collected, adding folic acid may prove to be a challenge.	Currently capturing data on LLNs. Folic acid is not currently included in EUV.	Not currently collecting data on LLNs or 0.4mg folic acid. Does collect information on Ferrous sulphate tablets, which contain folic acid.	LLNs would be a challenge as they are not part of the general logistics system for drugs and medical supplies. A distribution list to the district is usually generated from the central level by NMCP/PMU. The tracking system beyond the district would be a challenge. 0.4mg folic acid is not managed in-country.	Until now, LLNs were distributed on a campaign basis in Zimbabwe and were not kept at health facilities. NMCP is piloting routine distribution in four of the sixty-four districts. We recommend that data be collected on LLNs post pilot, when routine distribution has been rolled out to more districts. Folic acid 0.4mg can be tracked in future EUVs but it comes as a combination product with Ferrous Fumarate (Fe fum 60mg + Folic acid 0.4mg tablets).

For more information, please visit deliver.jsi.com.

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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