USAID | DELIVER PROJECT

Task Order 7 Annual Report

October 2014–September 2015

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PRESIDENT'S MALARIA INITIATIVE

Task Order 7 Annual Report

October 2014–September 2015

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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, 2014, to September 30, 2015. 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 photo:
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.

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Contents

Figures

Tables

Acronyms

ACT	artemisinin-based combination therapy
A/L	artemether/lumefantrine
AMP	Alliance for Malaria Prevention
ANC	antenatal care
AS/AQ	artesunate/amodiaquine
API	active pharmaceutical ingredient
CMS	central medical store
COA	certificate of analysis
CPIR	commodity procurement information request
DDIC	Direct Delivery and Information Capture
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
EPI	Expanded Program on Immunization
EUV	end-use verification
FDC	fixed-dose combination
FIND	Foundation for Innovative Diagnostics
FY	fiscal year
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GHS	Ghana Health Service
GMP	Global Malaria Program
IA	interim approach
ILS	integrated logistics system
IPTp	intermittent preventative treatment in pregnancy
JSI	John Snow, Inc.
LGA	local government area
LLIN	long-lasting insecticide-treated
LMCU	logistics management coordination unit

LMIS	logistics management information system
LMU	logistics management unit
MCDMCH	Ministry of Community Development, Mother and Child Health
MIP	malaria in pregnancy
MIS	management information system
MMK	malaria microscopy kit
MOH	Ministry of Health
MOHCC	Ministry of Health and Child Care
MOHSW	Ministry of Health and Social Welfare
MOP	Malaria Operational Plan
MOPDD	Malaria and Other Parasitic Disease Department
MOS	months of stock
MSD	medical stores department
NGO	nongovernmental organization
NMCC	National Malaria Control Center
NMCP	National Malaria Control Program
NMEP	National Malaria Elimination Program
PHCP	primary health care package
PMI	President's Malaria Initiative
PMP	Performance Monitoring Plan
PNAM	National Commidity and Essential Medicines Department
PNLS	National Program for Combating HIV/AIDS
PNSR	Reproductive Health Program
POCT	point-of-care test
POD	proof of delivery
PPMRm	Procurement Planning and Monitoring Report for Malaria
PSC	parallel supply chain
PSMWG	procurement and supply chain management working group
QA	quality assurance
R&R	report and request
RBM	Roll Back Malaria
RDMA	Regional Development Mission Asia
RDT	rapid diagnostic test
RFP	request for proposal
SCM	supply chain management
SCMS	supply chain management system
SCMU	supply chain management unit

SCTWG	supply chain technical working group
SDP	service delivery point
SIAPS	Systems for Improved Access to Pharmaceuticals and Services
SMC	Seasonal Malaria Chemoprophylaxis
SOP	standard operating proceedure
SP	sulfadoxine-pyrimethamine
STTA	short-term technical assistance
TA	technical assistance
TB	tuberculosis
TO	task order
TO7	Task Order 7
TWG	technical working group
UNICEF	United Nations Children's Fund
UPS SCS	United Parcel Service Supply Chain Solutions
USAID	U.S. Agency for International Development
USG	U.S. Government
VCWG	vector control working group
WHO	World Health Organization
ZIP	Zimbabwe Informed Push

Executive Summary

Photo: John Gikapa for USAID | DELIVER PROJECT, 2015.

DRC Country Director John Gikapa stands with NMCP Program Director Dr. Joris Likwella during a recent distribution of LLINs in DRC.

Products are needed for malaria programs to meet the goal of reducing malaria-related morbidity and mortality. These include products for the prevention, diagnosis, and treatment of malaria. Strong health programs cannot function without well-designed, well-operated, and well-maintained supply chain systems to manage and move those products. 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 the period October 1, 2014, to September 30, 2015. 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's (USG) effort to fight malaria in sub-Saharan Africa through the President's Malaria Initiative (PMI). The initiative works in 19 sub-Saharan African–focus countries and the Mekong Region. PMI is a joint initiative comprised of multiple entities but programmatically led by the U.S. Agency for International Development (USAID) and the Centers for Disease Control and Prevention. TO Malaria has a long-term presence in 13 of the PMI-focus countries (Democratic Republic of Congo [DRC], Ghana, Guinea, Liberia, Madagascar, Malawi, Mali, Mozambique, Nigeria, Rwanda, Tanzania, Zambia, and Zimbabwe); the Greater Mekong Subregion [GMS]; and the three USAID malaria non-focus countries (Burkina Faso, Burundi, and South Sudan).

TO Malaria has three main objectives, under which all its activities are organized: 1) to improve, implement, and expand USAID's provision of antimalarial commodities to country programs; 2) to strengthen in-country supply systems and their capacity for managing antimalarial commodities; and 3) to improve global supply and the availability of antimalarial commodities. The level of effort varies across the objectives: 50–60 percent for Objective 1; 30–40 percent for Objective 2; and 5–7 percent for Objective 3. To achieve these objectives, TO Malaria works in partnership with PATH; Crown Agents Consultancy, Inc.; Imperial Health Science (IHS, formerly called RTT); United Parcel Service 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 PSI.

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

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

The principal activity of (TO7) is to support the PMI by procuring malaria commodities in response to requests placed by the USAID Missions; the requests are based on the needs outlined in the yearly Malaria Operational Plans (MOPs). During fiscal year 2015 (October 1, 2014-September 30, 2015), the project processed requests for procurement assistance from 25 countries: Angola, Benin, Burkina Faso, Burma/Myanmar, Burundi, Cambodia, Democratic Republic of Congo, Ghana, Guinea, Kenya, Laos, Liberia, Madagascar, Malawi, Mali, Mozambique, Nigeria, Rwanda, Senegal, South Sudan, Tanzania, Thailand, Uganda, Zambia, and Zimbabwe. A total of 370 orders were placed with vendors for a total value of U.S. $205.1 million (commodity cost only).

Photo: USAID | DELIVER PROJECT

A worker in Tanzania accesses malaria products in the central warehouse.

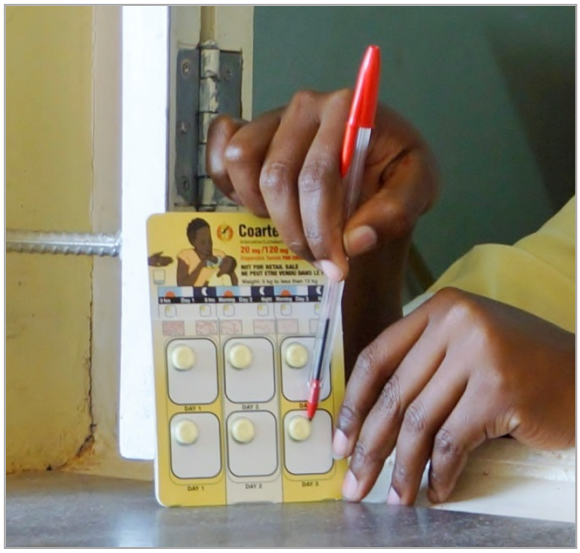


Photo: Arturo Sanabria for USAID | DELIVER PROJECT, 2015.

A pharmacist explains how to take AL 6x1 at Marrere Health Center

Efficient and Secure Delivery of Procured Commodities

From October 2014 through September 2015, the task order 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 Nigeria; ACTs and LLINs in DRC; ACTs, laboratory malaria kits and RDTs in Angola; ACTs, RDTs and severe malaria kits in South Sudan; and ACTs and LLINs in Ghana. The freight team also coordinated warehousing in Angola, Ghana, and South Sudan.

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

The project, through the quality assurance (QA) team, FHI 360, consistently works to ensure that high-quality, safe, and effective malaria products are provided. During the reporting period, FHI 360 managed pre-shipment inspection and testing for 68 LLIN orders and 52 orders of RDTs. TO7 contracted with FIND to support lot testing of RDTs through World Health Organization (WHO) laboratories. FHI 360 reviewed the manufacturer's certificates of analysis (COA) for all batches of Coartem® that were procured by the project (335 batches over 79 orders). They subjected batches to analysis using near-infrared technology to further ensure the delivery of good-quality products. FHI 360 reviewed COA for every batch of AS/AQ procured from one vendor, performed chemical assay testing, and subjected these batches to near-infrared technology analysis before releasing orders for shipment. One-hundred-thirty-two batches were tested for 29 orders. FHI 360 managed sampling, inspection, and testing for a total of 787 batches for 123 orders of generic artemether/lumefantrine (A/L), severe malaria drugs, and various essential medicines.

Management Information Systems

The management information system (MIS) team completed a series of maintenance projects to make the system more responsive, easier to use, and more robust. The complete supply chain cycle—from procurement to delivery—underwent almost weekly minor updates and enhancements to the ORION Enterprise Resource Planning (ERP) software and the USAID | DELIVER PROJECT website. In addition, the MIS team provided day-to-day operational support to the system that records and provides information for management review, including aggregate demand by country and recipient program; shipment requests by country and recipient program; financial accounts by country and funding source; production and warehouse stock levels; and current 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 reduce malaria deaths and substantially decrease malaria morbidity, toward the long-term goal of elimination.

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, Mozambique, Nigeria, Tanzania, Zambia, and Zimbabwe); and supports augmented systems in Angola, Liberia, Malawi, and South Sudan. In Madagascar, support shifted to strengthening the public sector supply chain as U.S. sanctions came to an end. The TO also supports LLIN distribution in large-scale, national-level campaigns and via routine distribution in Angola, Burundi, DRC, Ghana, Liberia, Mali, Mozambique, Nigeria, Rwanda, South Sudan, Tanzania, and Zambia.

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

Testing for malaria using RDTs at Marrere Health Clinic, Nampula, Mozambique.

The project supported distribution of key malaria commodities including ACTs and RDTs in Angola, Ghana, Liberia, Malawi, Mozambique, Nigeria, and South Sudan. Highlights include:

- **Angola:** distributed to 18 provinces directly from charter flights in January and July to limit touches and potential leakage of ACTs and RDTs.
- **Ghana:** supported the storage and routine distribution to the regional medical stores after a devastating fire destroyed the central medical stores.
- **Guinea:** the project, in collaboration with the NMCP, the central medical store Pharmacie Centrale de Guinea (PCG) and the prefectoral health directorates, distributed anti-malarial commodities to the PMI-priority zones from the PCG. The distribution took place in January 2015, during the height of the Ebola outbreak.
- **Liberia:** conducted three rounds of the interim approach providing malaria commodities to all health facilities in the USAID-supported counties (including Montserrado). Coverage increased and stockouts decreased until the most recent round, which experienced delays in the delivery schedule. Distribution continued during the Ebola outbreak.
- **Malawi:** continued to store and distribute malaria commodities to all health facilities on a monthly basis. Stockouts of all four presentations of ACTs remained below 7 percent for all months except one, when stockouts of all four presentions was at 11.8 percent.

- **Mozambique:** supported the Central de Medicatmentos e Artigos Medicos to kit and distribute ACTs and RDTs to the provincial level for all 10 provinces.
- **Nigeria:** distributed malaria products to more than 3,500 facilities in the 11 PMI-supported states every two months.

In **Burkina Faso**, the National Malaria Control Program (NMCP) began implementing Seasonal Malaria Chemoprophylaxis (SMC) in seven districts during the September to October 2014 rainy season. The project supported supervision during the distribution. The number of malaria cases registered in pilot districts for children under five during the 2014 SMC campaign was reduced.

The management of health commodities in **Madagascar** is driven by the funding sources. Apart from essential medicines that are procured, stored, managed, and distributed from the central medical stores to district and health facilities' pharmacies, program/donated commodities such as malaria commodities are managed by each vertical program. This resulted in parallel inventory control systems by commodity type with differing standard operating procedures (SOPs). Over the past fiscal year, TO Malaria organized a system design review workshop to harmonize the various stock management procedures. Thirty participants from all levels and implementing partners reviewed the logistics management information system (LMIS), the inventory control system (which includes resupply frequency, stock minimum/maximum level), and warehousing and transportation requirements.

Photo: USAID | DELIVER PROJECT, 2015.

A health care worker undertaking physical inventory in a health facility at Kinondoni District, Tanzania.

In **South Sudan**, the project assisted the MOH to get the importation verification and tax exemption certificates for anti-malaria kits. As a result, 5,571,450 doses of ACTs; 2,805,975 RDTs; 3,096,000 SP tablets and other injectable severe anti-malaria medicines were received in the country without any incident and distributed to Central Equatoria, Eastern Equatoria, Western Equatoria, Lakes, Warrap, Western Baher El-Ghazal, Northern Baher El-Ghazal, Jonglei, Unity, and Upper Nile States, despite the ongoing conflict in-country and very poor road conditions.

In **Tanzania** in 2014, the project facilitated a distribution optimization exercise for the medical stores department (MSD) to increase distribution performance, improve services, and reduce cost. The first step this was to map the different routes in the country to establish the road networks available to the transporters. A total of 21 regions of Tanzania Mainland and the Islands in Zanzibar covering the MSD and CMS distribution network were selected. Distribution optimization was completed in five of 10 MSD zones. The route optimization effort was made to strengthen MSD capacity to deliver supplies to health facilities efficiently. The effort also optimized performance and reduced transportation costs by as much as 36 percent in some instances.

The project used the Zimbabwe Informed Push (ZIP) system to support distribution of malaria medicines and RDTs to all provinces in **Zimbabwe**. The project reached a high of 99.7 and an average 94.6 percent coverage of service delivery points.

LLIN Distribution Activities

Through a combination of mass campaigns and continuous distribution, the project supported NMCPs to distribute over 25 million LLINs in 11 countries. Highlights include—

- **Burma:** in July 2015, during the height of a monsoon that resulted in numerous areas being declared as disaster areas, LLIN deliveries to 26 townships were completed.
- **Burundi**: during this fiscal year, an estimated 78 percent of pregnant women and 92 percent of 9-month-old children received LLINs through routine distribution at prenatal appointments and child vaccination sessions.
- **Ghana:** supported the NMCP to supervise the distribution of 5,250,000 LLINs through mass campains in several regions. LLIN use among children under five increased from 28 percent in 2008 to 46.6 percent in 2014.
- **Liberia:** in collaboration with the NMCP, developed a routine distribution system through ANC and EPI clinics.
- **Mali:** distributed approximately 2.8 million LLINs through mass campaigns in the Koulikoro and Sikasso regions of the country.
- **Nigeria:** working closely with Roll Back Malaria (RBM) partners, the project supported the distribution of 10.7 million LLINs through mass campaigns in six PMI-supported states. The project also supported the routinue distribution of 1.4 million LLINs in nine states.
- **Mozambique:** distributed 1.8 million LLINs for routine distribution and provided supportive supervision. Implemented a distribution tracking database.
- **Rwanda:** initiated and supported the distribution of 1.4 million PMI-donated LLINs to the Government of Rwanda. The distribution was completed in 11 working days, distributing the nets to 13 high malaria endemic districts and 157 health centers.

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

Country Highlights

In **Burkina Faso,** the project conducted a pilot of the CommCare mobile phone application to improve malaria data reporting and case management at the community-level catchment of one health facility in Kaya District from May 2014-May 2015. The evaluation of this pilot was conducted in June, 2015, and the presentation to stakeholders of the findings occurred in October 2015. When fully implemented, the platform will help improve data reporting between community health workers and health facilities, and ensure that stock of vital malaria commodities is continuously available at the community level.

Through a two-pronged approach in **Laos**, the web-based logistics management information system (LMIS) for malaria commodities is being strengthened at the operational (provincial, district, and health facility) and management levels.

Routine reporting on stock balances of malaria commodities will be facilitated through biweekly data entry via the web-based LMIS form by staff at all 17 provincial anti-malaria stations (PAMs), 140 district anti-malaria stations (DAMs), and approximately 200 of the larger health facilities (including provincial, military, and police hospitals).

At the Center for Malaria, Parasitology, and Entomology (CMPE), the web-based LMIS has been upgraded to an Open Data Kit (ODK) platform that will capture and aggregate the biweekly data, which will include the quantities of stock on hand, batch numbers, expiration dates, and calculated months of stock at the central, provincial, district, and health facility levels of the malaria commodities supply chain. This will enhance LMIS data management and analysis at the central level.

As part of the system design in **Madagascar**, the project conducted a detailed supply chain network analysis to identify opportunities and considerations for the design and implementation of an integrated logistics system. Data collected included volumes of products coming into the country and being distributed; number and location of health facilities and warehouses; GIS coordinates of the central medical stores, district warehouse, and community-level warehouse; frequency of deliveries, list of hard-to-reach facilities; and distribution network and distribution costs. The analysis allowed the project to develop a standard costing model to compare various distribution options.

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

A nurse provides a woman with an LLIN during her ANC visit at Eduardo Mondlane Health Clinic in Chimioio, Manica, Mozambique.

The facility reporting rate in **Malawi** averaged 91 percent during the reporting period, reaching a high of 95 percent in October and November, 2014, and in June 2015. This improvement in performance is a result of proactive data collection efforts by the MOH with support from the project and other partners. As a result of this improved LMIS reporting, more data for making better informed commodity procurement and re-supply decisions is available.

To improve supply chain visibility in **Mozambique**, the project is implementing an innovative central-level tool that combines the e-LMIS (known in country as,SIMAM), the Mission Accounting and Control Systems (MACS), and the procurement system data for decision-making for distribution planning and other supply chain functions. The project is also supporting SIMAM implementation at provincial and hospital levels, which collects consumption data for malaria commodities. SIMAM is presently being installed at the district level: to date, 147 districts have SIMAM installed and operational.

In **Rwanda**, the project has been assisting the Ministry of Health in analyzing LMIS data received from health facilities. The reporting rate is relatively high, ranging from a high of 91.91 percent in November 2014 to a low of 82.21 percent in February 2015. The stockout rates have been decreasing over the course of the year, and currently for most malaria commodities it is less than 5 percent at service delivery points (SDPs). The low stockout rates can be attributed to the new approach of the quantification, which takes into consideration the seasonality aspect of malaria. This has also reduced stockout rates at the central level, with only one stockout of artesunate in 2015 thus far, compared to multiple stockouts of all presentations of ACTs in 2014.

In line with USAID and PMI's focus of improving data use for health information systems strengthening, the project completed the rollout of the eLMIS in 100 percent of district councils in Mainland Tanzania and Zanzibar to improve logistics data visibility at all levels of **Tanzania's** health system. This has resulted in the

training and sensitization of more than 9,700 health care workers on the eLMIS and ILSGateway. These information systems have facilitated increased accountability through improved data visibility and ultimately product availability at SDPs.

The project supported the implementation of the end-use verficiation surveys in **Burkina Faso, Ghana, Liberia, Malawi, Mozambique, Nigeria,** and **Tanzania.** The purpose of these surveys is to assess the availability of malaria commodities at the health-facility level, identify areas of strength and weakness in the supply chain and malaria case management practices, and to provide data and insight for analysis, advocacy, and decision-making.

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

Country Highlights

The project provided support to the MOH of **Ghana** for the implementation of the five-year Supply Chain Master Plan (SCMP) developed in August 2012. The SCMP provides a set of guiding policies and interventions, along with corresponding implementation activities, to address the systemic challenges that have been identified with the current system.

In 2010 in **Liberia**, the Ministry of Health developed an SCMP to guide supply chain implementation for 10 years; the plan has been partially implemented. Further, since the interim approach was adopted as a temporary commodity distribution solution, the SCMP was revised to lay out the future of the supply chain. In September, with technical assistance from the project, MOH and partners embarked on the review of the SCMP.

The project continued to conduct spot checks in **Malawi** during and after the distributions to ensure that commodities are being distributed according to schedule and to the intended facilities. There was 100 percent compliance by Cargo Management Logistics and IHS, the project's distribution and warehousing subcontractors, respectively.

In **Mozambique,** the project is contributing to strengthening the accountability of the in-country supply chain by participating in inventory analysis activities and preparing quarterly requisitions in the Zambezia, Nampula, Niassa, Cabo Delgado, Tete, Manica, and Sofala provincial warehouses. Regional and provincial advisors also provide on-the-job training on ordering health commodities, SIMAM implementation, and data reporting. In 2015, support from these advisors enabled all the provinces to submit their requisitions on time, achieving a 100 percent timely reporting rate for the first time.

In response to a significant number of LLIN losses during delivery to **Nigeria** in 2014, the project implemented new standard operating procedures for LLIN freight. These included using project freight forwarders to pick up the LLINs from the manufacturer and deliver directly to the states, monitoring the clearance agents' performance, requiring that trucks delivering the LLINs remain in a convoy, and assigning independent security to accompany LLINs from port to final destination. These measures reduced the losses experienced from around $457,000 (8 percent of the value of the shipments) in 2014 to $1,900 (0.09 percent of the value of the shipments) in 2015.

The project continued its advocacy for and support of the supply chain strategic plans that were implemented in the last fiscal year to enhance accountability within the respective supply chains of Mainland **Tanzania** and Zanzibar. In the Pharmaceutical Sector Action Plan 2020 and the Zanzibar Supply Chain Action Plan 2014–

2017, the improvement of existing oversight and coordination mechanisms were highlighted as key strategies to strengthen governance and accountability and to foster transparency in the pharmaceutical sector's political and financial commitments.

In **Zambia**, the MOH with support from the project has been implementing the Essential Medicines Logistics Improvement Program (EMLIP), an intervention to improve availability of medical supplies at facility level. From inception to September 2015, 75 of 103 districts have been trained, representing 73 percent national coverage with at least district representation from all 10 provinces.

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

Country Highlights

Quantification Activities

The project supported malaria quantifications in 12 countries: **Cambodia, DRC, Ghana, Liberia, Malawi, Madagascar, Mozambique, Nigeria, Rwanda, Tanzania, Zambia,** and **Zimbabwe**. Quantification includes forecasting product requirements and developing a supply plan. Highlights include—

- **Cambodia:** supported a National Malaria Commodities Quantification workshop and a training of selected government staff on the PipeLine supply planning software.
- **DRC:** coordinated and led a quantification workshop for 181 PMI-supported health zones. The workshop included 20 participants from the NMCP, National Commodity and Essential Medicines Department (PNAM), Pharmacist Directorate, USAID Mission, and implementing partners.
- **Ghana:** worked with the national quantification team and the NMCP to complete the 2015 annual quantification for malaria commodities. The exercise resulted in a three-year (2015–2017) forecast of malaria commodity requirements and a two-year (2015–2016) supply plan for the delivery of commodities.
- **Mozambique:** together with NMCP and other implementing partners, the project supported the annual quantification exercise to estimate the country's malaria commodity needs, schedule optimal arrivals of deliveries, and coordinate the procurement of malaria commodities across funding sources.
- **Rwanda:** the MOH, through the National Malaria Program, the Medical Procurement and Production Division (MPPD), and other partners conducts annual quantifications for malaria medicines and RDTs to meet the need of public-sector facilities in the country. The project supported the quantification workshop organized in February and March 2015. The output of the exercise was a 36-month forecast and a costed 24-month supply plan. It was also an MOH staff capacity-building exercise on malaria quantification using the seasonality index to schedule shipments to align with high transmission season, and on use of PipeLine software.
- **Zambia:** in collaboration with MOH/MCDMCH/NMCC and stakeholders, the project provided technical and material support for the 2015–2016 Annual National Forecasting and Quantification meeting for antimalarial commodities. Prior to the meeting, a core forecasting and quantification team was constituted and the project conducted pre-quantification orientation and data review meetings with MOH/NMCC and other stakeholders to build their forecasting and quantification capacity.

Logistics Management Units and Coordination and Collaboration Groups

TO Malaria supported the development and built the capacity of logistics management units (LMUs) in **Liberia, Madagascar, Nigeria, Tanzania, Zambia,** and **Zimbabwe**. These LMUs are not just project entities; they also include government and partner counterparts. In addition, the project participated in a number of technical working groups, both at the central and state and county levels. Highlights include—

- **Liberia:** the project organized county health team supply chain technical working groups in the five USAID-supported counties—Nimba, Lofa, Bong, Margibi, and Montserrado. The county-level supply chain technical working groups (SCTWGs) have had a significant impact on the coordination of supply chain activities, manifested through improved liaisons with NGO partners to cover frequently encountered resource gaps, and enabling stakeholders to align work plans to eliminate duplication in areas of support, for example. The SCTWGs have clear terms of reference (TOR) that have enabled the committees to conduct focused and productive meetings.
- **Madagascar:** assisted the Ministry of Public Health to design an LMU. The Ministry of Public Health recognizes that it is essential to have an LMU to organize, monitor, and support all activities of the national supply chain. Through a three-day technical workshop, participants developed drafts of the LMU mandate (strategic and operational), LMU function, job descriptions of each position within the LMU, and organizational chart.
- **Nigeria:** the facilitation of PSM coordination group meetings in 11 PMI focus states has fast-tracked the establishment of logistics management coordinating units (LMCU) in all the PMI-supported states.The LMCU coordinates health supply chain activities at the state and national levels, and ensures the sustainability of the health supply chain interventions provided by donors through various implementing partners in Nigeria.
- **Tanzania:** The ultimate sustainability and transition plan for the project's supply chain management interventions is encompassed in the implementation of the LMU activities. The LMU is responsible for organizing, monitoring, and supporting all supply chain activities for all health commodities logistics systems. Its main focus is to increase the visibility of logistics data, coordinating supply chain and commodity resources, and strengthening the supply chains for all health commodities.
- **Zimbabwe:** participated in the quarterly procurement and supplies management (PSM) sub-committee meetings. The PSM sub-committee has the overall mandate to coordinate procurement and supply management activities of the various partners supporting the Ministry of Health and Child Care's malaria, TB, HIV, and other programs.

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

Country Highlights

The task order conducts a variety of capacity-building activities, including establishing and supporting LMUs and conducting pre- and in-service training activities.

In November and December 2014, the project facilitated two six-day trainings of supply chain management of health commodities in **DRC.** The 19 central-level and 17 provincial-level participants represented the NMCP; National Commodity and Essential Medicines Department (PNAM); public-private federation of drug stores and other national programs such as the Expanded Program on Immunization (EPI); Reproductive Health Program

(PNSR); National Program for Combating Tuberculosis; and the National Program for Combating HIV/AIDS (PNLS). A large percentage of the training was dedicated to LMIS and inventory management.

Following efforts started in the previous year in **Ghana**, the USAID | DELIVER PROJECT supported the MOH to formally launch the Ghana-specific guidelines for national quantification. The guidelines are a systematic, step-by-step approach to quantifying health commodity requirements and costs, with guidance on how to conduct quantification, disseminate findings, and update results with relevant data. It also provides specific guidance on how to use the results of quantification.

In **Nigeria**, the project seconded a full-time procurement and supply chain (PSM) advisor to provide technical assistance on core supply chain functions and enhance capacity improvements in the logistics competence of key officers within the PSM branch of NMEP. The PSM advisor developed an organogram and job descriptions for Global Fund PSM personnel who manage PSM activities.

In collaboration with the Ministry of Health in **Rwanda**, the project organized a workshop in Karongi from July 20th to 24th, 2015 to develop the SOPs on quantification of health commodities. The workshop was organized such that each category of commodities (malaria, MCCH, HIV/AIDS drugs, HIV/AIDS laboratory, TB drugs, non-HIV laboratory commodities, and non-program essential medicines) had a team working on the development of its SOPs. By the end of the workshop, the draft SOPs for each category of commodities were developed.

The project has provided targeted support to the National Malaria Control Center (NMCC) in **Zambia** to increase its ability to manage central-level malaria commodities and to ensure commodity security at the facility level. The objective of this effort is to build capacity of the logistics officer and the malaria case management officer to execute specific functions that promote commodity security.

Objective 3: Improve the Global Supply of Malaria Commodities

Strengthen International Collaboration

In May 2015, the Roll Back Malaria (RBM) board agreed to restructure the partnership to better align its efforts to advancing the malaria agenda. The board identified a transition oversight committee to support this process and report recommendations to the board in December 2015. As part of the process, RBM is closing its secretariat by the end of December 2015 until the new structure is determined. TO Malaria has been an active member of the procurement and supply chain management working group (PSMWG); the malaria in pregnancy working group (MIPWG), and the vector control working group (VCWG). Based on the level of partner support, the working groups will continue to operate during the restructuring period.

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

TO 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. The project also completed an analysis of SP and RDTs. The project continues to update these analyses with current market information.

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

Procurement

A principal activity of Task Order 7 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, which are based on the needs outlined in the yearly Malaria Operational Plans (MOPs). During FY15, the project processed requests for procurement assistance from 25 countries: Angola, Benin, Burkina Faso, Burundi, Cambodia, Democratic Republic of Congo, Ghana, Guinea, Kenya, Laos, Liberia, Madagascar, Malawi, Mali, Mozambique, Myanmar, Nigeria, Rwanda, Senegal, South Sudan, Tanzania, Thailand, Uganda, Zambia, and Zimbabwe.

Review and Refine Procurement Systems and Procedures

To officially place an order, the TO must receive a commodity procurement information request (CPIR) form. The CPIR contains the information needed to initiate an order, including product specifications, requested delivery dates, and consignee information. There are now seven CPIR forms in use, each designed to cover a specific commodity, e.g., artemisinin-based combination therapy (ACT); rapid diagnostic tests (RDTs), long-lasting insecticide-treated (LLIN) bed nets. The forms are "live" documents that can be modified to reflect the nature of the procurement business model with PMI.

Operational Scale

During FY15, the project received 388 procurement requests from 25 countries. A total of 370 orders were placed with vendors, for a total value of U.S. $205.1 million (commodity cost only).

Between October 1, 2014 and September 30, 2015, the USAID | DELIVER PROJECT procured—

- 67.9 million sulphadoxine-pyrimethamine (SP) tablets for intermittent preventative treatment in pregnancy (IPTp)
- 38.8 million LLINs
- 80.2 million ACTs, including 22.4 million treatments of Coartem® (artemether/lumefantrine), 20.3 million treatments of artemether lumefantrine (A/L), 25.6 million treatments of Winthrop® artesunate/amodiaquine (AS/AQ) and 11.7 million treatments of artesunate/amodiaquine (AS/AQ)
- 64.4 million RDTs
- 1.1 million rectal artesunate suppositories for malaria

- 197 microscopes for malaria.

For a complete list of commodities procured, see appendix A.

During this period, the project continued procuring commodities for Zambia with funding from the U.K. Department for International Development (DFID).The project procured 2 million RDTs for a total value of $420,000,00, and various essential medicines for a total value of U.S. $6.5 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.

Figure 1 below shows the total value of commodities procured by type from October 2014–September 2015. Figure 2 shows the comparison of commodities procured by value between FY14 and FY15. Figure 3 shows the total commodities procured from the beginning of the project to September 2015.

Figure 1. Total Value of Commodities Procured by Type, FY2015*

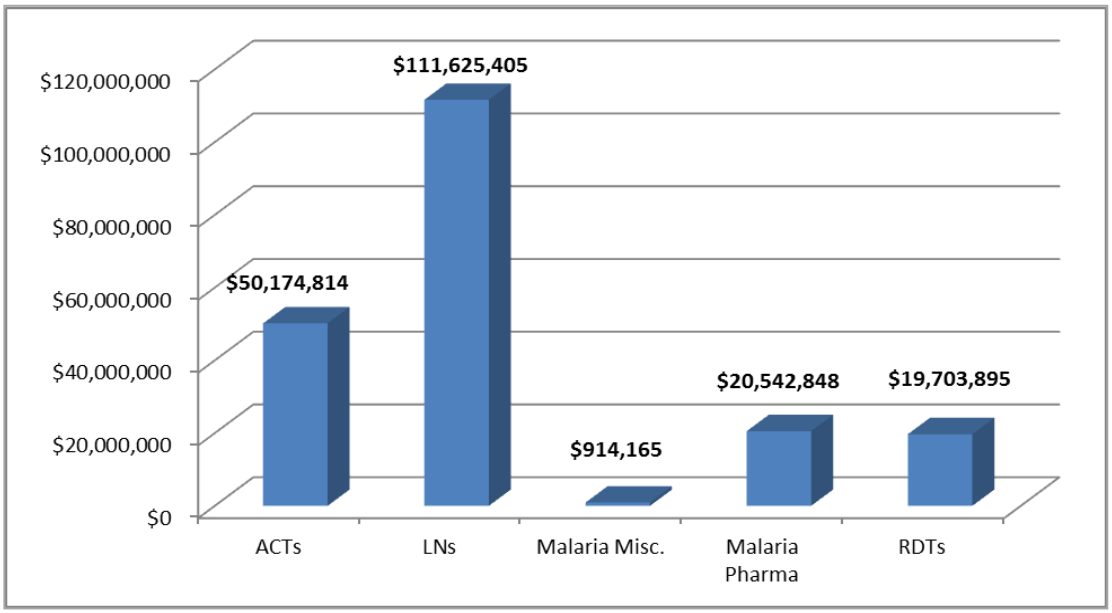


Figure 2. Comparison of Commodities Procured (by Value) between FY14 and FY2015*

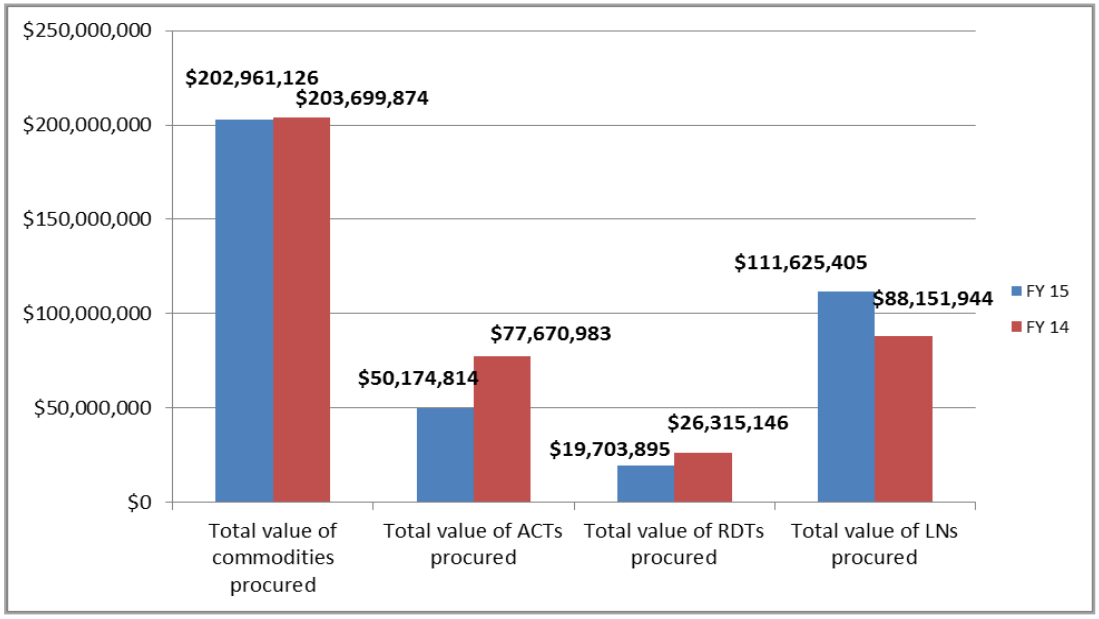
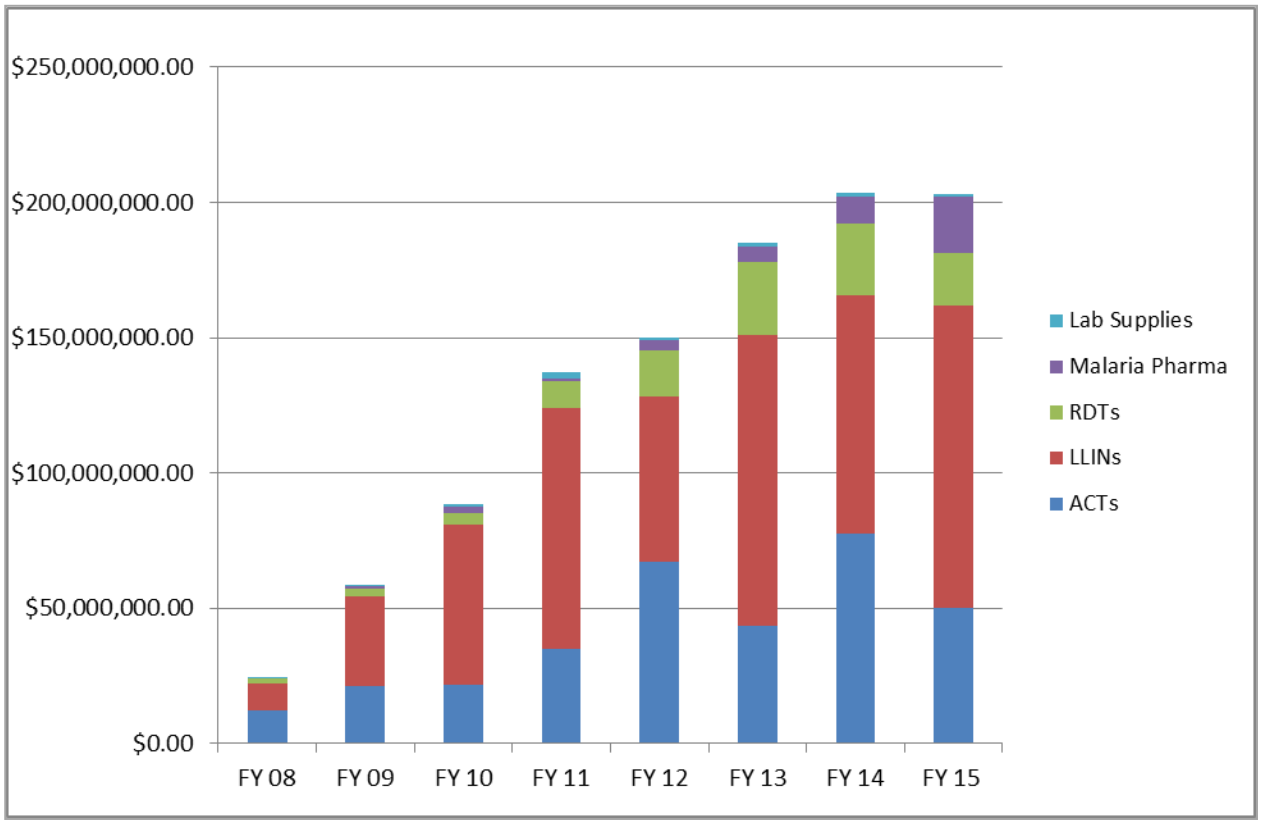


Figure 3. Total Commodities Procured, 2007–2015*



**All figures include $3,820,402 in essential medicines for Zambia through DFID under Malaria Pharma*

Sources and Suppliers of Commodities

The selection of a vendor/manufacturer is based on one or more of the following criteria, in response to the request for quote (RFQ):

- overall responsiveness
- conformance to product specifications
- conformance to quality certifications and standards (International Standards Organization [ISO], World Health Organization [WHO] Performance Qualification, and Stringent Regulatory Authority [SRA]-approved)
- conformance with packing and marking requirements according to country-specific artwork
- product price
- timeliness of deliveries
- quality of product
- product registration in-country (if applicable).

Only vendors and manufacturers that meet a set of previously determined criteria (e.g., adherence to current good manufacturing practices, availability of product stability data, and previous supply record) and/or are included on the PMI preselected list—after an expression of interest for LLINs, and request for proposal (RFP)

for RDTS—are invited to bid or quote. The current list of selected manufacturers for RDTs and LLINs can be found in appendices E and F.

New RFP Artemether/Lumefantrine

Due to the expiration of one pharmaceutical manufacturer's U.S. patent on Coartem on July 26, 2015, approval of other manufacturers' fixed-dose combination oral A/L formulations, an increased demand for A/L, and to provide the best value to the U.S. Government, TO Malaria issued an RFP to the seven manufacturers of A/L that were WHO pre-qualified and/or approved through an SRA. Based on technical review, six vendors were selected for the procurement of A/L. TO Malaria signed indefinite delivery indefinite quantity (IDIQ) contracts with the selected manufacturers and competes all procurement of A/L among these manufacturers. The selection criteria include price, current production lead time, and registration status.

Lab Expression of Interest

As part of a periodic review of the market, TO Malaria issued an RFP on October 22, 2014 to identify potential lab testing service providers for pre-selection. All laboratories that were either WHO pre-qualified or ISO 17025–certified were invited to bid, and 12 responded. The technical documentation review was conducted by FHI 360, which recommended that five QA laboratories be short-listed based on the results of the first round of the evaluation. Next, the project conducted a business evaluation and based on the findings, recommended continued use of two laboratories. Both of these laboratories are highly experienced with testing the requested products, have been pre-qualified by WHO, and are ISO 17025-accredited. ISO 17025 is the main ISO standard containing the general requirements for the testing and calibration of laboratoroies. Both laboratories are technically competent and have provided all required documentation and information requested under the RFP.

India Supplier Visit

To continue the provision of procuring cost-effective, high quality anti-malaria pharmaceuticals, two members of the procurement team and one member of FHI 360 went to India in March 2015 to visit various current and potential ACT/pharmaceutical suppliers, production factories, and several quality assurance laboratory facilities.

The results of this trip included the realization that more companies are following WHO PQ for malaria products, family planning and essential medicines; and insight into in-country product registrations and new products in development that enter the market in the next couple of years. Another topic of interest arising from this trip was active pharmaceutical ingredient (API) sourcing. It is important to know if manufacturers produce their own API or source it from a supplier, so that, for example, in the event of supply problems, supply chain staff will better understand potential product quality limits. As this is a new area of focus for the procurement team, the project is still in the information-gathering stages and will work with necessary partners to make it a priority in the coming year.

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

Boxes of Coartem in the storeroom at Marrere Health Center

Procurement Scorecard and Performance Monitoring Plan Indicators

During the reporting period, the project monthly using the scorecard to show results, which compares the number of orders processed by the project is with the number of orders received on time.

The targets this year are reflected as follows: 85 percent or higher (green); 84 to 65 percent (yellow); and 64 to 50 percent or lower (red). The received in-country by desired receipt date was, at 76 percent, within target performance. The project will continue to review its internal procedures that are used with missions and field offices to set realistic dates for deliveries based on standard lead times.

The project will compile and report monthly scorecard results and provide summaries in the semi-annual and annual reports.

Table 1. PMP for the Procurement Process, October 1, 2014–September 30, 2015

Operational area	Indicator	Status
Monthly system scorecard implemented	Monthly scorecard available	Available monthly
Orders shipped and received on time (data from October 2014 to September 2015)	% of orders received by countries within a month of agreed date with the Mission	76%
Suppliers deliver ordered commodities to satisfy contractual requirements	Supplier fill rate (contracted quantity on time)	75%
Respond to emergency orders	Number of emergency orders responded to during the previous twelve months	13 orders

Efficient and Secure Delivery of Procured Commodities

Freight Forwarding

From October 2014 through September 2015, the TO 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.

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 COR team members.

Per the freight strategy for TO7, shipments are competed 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); for shipments from a vendor to a UPS warehouse (these shipments will be handled exclusively by UPS); for shipments when USAID/Washington concurs with the project's recommendation and justification for exclusive use of a freight forwarder to a specific country; and for emergency shipments.

Customs clearance and pre-clearance delays continue to challenge the project so the freight team worked with all involved parties and implemented solutions that should ensure more on-time deliveries for this year. For

example, the freight team is working much more closely with the field office in DRC to ensure that they move the pre-clearance process forward (which has, historically, been protracted and complicated for reasons beyond project control); and it is also working with the USAID Mission and UPS agent in-country.

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 $900,902.71 during FY2015.

Table 2. Savings from Bidding Out Shipments to Vendors, October 2014–September 2015

Time period	Total savings	Percentage savings overall
October–December 2014	$519,373.63	25
January–March 2015	$171,417.93	26
April–June 2015	$187,870.41	38
July–September 2015	$22,240.74	17

Quality Assurance

Rapid Diagnostic Tests

During the reporting period, FHI 360 managed pre-shipment inspection and testing for 52 orders, representing over 66 million RDTs from four manufacturers. The QA team reviewed all test results before clearing an order for shipment. TO7 contracted with the FIND to support all lot testing of RDTs through the WHO laboratories. Lot testing for PMI included initial testing of 255 batches and 18-month stability of 290 batches (retain batches from every consignment of PMI-financed RDTs), 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 3-32 days after sampling (average 13 days). The laboratories typically finish testing within five working days of sample receipt. The longest delays were caused by sample shipment and customs delays.

One lot of first response combo failed the testing for detection of *P. vivax* and was rejected. The rejected quantity was replaced by the manufacturer with a new batch that did pass the pre-shipment testing.

After review of the WHO/FIND Round 5 test results by the project's QA team, panel detection scores for *Plasmodium falciparum* at low parasite densities were, at 85 percent, well above the threshold, which is consistent with past results. Results for *P. vivax*, however, did not meet the WHO procurement criteria, based on a detection score of 74.3 percent , which falls below the WHO criteria panel detection score limit of 75 percent at 200 parasite/μl.

The project's QA policy requires the temporary suspension of any RDT that is non-compliant with WHO RDT procurement from the project's pre-qualified RDT list. After further discussions with WHO and PMI, however, it was confirmed the WHO Round 5 failure was minimal and would not have any public health affect on the

population in the country of destination where the presence of P.v has a lower density. Therefore, PMI gave the project pre-approval to proceed with giving countries with first response combo RDT orders on hold the option to either move forward with the orders with NMCP's approval or cancel the orders. The project was also instructed by PMI to not proceed with any new procurement for first response combo pLDH/HRP2 RDTs until further notice.

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

Testing for malaria using RDTs at Marrere Health Center in Nampula, Mozambique.

FIND reported the occurrence of buffer loss in individual buffer ampoules in samples that have been stored for stability testing for 19 batches from fiveorders. This issue has been observed for all manufacturers. Three of the manufacturers submitted corrective actions and subsequent validation studies to the WHO pre-qualification team, which identified issues amongst all three suppliers that will require additional time and studies to resolve. There are still fundamental issues with the design and therefore use of single-use buffer vials must be resolved, and new vial material alone did not correct the issue. In the meantime, WHO recommends not procuring point of care tests (POCT). For orders placed early during this fiscal year, TO7 has agreed with the manufacturers to supply an extra ampoule of buffer to reduce the risk that no buffer will be available to the health care workers who use the tests. Meanwhile, no POCT orders will be placed while WHO's re-evaluation of improved buffer vials is in progress.

A report in Nigeria about a high number of one type of RDTs already in the field and approaching their expiration date gave invalid results. Samples were taken from various locations and sent to the WHO/FIND laboratory in Cambodia, which confirmed a high number (about 50 percent) of tests producing invalid results. All concerned batches were 23 months old and had only four months of shelf life remaining. It was suspected that environmental/storage conditions were responsible. Additional samples collected from the field were sent to FHI 360for an evaluation of the packaging. Visual examination of the desiccant present in each package showed that the inside of about 25 percent of the packages tested had been exposed to moisture. This could indicate a package seal defect that allowed the moisture to get into the package, possibly in combination with high humidity levels in the environment. About 75 percent of the packages showed signed of leakage when submitted to a package seal test, supporting the notion that these package do not sufficiently protect the RDT against exposure to humidity, which in turn can affect RDT performance. Additional rounds of testing product with remaining shelf life from 5 to 19 months showed the same issues, although with a much lower frequency. A complaint form was submitted to WHO, which is currently investigating the root cause with the manufacturer. Additional rounds of testing are planned every six months to ascertain if product remaining in the field is still effective.

Long-Lasting Insecticide-Treated Bed Nets

From October 2014 to September 2015, the QA team managed pre-shipment inspection and testing for 68 orders representing over 41 million nets from five manufacturers. The QA team reviewed the inspection reports and orders from three of the manufacturers that were released for shipment concurrent with laboratory testing,

the norm according to approved standard operating procedures within PMI's QA/QC strategy. All test results for these manufacturers were compliant with USAID and WHO specifications.

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

Explaining how to hang and utilize LLINs to health facility staff at Marrere Health Center in Nampula, Mozambique.

Because nets from one manufacturer showed highly variable insecticide levels in previous testing, a change in protocol was implemented and nets from that specifc manufactuer were tested pre-shipment. In December that manufacturer introduced a new method of applying the insecticide. Subsequent test showed more consistent insecticide levels and all test results for that manufacturer were compliant with USAID and WHO specifications. Since mid-May, orders from that manufacturer have shipped concurrently with testing again.

Test results for two orders from a different manufacturer showed insecticide levels well below the lower WHO specification limit. The explanation from this manufacturer was that nets produced shortly after starting the machine showed the characteristics that were observed in the lab. The samples for the two aforementioned orders were mistakenly taken from the quarantined area. The manufacturer produced new nets for both orders, samples of which gave compliant test results. No sub-quality nets were shipped, as testing occurred pre-shipment (again, reflecting a temporary change in SOPs).

No product complaints were reported for orders that were completed in the reporting period. Complete test results were available within 10–40 days after sampling (average 24 days). FHI 360 created certificates of conformance for each consignment after final review of all results, that were sent to and retained by PMI's in-house clinical pharmacist.

Pharmaceuticals

Pharmaceuticals regulated by a Stringent Regulatory Authority

Pharmaceuticals that are regulated by an SRA did not require laboratory testing, according to approved standard operating procedures developed by FHI 360 and PMI's in-house clinical pharmacist. FHI 360 reviewed the manufacturer's Certificates of Analysis (COA) before shipment. SRA-approved pharmaceuticals that were procured during this fiscal year include Coartem from one manufacturer, paracetamol injections from one manufactuerer, malarone from one manufacturer, and DHA-PQP (Eurartesim) from one manufacturer.

During this reporting period, FHI 360 reviewed COAs of 335 batches of Coartem for more than 79 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 need additional quality testing, use of these data points from the NIR (Near Infrared spectroscopy) technology on retain samples from every batch provide another layer of confidence in the product.

FHI 360 also reviewed the COAs of seven batches of paracetamol injections manufactured by one manufacturer, two batches of malarone from another manufacturer, and four batches of Eurartesim (DHA+PQP) by a thid. The malarone and Eurartesim tablets were scanned with NIR to start building a reference database for possible future use. Because the project had not developed a reliable method to scan injections, the paracetamol injections were not scanned.

Pharmaceuticals Tested Concurrently

Because of its approval through the WHO PQ program and our historical procurement record, artesunate/amodiaquine (AS/AQ) from one manufacturer was tested concurrently with shipping, although the QA team did review manufacturer-issued COAs of every batch before releasing the order for shipment. The supplier sent samples of every batch to the QA team, which performed concurrent testing using the manufacturer's test method. One-hundred-thirty-two unique batches were tested across 29 orders. Test results were available between 4 and 33 days from sample receipt (average 15 days). All results were compliant with the specifications, confirming products were of good quality.

Pharmaceuticals Tested Non-Concurrently Before Shipment

Other pharmaceuticals procured by the project included acetylsalicylic acid, adrenaline injections, amodiaquine tablets, amoxicillin for injection and suspension, artemether injection, artemether+lumefantrine tablets, artesunate injections, artesunate suppositories, artesunate+amodiaquine tablets, benzylpenicillin tablets, chloramphenicol injections and suspensions, chlorphenamine tablets, ciprofloxacin capsules, cloxacillin injections and suspensions, dextrose for intravenous use, doxycycline capsules, ertythromycin tablets, ferrous sulfate tablets, nalidixic acid suspensions, phenoxymethylpenicillin tablets, quinine injections, quinine sulfate tablets, and sulfadoxine/pyrimethamine tablets.

These products are not SRA-approved or WHO-prequalified. They pose a higher quality risk and were therefore tested pre-shipment by independent qualified laboratories in accordance with approved standard operating procedures developed by FHI 360 and USAID. Some wholesalers arranged for testing (at approved laboratory facilities) and shared their reports. For all orders from other wholesalers where testing was not conducted in-house, FHI 360 arranged for sampling, inspection, and testing at KABS Laboratories or Northwest University. The QA team reviewed all results before releasing the orders for shipment, consistent with approved SOPs regarding pharmaceuticals without either SRA approval or WHO prequalifation. A total of 774 batches were tested.

Four batches of AS/AQ from one manufacturer were rejected because they were not compliant with the test for related substances. These batches were replaced by that manufacturer with fresh product that passed all tests before it was shipped. One batch of artesunate injection failed the mass uniformity and was replaced by another manufacturer. Yet another batch failed the sterility test and will be replaced. One batch of artesunate+lumefantrine tablets from a different manufacturer failed the test for dissolution and will be replaced by that manufacturer.

Four of nine batches of artemether+lumefantrine tablets from a manufactuer failed dissolution testing. In the investigation it was found that the stability of the product was less than expected. The dissolution results dropped significantly after only a few months. It was determined by the manufacturer that the root cause for this was too much variation in the particle size of the active ingredient during the production process. The manufacturer produced a validation batch using material with less variation in particle size. Stability data using accelerated aging conditions from the manufacturer and FHI 360 showed vastly improved results, now compliant with pharmacopiel specifications, demonstrating a good-quality product. In the meantime, product from another approved manufacturer was used to meet demand for that order. One batch of doxycycline was rejected because it failed the test for assay. Communications with the supplier for replacement are ongoing.

Test results were available between 16 and 158 days (average 49 days) after sampling. Main reasons for delays were occasional issues clearing samples through customs, out-of-specifications investigations, and in one case of testing of artemether/lumefantrine tablets, the laboratory did not have the capacity to test the required number of batches. Once this was realized, samples were rerouted to another laboratory where testing was finished.

Table 3. PMP Indicators for the QA Process, October 1, 2014–September 30, 2015

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	24 days Range: 10–40 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	13 days Range: 3–32 days
		% of AS/AQ shipments with pre-shipment certificates of conformance	100%
		Median time and range (in days from sample receipt) required for pre-shipment AS/AQ test reports	15 days Range: 4–33 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	49 days Range: 16–158 days

Other Quality Assurance Activities

FHI 360 coordinated a test method transfer from One manufacturer laboratory to KABS Laboratory so that KABS can perform testing of AS/AQ manufactured by that vendor. Because there is no publicly available test method for this product, the manufacturer's internal test method must be used. During a method transfer, the laboratory and the manufacturer analyze samples of the same batches. The results are statistically compared to verify that the laboratory can produce reliable results and that there are no underlying problems when applying this test method.

Management Information Systems

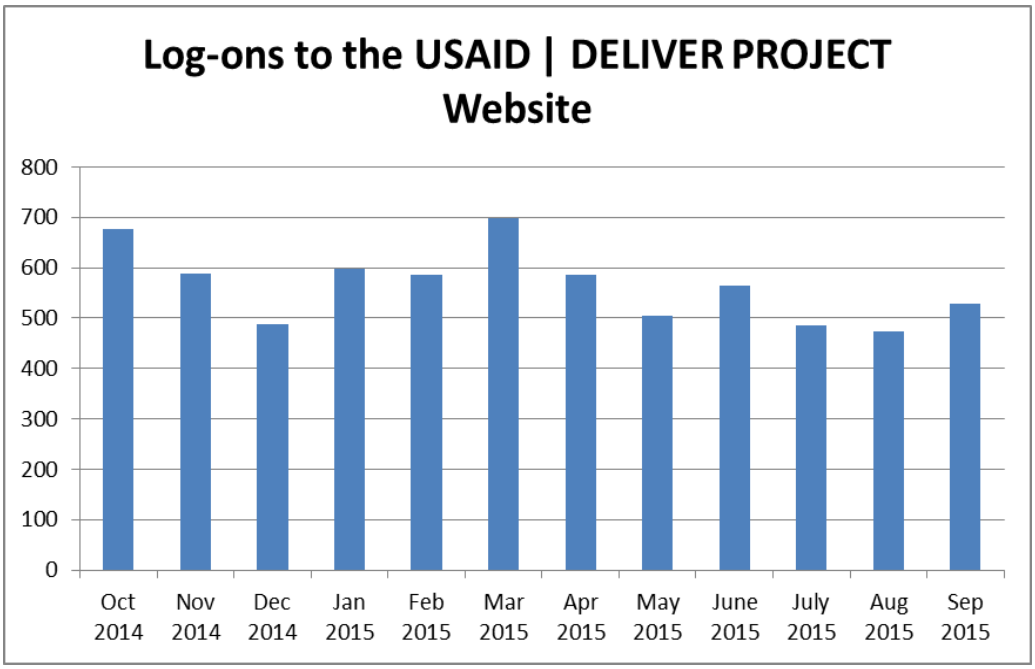
The management information system (MIS) team completed a series of maintenance projects in FY15 to make the system more responsive, easier to use, and more robust. The complete supply chain cycle—from procurement to delivery—underwent almost weekly minor updates and enhancements to the ORION ERP software and the USAID | DELIVER PROJECT website. In addition, executing its primary mission, the MIS team provided day-to-day operational support to the system that records and provides information for management review, including aggregate demand by country and recipient program, shipment requests by country and recipient program, financial accounts by country and funding source, production and warehouse stock levels, and current status of shipments.

The MIS was continuously available to authorize users from the project, the USG, and partners both centrally and in the field via a secure web-based user interface, My Commodities on the USAID | DELIVER PROJECT website. The MIS is managed according to the highest project management standards as defined by the Project Management Institute and uses a standard system development lifecycle approach. Periodic updates of the MIS were provided to ensure customer satisfaction, based on requests from internal and USG sources.

Performance and Key Statistics

This section includes key statistics on the performance of the MIS. Figure 4 shows the log-ons to the USAID | DELIVER PROJECT website, by month. In FY15, the USAID | DELIVER PROJECT website had an average of 565 unique log-on sessions per month (defined as a successful logon by a registered user). In FY14, the average was 576.

Figure 4. Log-ons to the USAID | DELIVER PROJECT Website



The My Commodities visits in figure 5 shows the number of times per month that authorized users accessed the USAID | DELIVER PROJECT website's My Commodities page to obtain project, shipment, or financial information. The average monthly visits were 7,394 in FY15, compared to 7,541 in FY14. To provide the most current status, the shipment data displayed on the My Commodities portion of the website is updated three times during each business day.

Figure 5. My Commodities Visits

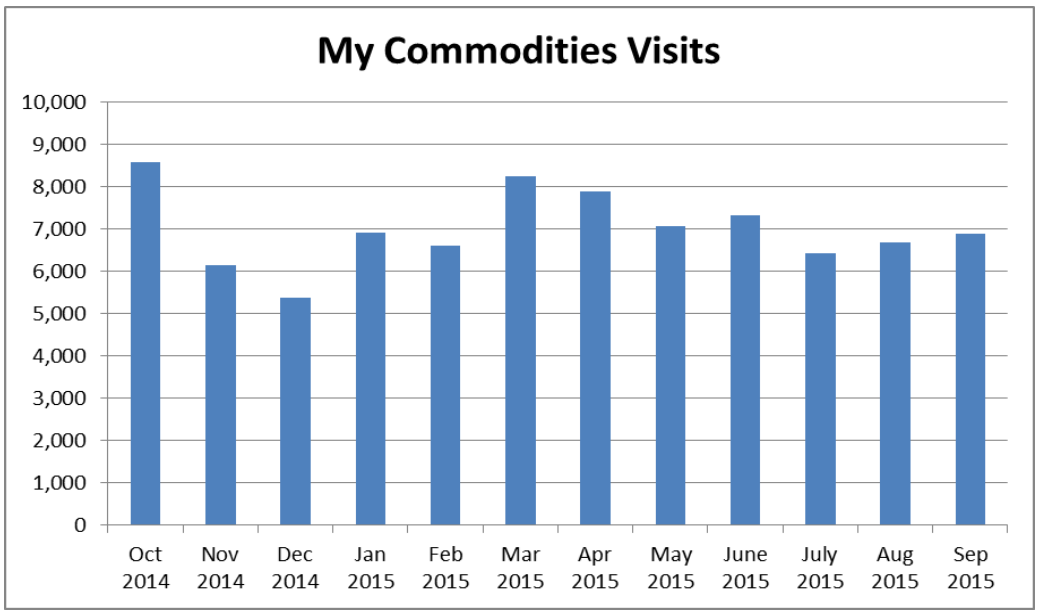
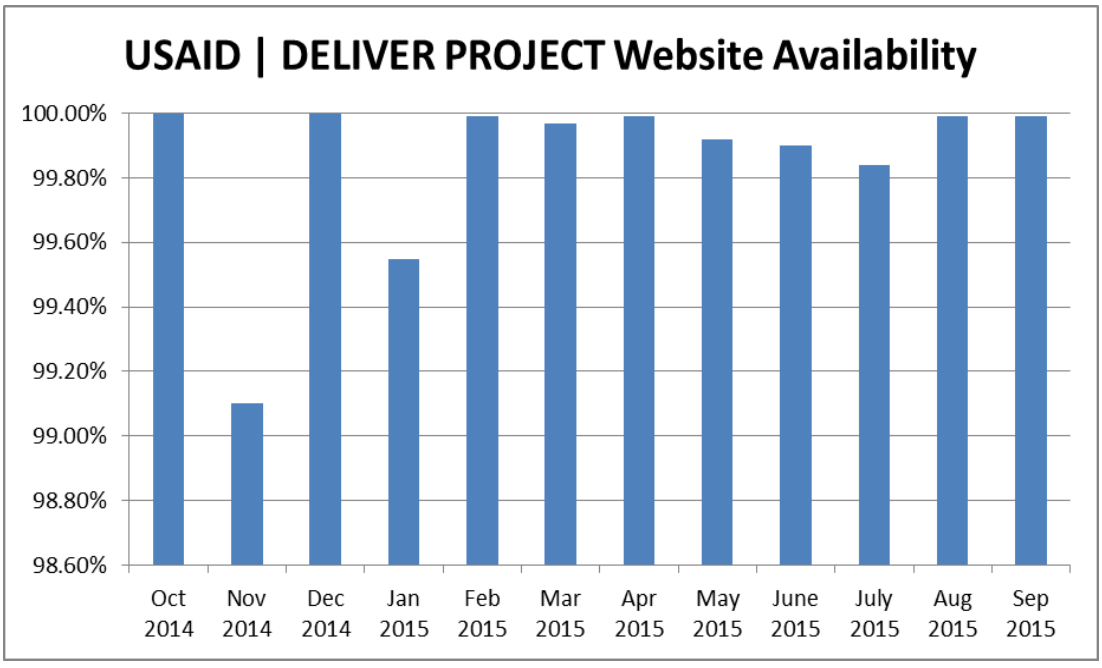


Figure 6 shows the availability of the USAID | DELIVER PROJECT website to users. This graph is a measurement of the amount of time per month that the USAID | DELIVER PROJECT website is available for access, excluding scheduled maintenance on weekends. With the exception of November, the standard of 99.50 percent availability was exceeded each month during the reporting period, with the 12-month average at 99.85 percent availability.

Figure 6. USAID | DELIVER PROJECT Website Availability



Maintenance Work Completed

The MIS team modified the ORION ERP system and the USAID | DELIVER PROJECT website to improve data availability and operational productivity. This ongoing effort is characterized by daily support of operations

including ad hoc queries, user assistance, anomaly research and resolution, and pre-project definition and estimation. The following highlight the past year's enhancements:

- **Data provision to USAID's business intelligence and analytics contractor.** We agreed on data and data formats, developed and implemented data exchange mechanisms, and supplied analyses of data sensitivity for USAID's new business intelligence and analytics contractor.
- **Updated EDI processing**. We resolved data exchange issues with one freight forwarder to ensure that up-to-date information is received and entered into the MIS.
- **Updated MIS documentation**. We completed all requested documentation for the MIS and posted it on the web in Github to make it easily accessible to USAID.
- **Enhanced tickler reports**. These reports identify open and pending transactions so the business teams can ensure that all transactions are closed and all essential data elements completed.
- **New balance sheets for TO5 and TO7**. These balance sheets help us ensure that the transactions in the system are complete and that our clients' assets are accounted for.
- **Improved gain or loss functionality.** We implemented rules to limit or completely eliminate any possible financial gain or loss that might result from shipments from a warehouse where there are batches that were purchased at different prices.
- **New incident management system.** Building on work done by the Supply Chain Management Systems (SCMS) project, we implemented an incident management system to create a central repository for procurement, distribution, and quality assurance incidents and their resolution.
- **Maintained list of transition tasks.** These tasks will be performed when the new Global Health Supply Chain (GHSC) project is awarded.
- **Improved USAID | DELIVER PROJECT website and ORION ERP.** Numerous enhancements were made to reports, screens, and functions to improve usability, speed transaction processing, and address operating issues. Several software upgrades were implemented to tighten security and reduce vulnerability to unauthorized access.

Table 4. PMP Indicators for the MIS, October 1, 2014–September 30, 2015

Support area	Operational area	Indicator	Status (%)
MIS	Availability of USAID | DELIVER PROJECT website	% of time the USAID | DELIVER PROJECT website is available	99.85
	Total number of visits	Total number of visits to the USAID | DELIVER PROJECT website	147,476
	Number of log-ons	Total number of log-ons to the USAID | DELIVER PROJECT website	7,345

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 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 CMSs; 5) and building capacity to sustain performance. Other ongoing core-funded activities include country stories, supply chain costing, and the Procurement Planning and Monitoring Report for Malaria (PPMRm).

Improve System Performance Ensuring that Malaria Products are Available When and Where they are Needed

Core-Funded Activities

Supply Chain Costing: Evaluation of the Zimbabwe Assisted Pull System

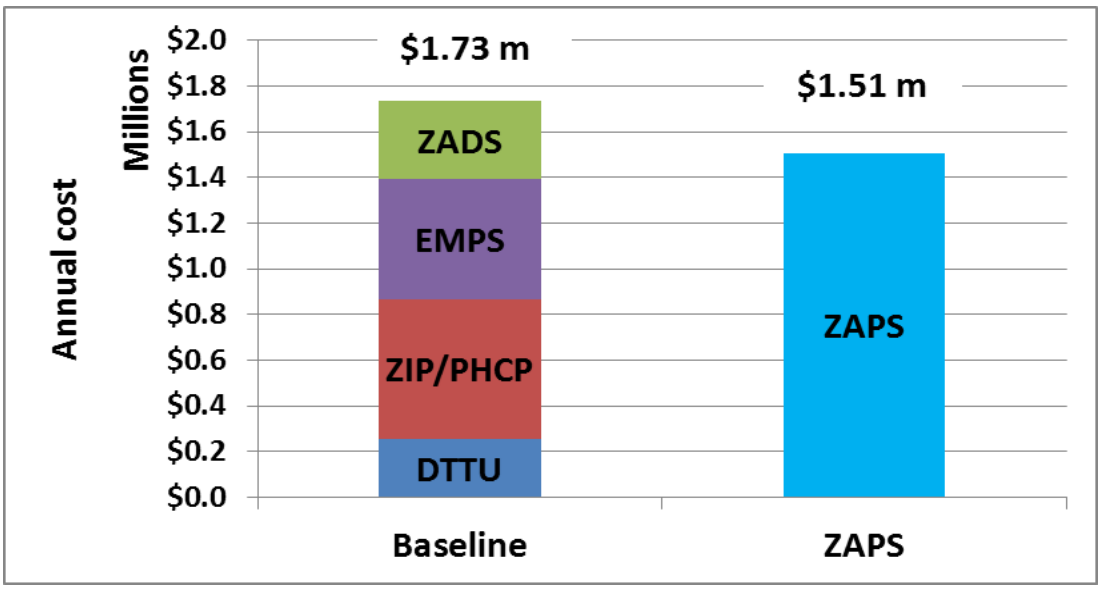
TO Malaria supported the evaluation of the Zimbabwe Assisted Pull System (ZAPS). The ZAPS consolidates management of four existing health commodity distribution systems for the primary health care facility level: Delivery Team Topping Up (DTTU); Zimbabwe Informed Push/Primary Health Care Package (ZIP/PHCP); Zimbabwe ARV Distribution System (ZADS); and Essential Medicines Pull System (EMPS).The evaluation compared the performance and costs of the ZAPS with these existing distribution systems. The ZAPS pilot maintained supply chain performance at a lower overall cost and more efficiently than the four supply chain systems (see figure 7). The project measured efficiency in terms of supply chain cost per value of product. ZAPs cost less and distributes a higher value product. Along with other factors such as per-province start-up costs, the comparative sustainability of the ZAPS model and how it is financed relative to the existing

Photo: Scott Dubin for USAID | DELIVER PROJECT, 2014.

In Zimbabwe, reviewing under flashlight newly arrived malaria products.

supply chain model, decisionmakers can use the results of the evaluation to determine how to move forward with implementing ZAPS elsewhere in Zimbabwe. ZAPS is a model of distribution that should be considered for future supply chain design activities. Figure 7 demonstrates a cost comparison of current supply chains to the ZAPS system.

Figure 7. Cost Comparison of Current Supply Chains to the Zimbabwe Assisted Pull System



Country Highlights

Angola

The project continues to adhere to the PMI mandate to ensure that the RDTs, ACTs, LLINs, and MMKs it procures bypass MOH warehousing and distribution components at the central level. The project has been tasked with delivering all these commodities directly to the provincial level. To meet this responsibility, the project provides technical assistance (TA) and support for receipt, storage, and distribution of these commodities. In January and August 2015, dedicated charters of these malaria commodities arrived in Angola from Belgium, where they had been consolidated. The commodities were delivered to all 18 Angolan provinces directly from the charter to avoid risk of theft from a warehouse. All deliveries to the provincial warehouses were confirmed within a week of the charter's arrival.

Burkina Faso

Burkina Faso's National Malaria Program (NMCP) began implementing Seasonal Malaria Chemoprophylaxis (SMC) in seven

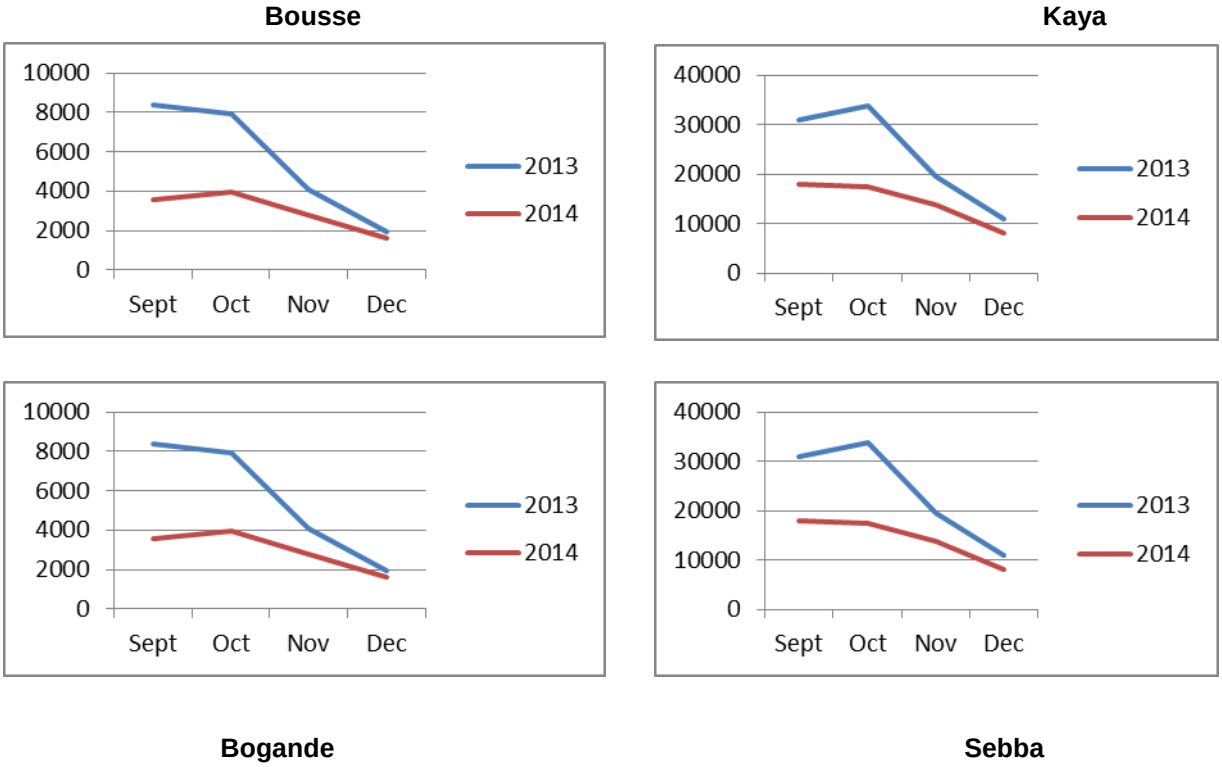
Photo: USAID | DELIVER PROJECT, 2015.

The Minister of Health in Burkina Faso administrating SP/AQ to an young child during the launching ceremony in Fada Ngourma, Sept 4th, 2015.

districts during the September to October 2014 rainy season. In October, the project provided support in the form of supervision to Sebba District in the Sahel Region. The supervision team worked with the community distribution team, providing commodities to children in households and conducting a household survey to assess the population's opinion of SMC. Nearly all health facilities visited have recognized the positive impact of the SMC campaign (see figure 8 below). As shown in the graphs below, the number of malaria cases registered for children under five reduced during the period of the SMC campaign in 2014 in the SMC pilot districts.

Figure 8 shows a more detailed example of the differences experienced: Bousse District registered 10,149 malaria cases in 2014 versus 23,625 cases in 2013; 108 cases were hospitalized in 2014 versus 435 cases in 2013. In 2015, the SMC has been extended to 17 districts with financial support from the government budget, Malaria Consortium, and UNICEF. The project participated in the MOH's launch on September 4th, 2015.

Figure 8. Number of Malaria Cases for Children under Five, September–December 2013 and 2014 in SMC Districts: Burkina Faso



Democratic Republic of Congo

The project helped the NMCP conduct a micro planning workshop for malaria activities in May, 2015. Prior to the workshop, project staff prepared the content with the NMCP, including reviewing the commodities needs forecasting tools. During the workshop, the project staff supported the health zones working group in its needs forecasting and supply chain activities planning. The project also contributed to the discussion on harmonization of microplans in Kinshasa and Katanga Regions. Over the course of the three days, health zone staff generated an estimate of the needed quantities of LLINs, ACTs, RDTs, SP, RA, and injectable artesunate for upcoming quarters and next year, which will enable a smoother distribution of products to health facilities.

Ghana

Following the fire at the CMS in January 2015, the project has partnered with the private sector to warehouse and distribute commodities from the central level to the RMS and the teaching hospitals. Currently, IHS, a private-sector warehouse service provider, is warehousing commodities procured by USAID and Global Fund,

as well as conducting direct deliveries to the RMSs and THs.

The involvement of private sector and direct scheduled deliveries of malaria and other donor-supported commodities to the regions is expected to remove inefficiencies and improve product availability for clients. The MOH and partners have subsequently completed modalities to coordinate distribution from warehouses operated by government and donors to ensure efficiency and best use of resources.

Guinea

The project procured ACTs, RDTs, laboratory commodities, and LLINs for distribution to PMI priority zones (19 districts in three regions), as well as injectable artesunate for the entire country. In January 2015, the project, in collaboration with the NMCP, Peace Corps Guinea, and the provincial health department, distributed anti-malarial commodities to the PMI-priority zones. The project led the process to select and contract with a private transportation company, Translogistique, to distribute PMI-procured anti-malarial commodities (ACTs, RDTs, and artesunate injectable. Distribution also included SP, which was procured by the Global Fund, but did not include LLINs (distributed by StopPalu). At the request from the USAID Guinea mission and the NMCP, lab equipment was distributed to health facilities across the country.

Photo: John Gikapa for USAID | DELIVER PROJECT, 2015.

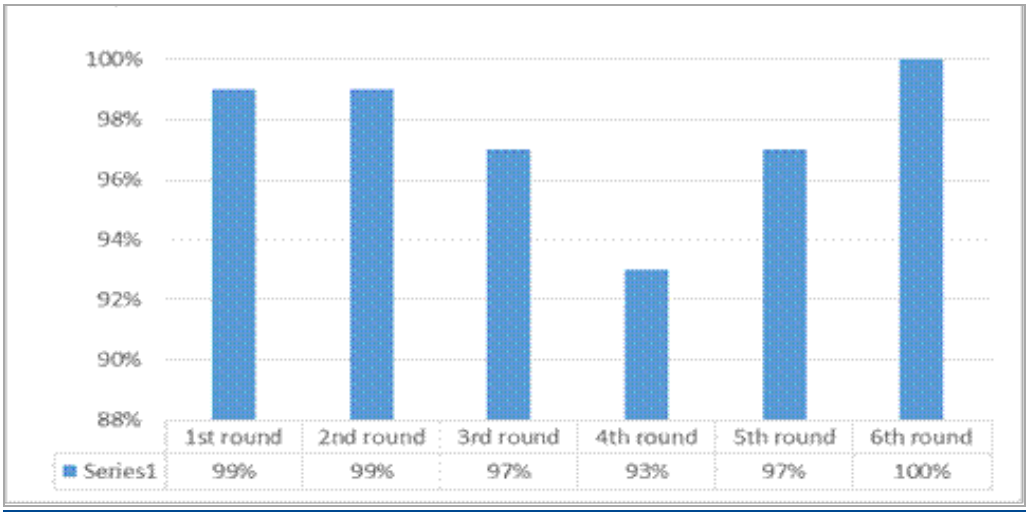
An NMCP staff member facilitating the micro-planning activity in Lubumbashi.

Liberia

The interim approach (recommendations developed by the Supply Chain Task Force in 2013) was designed to improve commodity security, strengthen accountability of public health commodities, and facilitate data visibility. The IA includes a modified top-up distribution system. The short-term actions described in the IA concept paper were provisional measures to alleviate systemic challenges in the public health supply chain. The lifespan of the IA was extended by the outbreak of Ebola.

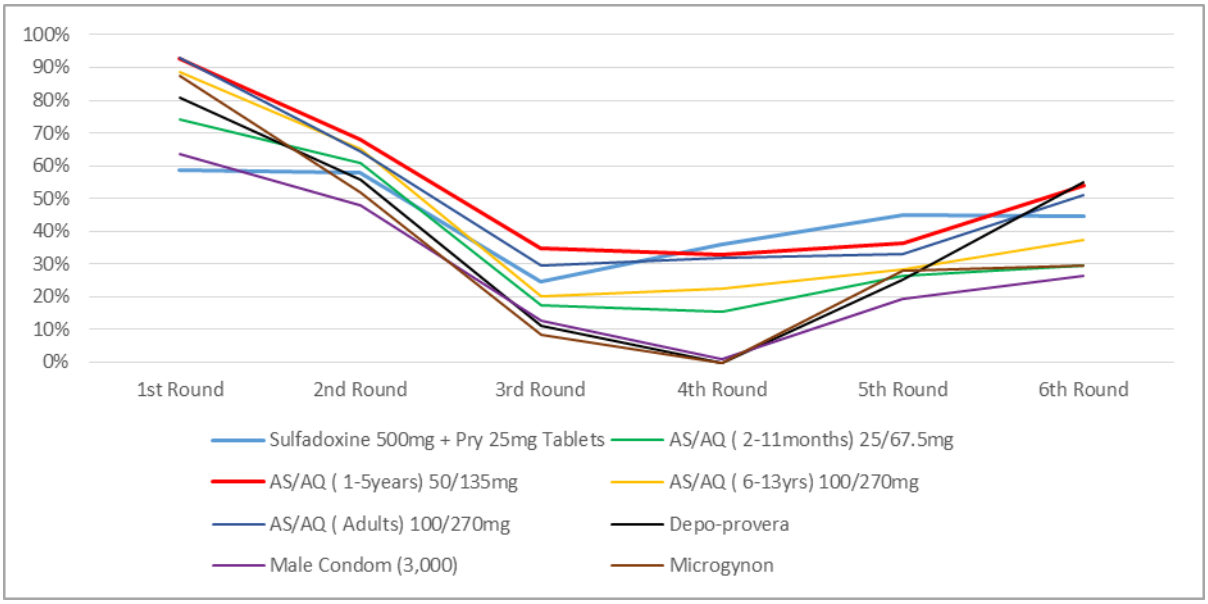
For the period October 2014 to September 2015, the project in collaboration with SCMU and programs conducted three commodity distribution rounds (4th, 5th, and 6th) under the IA. During these rounds, the delivery coverage rose from 93 to 100 percent for program drugs to health facilities in the five USAID counties (Nimba, Lofa, Bong, Margibi, and Montserado). Data analysis is shown in figures 9 and 10 below.

Figure 9. Delivery Coverage for the USAID-Supported Counties – Liberia



As shown in figure 9, there was an increase in the stockout rate in the sixth round compared to the previous rounds. This can be attributed to a seasonal increase in consumption at the county level and the delay in the implementation of the sixth round. According to the distribution schedule, the sixth round was implemented one-and-a-half months late. In previous rounds, the Montserrado County distribution timeline was separated from the other counties that contributed to separate reports for the USAID supported counties. In an effort to harmonize the distribution for standardization of the timeline, the distribution schedule was adjusted, thus contributing to the delay.

Figure 10. Comparison of Stockout Rates over Six IA Rounds in USAID-Supported Counties (Bong, Lofa, Margibi, Montserrado, and Nimba)



Following the implementation of five rounds of IA distribution, an assessment was conducted to review the quality and effectiveness of the IA supply chain in June 2015. This was a collaborative venture that included the SCMU, the vertical programs, county health teams, partners, and three project technical advisors. Data collection

teams participated in a one-day workshop to be trained in the use of the data collection tools. As part of the approach, six counties (Montserrado, Gbarpolu, Lofa, Nimba, Sinoe, and Grand Kru) were sampled and a total of 36 health facilities (six hospitals, nine health centers, and 21 clinics) were visited for data collection.

Findings from the assessment showed decreases in the commodity stockout rate over the first five rounds, with a deviation from the trend in the sixth round; an increase in product availability; and improved logistics data availability and accountability for commodities. During the IA assessment staff at health facilities reported that program products, specifically malaria and family planning, had become much more available over the past year-and-a-half. Some staff also reported feeling that availability of essential medicines had improved too, as they often arrived with the program products. While stockouts still occurred, staff reported that they did not last as long as before and that the district health offices (DHOs) and Drug Administration/Drug Depot Focal Point would at times reallocate stock between facilities to cover shortfalls.

Madagascar

The management of health commodities in Madagascar is driven by the funding sources. Apart from essential medicines that are procured, stored, managed, and distributed from the central medical warehouse to district and health facilities' pharmacies, program/donated commodities such as malaria commodities are managed by each vertical program. This resulted in parallel inventory control systems by commodity type with differing SOPs. Over the past fiscal year, USAID | DELIVER PROJECT organized a system design review workshop to harmonize the various stock management procedures. Thirty poeple from all levels and various implementing partner organizatins attended the workshop and reviewed the LMIS, the inventory control system (which includes resupply frequency and stock minimum/maximum level), and warehousing and transportation requirements.

Following the system design, the project, the Directorate of Pharmacy, Laboratory, and Traditional Medicine (DPLMT), and the LMU drafted a harmonized SOP manual for operational management of health commodities, a supervision guide, a trainer's guide, and a participant handbook. Since August 2015, DPLMT and the LMU have used these materials to start and monitor the pilot of the newly design distribution channel in 106 health facilities in five districts of the Boeny and Antsimo-Andrefana regions.

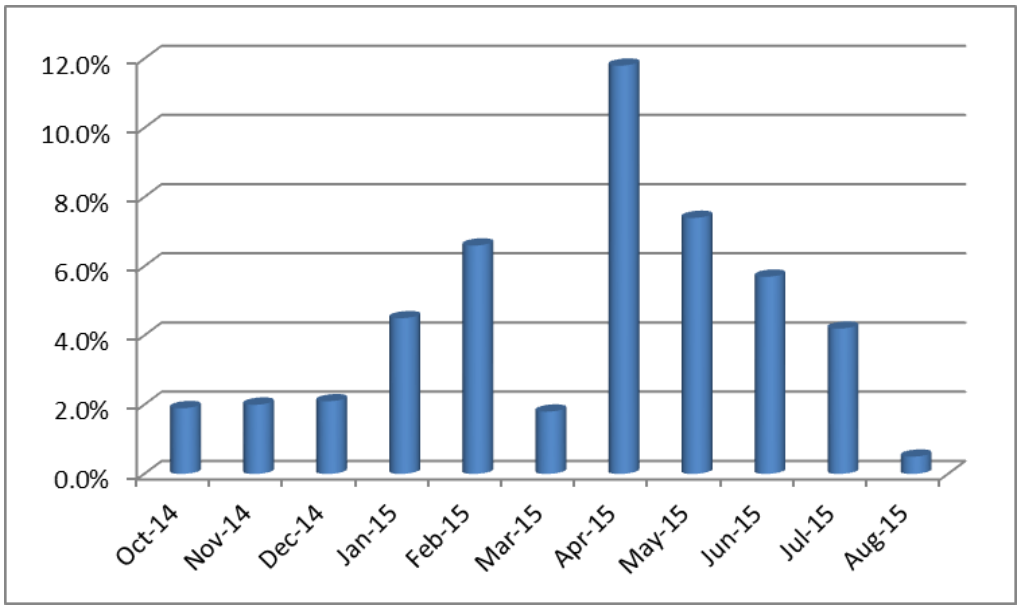
Malawi

Overall facility stock status in FY15 averaged from 1.3 to 3.0 months of stock (MOS), which is within the established minimum-maximum levels of 1–3 MOS as per MOH policy. This was achieved despite the delayed receipt of a Global Fund procurement of 2 million ACTs and increased consumption of ACTs in 2015 following the high consumption pattern for the same period in 2014.

During this year, the project continued to support key activities in LMIS data management, pipeline monitoring, and supportive supervision, and ensured reliable commodity distribution through the robust parallel supply chain system. In addition, project staff continued to engage and build capacity with MOH personnel from Health Technical Support Services (HTSS) and the NMCP. These efforts contributed to improved product availability at the facility level, evidenced by the consistent stock status of malaria commodities maintained despite the challenges noted above.

The stockout rate for all A/L presentations, Malawi's first-line ACT, ranged from an average of 1.6 percent in Quarter 1 to 3.5 percent in Quarter 4. Though the rate reached a high of 11.8 percent in Quarter 3, the rate registered a progressive improvement from the months of May to July 2015. For the period October 2014 to August 2015 (with the exception of April 2015 when the stockout rate was 11.8 percent), the stockout rate has been below 10 percent. Figure 11 shows the trend in facility stockout rates for all A/L presentations from October 2014 to August 2015.

Figure 11. Facility Stockout Rates for all A/L Presentations from October 2014–August 2015



Nigeria

In FY15, the project increasingly and continuously provided technical assistance in the development of malaria commodities distribution plans and physical resupply of products procured by PMI, the Global Fund, and the World Bank to over 3,500 health facilities across the country bimonthly. This effort has improved access to high-quality malaria supplies in more Nigerian communities and prevented wastage that might have resulted from expiry.

To improve the reporting rate on malaria logistics data from all PMI-focus states, the project commenced the collection of malaria logistics data irrespective of donors. The reporting rate increased from 25 to almost 100 percent in all PMI-supported states, and the process has improved the visibility of malaria logistics data at the national level.

South Sudan

The project helped the MOH get the importation verification and tax exemption certificates for anti-malaria kits. As a result, all anti-malaria medicines and test kits were received in the country and distributed counties and health facilities without incident.

The project leveraged World Food Program airlift capability for distribution of anti-malaria medicines and test kits to the three conflict-affected states of South Sudan (i.e., Jonglei, Unity, and Upper Nile). The

Photo: USAID | DELIVER PROJECT, 2015.

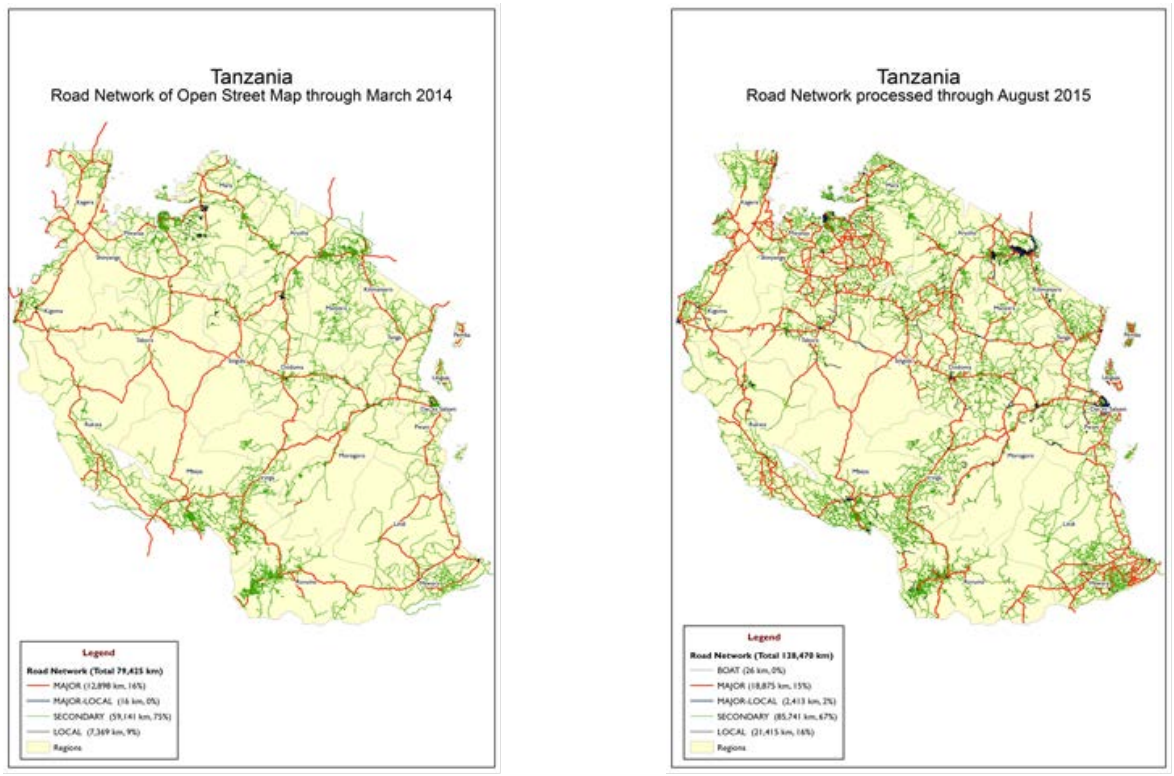
World Food Program airlift used by the project to distribute anti-malaria medicines and test kits in three conflict-affected states in South Sudan

project also coordinated closely with implementing partners, state MOHs, and county health departments to assist with distribution to conflict states. As a result, all counties in the conflict states received the first and second Emergency Medecines Fund (EMF) kit consignments, while 88.6 percent and 61.4 percent of the counties received the third and fourth anti-malaria consignments, respectively (the first two malaria consignments were distributed in FY14). The remaining commodities will be distributed in FY16.

Tanzania

In 2014, the project facilitated a distribution optimization exercise for the MSD to increase distribution performance, improve services, and reduce cost. The first step was to map the different routes in the country to establish road networks available to transporters. A total of 21 regions of Tanzania Mainland and the islands in Zanzibar covering the MSD and CMS distribution network were selected. MSD now has high-quality digital road network with over 60,000 km of additional roads and corresponding maps for future optimization. The updated road network provides a greater level of detail than the initial version available through Open Street Map, as shown in the before-and-after maps below in figure 12.

Figure 12. Road Network of Open Street Map through March 2014 and through August 2014 (comparison)



Transportation resources are key to ensuring commodity security; the country depends on them to ensure distribution and full supply of medicines and other public health commodities to hospitals, health centers, and dispensaries. The shift to a direct delivery model—from zonal warehouses to health facilities—has greatly increased the importance of last-mile distribution. During the period under review, the project mapped road networks for distribution, collected and validated geo-coordinates for the 5,000-plus health facilities, and optimized routes for distribution to ensure last-mile delivery across the country.

The project procured 10 motorcycles for the Zanzibar MOH to ease transport challenges that health care workers in the districts face when implementing supply chain activities to ensure that commodities reach the intended users. These activities include conducting supportive supervision, assisting in redistribution of commodities where necessary, and following-up report and request forms from the health facilities.

Zimbabwe

The USAID | DELIVER PROJECT supported the distribution of malaria medicines and RDTs to all provinces in the country. Medicines distributed included A/L presentations, SP, quinine tablets, quinine injection, and the new medicines (artesunate/amodiaquine presentations and artesunate injection) that became available during the period under review. Distribution of artesunate suppositories and primaquine tablets will commence as the products become available in FY2016. PMI, through the USAID|DELIVER PROJECT, provides transport, LMIS hardware, and software support to the ZIP distribution system. Using the ZIP system, the project reached a high of 99.7 percent and an average of 94.6 percent coverage of service delivery points.

LLIN Distribution Activities

Burma

In an effort to increase national coverage, PMI funded the procurement of 553,500 LLINs for eventual distribution to 47 Stratum 1B townships that are outside the priority area covered by the Global Fund. The project worked with the NMCP to identify which townships would be able to receive and distribute their LLINs during the rainy season, when the LLINs were expected to arrive, and which townships would have to wait to until after the rains to receive their LLINs. The project then selected one of its freight forwarders to manage the warehousing and transportation of these LLINs. In July 2015, during the height of a monsoon that resulted in numerous areas being declared as disaster areas, deliveries to 26 townships were completed.

Workers in Burma performing a stock count of LLINs in the MEBS warehouse (above), and unloading product during a delivery of LLINs to Madaya (right). Photo: Chris Warren, 2015.

Burundi

The project supports the MOH in the distribution of LLINs to vulnerable populations including pregnant women and 9-month-old children. During this fiscal year, an estimated 78 percent of pregnant women and 92 percent of 9-month-old children received 779,450 LLINs through routine distribution at prenatal appointments and child vaccination sessions. The project also distributed 13,314 LLINs through Burundi's social marketing program, which markets and sells LLINs throughout the country.

Democratic Republic of Congo

From January to September 2015, the project coordinated the distribution of LLINs to several health zones throughout the DRC. Approximately 135,000 LLINs were delivered to 43 new PMI-supported health zones in Kinshasa, Katanga, Kasai Oriental, and Kasai Occidental to protect pregnant women and children under 12-months-of-age against malaria.

Ghana

The project collaborated with the NMCP to facilitate the distribution of LLINs from the CMS to six regions for implementation of the health facility-based distribution (through ANC and child welfare clinics). A total of 700,700 LLINs were allocated and transported to Northern, Upper East, Upper West, Ashanti, Brong Ahafo, and Western regions for distribution. The project also helped NMCP monitor and supervise the distribution of 5,252,000 LLINs through mass campaigns in all districts in the Eastern and Volta regions through a point distribution, targeting universal coverage.

These interventions are improving the availability and use of nets in Ghana. Results of the Ghana Demographic and Health Survey indicate an increase in the use and ownership of LLINs: the proportion of households with one or more LLINs increased from 33 percent in 2008 to 68 percent in 2014, and the proportion of children under five-years-old who slept under an ITN the previous night grew from 28 percent in 2008 to 46.6 percent in 2014.

Photo: John Gikapa for USAID | DELIVER PROJECT, 2015.

DRC Country Director John Gikapa and NMCP Program Director Dr. Joris Likwella at LLIN distribution event, July 2015, Katanga Province, Rwashi health zone.

Liberia

Photo: Menmon Dunah for USAID | DELIVER PROJECT, 2015.

Members of the Liberia NMCP, the CHT of Nimba County, and USAID | DELIVER PROJECT field staff distribute LLINs by canoe and motobike to hard-to-reach areas of Liberia.

In Liberia, malaria remains a major threat to public health, with pregnant women and children under five especially at risk. The National Malaria Strategic Plan provides a three-tiered integrated vector management approach to increase mosquito net ownership among the population. Although provision of nets in the maternal setting is included in various strategies, it has never been fully implemented in the past. USAID, through the project procured 250,000 LLINs for routine distribution through ANC and institutional delivery services. As part of the implementation, a trainer-of-trainers (TOT) workshop was held for central-level MOH and program staff was followed by trainings for the county health teams, district health offices, pharmacist and team, officer in charge, and ANC and delivery staff in all health facilities in the country. A total of 1,532 people from all 15 counties were trained.

Mali

The project has procured LLINs since 2007 and distributed them since 2011. These mass campaign distributions have reached populations throughout the country with a goal of universal coverage for the population of approximately 15 million. In FY15, the project distribution approximately 2.8 million LLINs through mass campaigns in the Koulikoro and Sikasso regions of the country.

Mozambique

During FY15, the project supported the distribution of 1,800,611 LLINs, including transportation from port to provinces nationwide and distribution from provinces to district level in Cabo Delgado and Nampula provinces. The project supplements distribution with corresponding supervision visits in each province and has instituted an LLIN distribution tracking database.

Photo: USAID | DELIVER PROJECT, 2015.

The minister of state in charge of primary health care distributing LLINs to children under five at the official campaign launch campaign in Rwanda.

Nigeria

The project procured LLINs for both routine and mass replacement campaigns. In FY15 in collaboration with Roll Back Malaria Partners, the project supported the transportation of 10,708,250 LLINs from the state to the local government level to ward distribution points, where they are distributed to end-users in the six PMI focus states of Bauchi, Cross River, Ebonyi, Kebbi, Nasarawa, and Zamfara. The project also provided technical assistance and support to NMEP in the implementation of core logistics work stream activities. These activities were conducted during the mass replacement campaigns across 12 states, where a cumulative 34,745,828 LLINs were distributed.

Rwanda

The President's Malaria Initiative donated 1.4 million LLINs to the Government of Rwanda. The final destination of the 1.4 million LLINs was the community, via the central warehouse and the health facilities. The first distribution plan received from the NMCP called for 1,350,650 LLINs to be distributed to 13 high malaria endemic districts and 157 health centers. Distribution, through private company Vava Tours, began on March 11, 2015. Due to the urgent nature of the request, Vava Tours in collaboration with the MOH and with support from the project accelerated and completed distribution in 11 working days.

Photo: USAID | DELIVER PROJECT, 2015.

LLINs in South Sudan are loaded for distribution to the USAID-supported counties in Central and Western Equatoria States.

The second distribution plan was received on April 24, 2014 and called

for distribution of 46,370 LLINs to 152 health centers in 27 district hospitals. Vava Tours was again selected to distribute the LLINs.

South Sudan

The project delivered 350,000 LLINs to all USAID-supported counties in Central and Western Equatoria States of South Sudan. The LLINs are being distributed to pregnant mothers, under-five children, and other vulnerable people at health facilities.

Zambia

The project, with support from PMI and in collaboration with the NMCC and NetWorks, is working to implement the continuous distribution of bed nets through schools and communities as a complementary distribution strategy in Zambia. This activity was piloted in Luapula Province and targets provinces that have the highest malaria burden, including Luapula, Eastern, Muchinga, Northern, and North Western Provinces.

In October 2014, this activity began with a validation meeting with NMCC to finalize the national continuous distribution (CD) guidelines, followed by a pilot development workshop in Luapula Province to refine the implementation guidelines, timelines, quantification, and detailed pilot plan. The team traveled to Eastern, Northern, and Muchinga Provinces to meet district and provincial malaria stakeholders for a review of the implementation guidelines to ensure that they understood the rationale behind CD and how it would work. This also involved orientating malaria focal point persons to NetCALC, a forecasting tool for LLINs.

The project worked with the NMCP to plan meetings to kick-start the process of adding schools and the community as channels for continuous distribution of nets in the selected districts of Northwestern Province. NMCP, with support from Global Fund, is piloting CD of nets in the province. The project helped NMCC estimate the cost of providing training materials to the province and facilitating training workshops.

A total of 1,290,000 bed nets were received and 1,033,000 were distributed to selected districts based on a distribution schedule prepared by the NMCC in collaboration with PMI. The nets were distributed at ANC and under-five children's clinics.

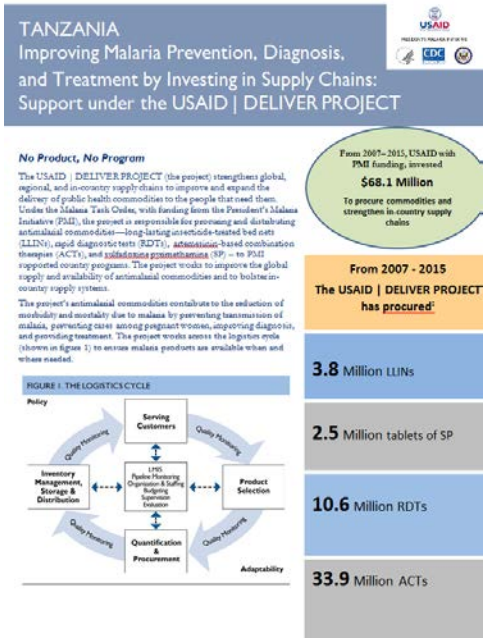
The remaining 256,400 nets meant for distribution through schools in Luapula are currently being reprogrammed for distribution through other outlets at the request of PMI. The Ministy of Education's continuous distribution school program has not yet been initiated.

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

Core-Funded Activities

Country Stories

Task Order 7 is continuing 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 (see Tanzania example, below). Supply chain and malaria indicators are included to show the link between investments in supply chain and improvements in malaria prevention, diagnosis, and treatment.



In FY2015, the TO developed 11 country stories, one for each country with project presence. In addition, 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

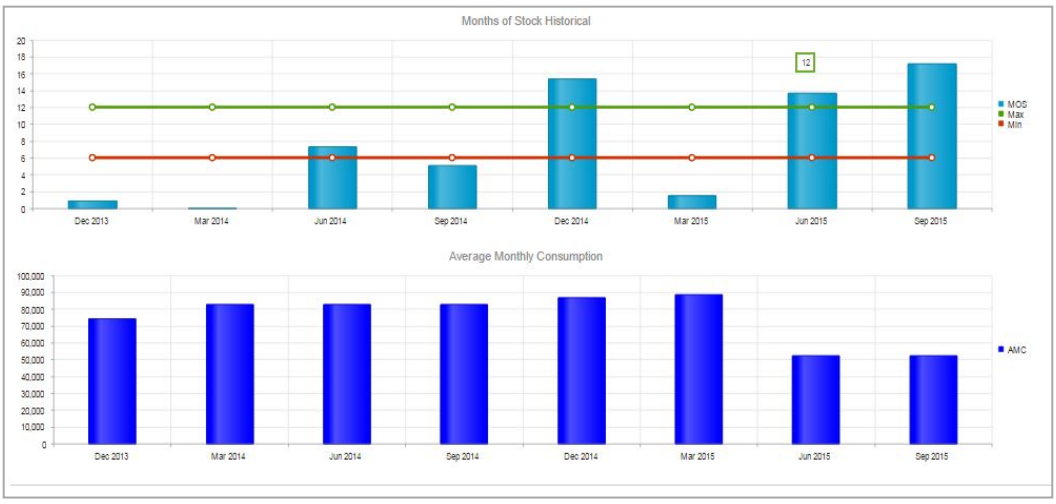
The PMI EUV activity is a health facility survey that regularly captures information about the malaria supply chain and malaria diagnosis and treatment at public health facilities. The data generated by this activity provide visibility of important logistics and case management information that is otherwise unavailable to decisionmakers. The EUV is routinely implemented by the project in Burkina Faso, Ghana, Liberia, Malawi, Mozambique, Nigeria, Tanzania, Zambia, and Zimbabwe. Reports are available on a rolling basis. In FY2015, the project collaborated with PMI-Washington, Systems for Improved Access to Pharmaceuticals and Services (SIAPS), and other key stakeholders to conduct a global-level EUV summit that addressed a variety of issues, including a review of current and planned EUVs; sampling strategies; and additions to required indicators and commodities.

Procurement Planning and Monitoring Report for Malaria

The PPMRm provides quarterly visibility for central-level stock 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 be included—regardless of the source of supply (e.g., GFATM or PMI). The report also covers key commodity security updates in-country, including reporting on finance and capital, procurement, and logistics committees, providing a detailed quarterly snapshot of activities and accomplishments in each country. Data are reported from 24 countries, including eight countries on the SIAPS project and 14 countries supported by project staff. Two countries report though USAID bilateral projects.

The PPMRm can address stockout situations and other critical commodity-related issues by providing key in-country stock status data for quick decisionmaking. In addition, countries can highlight particular actions or issues requiring attention, thus providing another avenue for early detection of potential situations and expediting a possible response.

Figure 13. Historical MOS and AMC Graph from the PPMRm



Upgrades to the PPMRm were completed during FY15, and include features designed to make data analysis more intuitive and comprehensive. Data are now exportable in Excel format for all users, with expanded access to multiple countries for key individuals within the project. Additional upgrades include comprehensive graphs presenting variables such as stock on hand, MOS, and stockouts (see figure 13). A graph that allows users to view predicted SOH levels for individual countries based on the last average monthly consumption and upcoming shipment data from any donor has been developed. Users can customize graphs, provide analysis over or at a single point in time, and present information by single or multiple countries. As use of the PPMRm continues, the project is incorporating suggestions from PMI and other users for methods to improve the tool's functionality and usability.

Figures 14 and 15 show central-level stockouts of A/L and AS/AQ by calendar year, as reported through the PPMRm. When interpreting these data, it is important to 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 H (facility stockout rates).

Figure 14. Number of Countries Reporting Stockouts of A/L Products

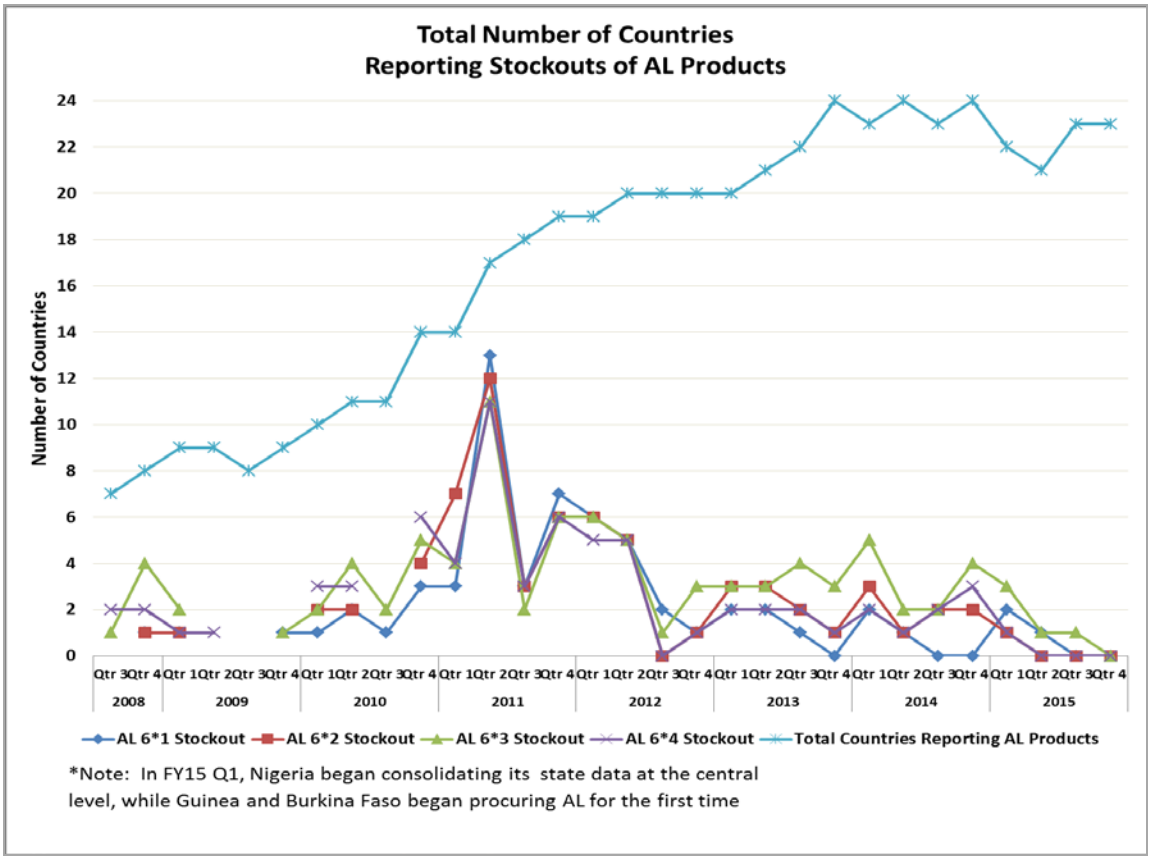
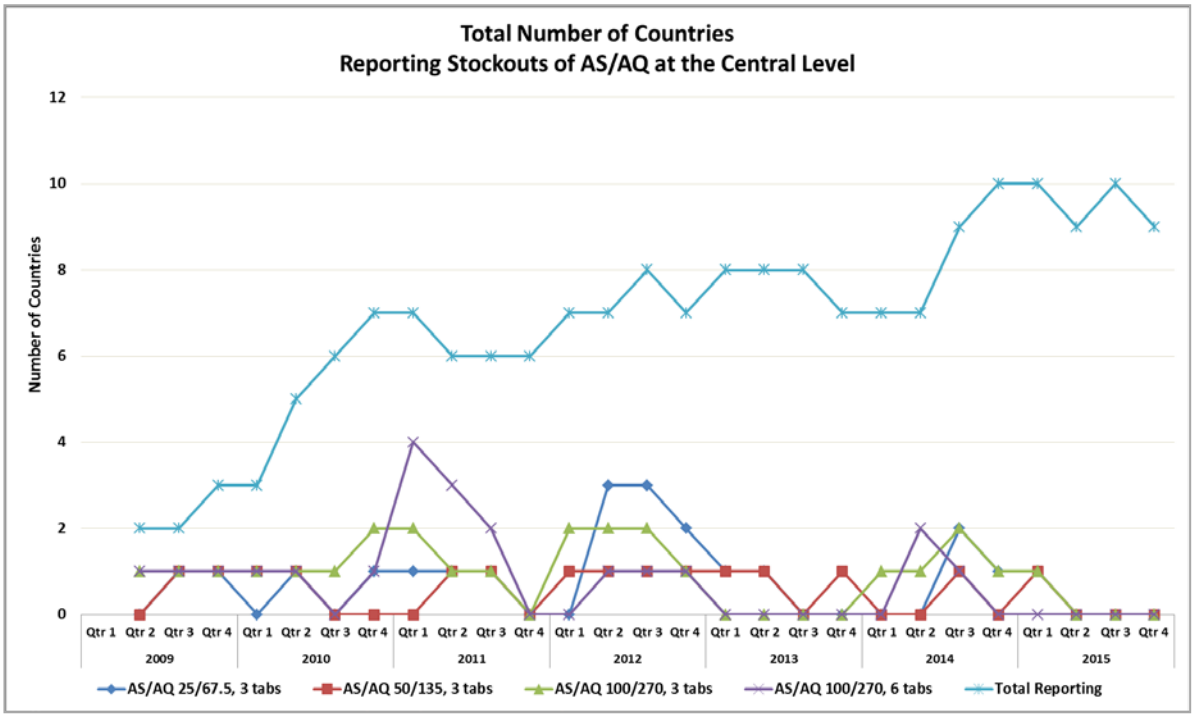


Figure 15. Number of Countries Reporting Stockouts of AS/AQ



For A/L, the percentage of countries stocked out reached a high at the beginning of 2011, with significantly reduced central-level stockouts reported from mid-2012 on. Figures 16 and 17 show the number of countries with more than three MOS at the central level for A/L and fixed-dose combination (FDC) AS/AQ, by calendar year, as reported through the PPMRm. For A/L, the figures illustrate a general upward trend, following the low point at the start of 2011. With the exception of a dip during 2012, AS/AQ also experienced a general overall increase since 2011.

Figure 16. Number of Countries with More than Three Months of A/L

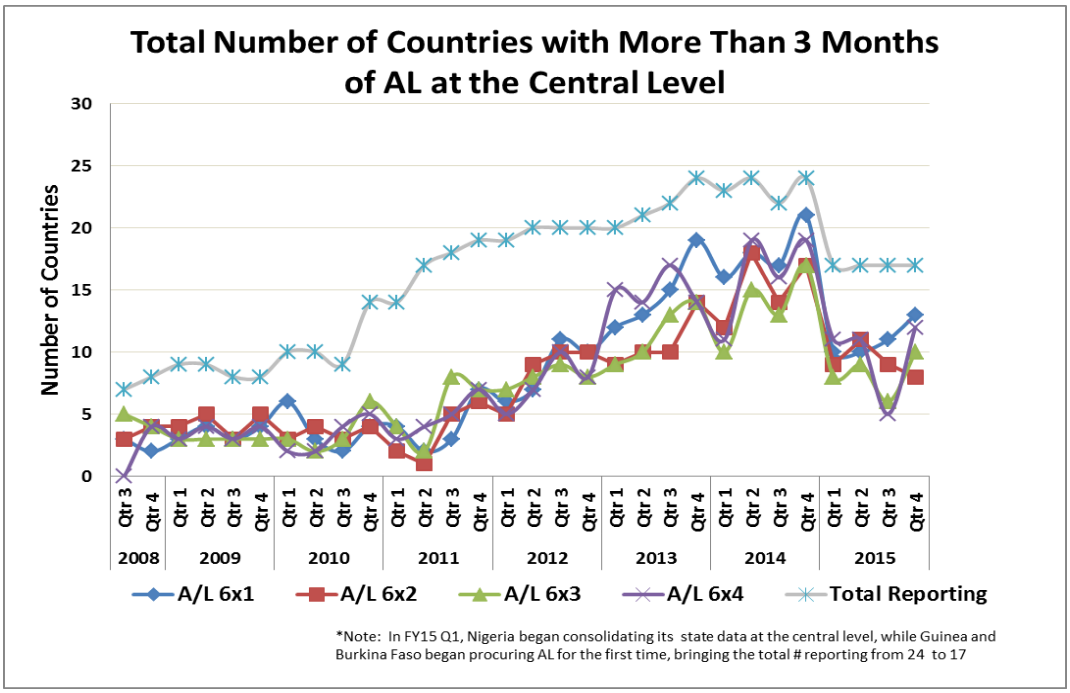
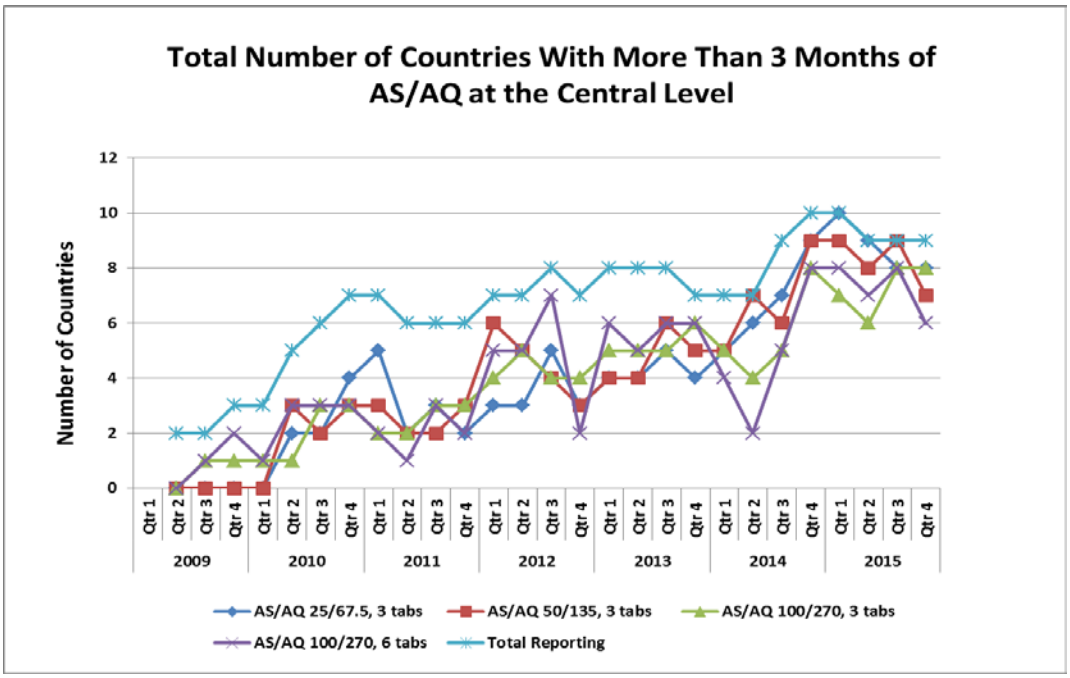


Figure 17. Number of Countries with More than Three Months of AS/AQ



Country Highlights

Burkina Faso

Since May 2014, the project has been supporting a pilot of the CommCare mobile phone application to improve malaria data reporting and case management at the community-level catchment of one health facility in Kaya District. When fully implemented, the platform will help improve data reporting between community health workers and health facilities, and ensure that stock of vital malaria commodities is continuously available at the community level. In March, the project met with the NMCP coordinator and his staff for an update and discussion on the CommCare pilot. A key decision made at the meeting was to evaluate the pilot distribute an assessment report illustrating difficulties encountered and recommendations to help CHWs use CommCare. The project, with NMCP, will continue monitoring this pilot through May 2016; then this assessment will be conducted and findings shared with NMCP and partners to plan the way forward.

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 the CommCare application on their mobile phones.

Ghana

The project and other partners supported the Ghana Health Service (GHS) to introduce an early warning system (EWS) in July 2011 to provide real-time stock status information to support decisionmaking. The system is an SMS/web-based stock reporting system for tracer health commodities including malaria products from selected health facilities and regional medical stores in all 10 regions of country. Trained facility staff send stock status information on tracer products to the system on weekly via SMS/web messages. Health system managers at the national, regional, and district levels can see this information on the web (www.ewsghana.com) and/or through email reports to provide feedback and make decisions that enhance product availability at SDPs.

As follow-on to the EWS assessment in 2013, the project in collaboration with GHS engaged technical services provider Dimagi Inc. to review the system, enhance its performance, and incorporate more user-friendly features. Dimagi has completed work on the review of the EWS and has transitioned it to its Commtrack operations platform. The new platform enhances systems flexibility and provides more interactive user interface and customized reports. The Commtrack platform will also be able to manage high user rates and scale-up requirements.

Laos

Through a two-pronged approach, the web-based LMIS for malaria commodities has been strengthened at both the operational (provincial, district, and health facility levels) and management levels (at CMPE logistics unit). At the central level, the web-based LMIS has been upgraded to an ODK platform that will capture bi-weekly reporting on stock on hand of malaria commodities entered into the web-based LMIS form by staff at all 17 provincial anti-malaria stations (PAMs), 140 district anti-malaria stations (DAMs), and at 200 larger health facilities (military, police, and provincial hospitals).

The bi-weekly report form now includes additional information on batch numbers and expiration dates of commodities in stock. The reports are supplemented by electronic and paper-based LMIS monthly summary reports (depending on internet capacity at districts and health facilities) that include data on quantities received, consumption, losses and adjustments to inventory, and closing stock balances.

The project also supported the development and translation of the LMIS SOP manual and a curriculum that is being used to train operational staff in a national rollout training. At the central level, CMPE logistics staff have been trained on the ODK platform and a separate SOP manual for maintenance of the Web LMIS was developed by the project's international consultant. Ongoing capacity building in LMIS data management and analysis at CMPE will be provided by the local malaria supply chain consultant and the new USG-funded international consultant who has been embedded at CMPE since April 2015.

Photo: Chris Warren, USAID | DELIVER PROJECT 2015

Reviewing LMIS data at Phonethong District anti-malaria station

Implementation and institutionalization of the web-based LMIS is already providing CMPE greater visibility on the availability of malaria commodities at the different levels of the supply chain, and supporting more informed decision-making at the central level to ensure the continuous availability and quality of malaria commodities.

Madagascar

The USAID | DELIVER PROJECT conducted a detailed supply chain network analysis to identify opportunities and considerations for the design and implementation of an integrated logistics system. Data collected included volumes of products coming into the country and being distributed; number and location of health facilities and warehouses; GIS coordinates of the central, district, and community warehouses; frequency of deliveries; list of hard-to-reach facilities; and distribution network and costs. The analysis allowed the project to develop a standard costing model to compare various distribution options. In addition, variables in the supply chain such as erratic procurement and irregular distribution schedules across programs were identified. Figure 17 on the previous page shows results of the analysis.

The network analysis results and costing were used to inform key system design parameters including inventory control (resupply frequency, max/min, etc.), warehousing requirements, and transportation requirements. Based on the volumes of program/donated commodities and cost-recovery products distributed by central warehouse to regions in 2013, an efficient distribution channel of commodities from central to health facilities will require two additional warehouses, one in the north and another in the south to reduce the volume treated in the central store and to facilitate transport in the neighboring district.

Malawi

The facility reporting rate averaged 91 percent during the reporting period, reaching a high of 95 percent in October and November 2014 and June 2015. This improvement in performance is a result of proactive data collection efforts by the MOH with support from the project and other partners. As a result of this improved LMIS reporting, more data has been available for making informed commodity procurement and re-supply decisions. For example, in October 2014 the project used the LMIS data to see that if the consumption of A/L continued at existing stock levels, the country would experience critical stockouts. Therefore, an emergency order to procure 3 million ACTs was made. In addition, the project has been able to support HTSS to consolidate the monthly distribution list using LMIS data, which has ensured timely and effective commodity distribution through the parallel supply chain, thus contributing to improved product availability at health-facility level.

Project staff continued to work closely with the Health Technical Support Services/Pharmaceuticals (HTSS/P) unit and malaria logistics officers on LMIS data management and analysis. Through these efforts, the project worked to ensure the transfer of knowledge and skills to government staff as part of local capacity building.

Mozambique

To improve supply chain visibility, the project is implementing an innovative central-level tool that combines the eLMIS, known in country as SIMAM, the warehouse management system, and the procurement system data for distribution planning and other supply chain function decisions. The project is also supporting SIMAM implementation at provincial and hospital levels to collect consumption data for malaria commodities. The systemis being installed at the district level: to date, 147 districts have SIMAM installed and operational.

Nigeria

The project trained 674 health personnel on supply chain management of malaria commodity in 11 PMI focus states to continuously improve the management of malaria commodity and quality of malaria logistics data. Through this training health facility staff were able to provide regular, timely, and correct reporting of logistics data, which improved malaria commodity availability at service delivery points.

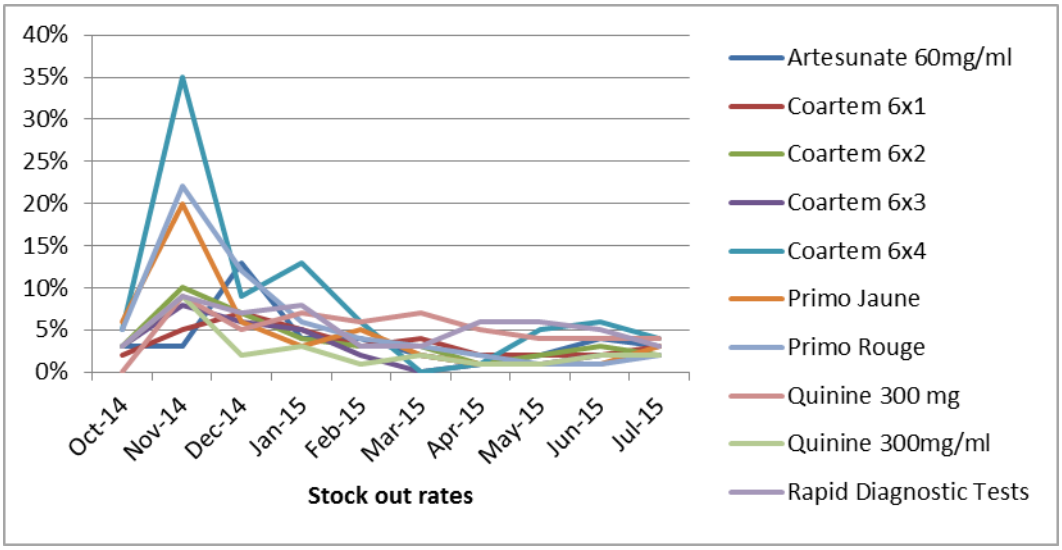
Two mechanisms to ensure an uninterrupted supply of malaria commodity to supported health facilities were employed: 1) the review and resupply model for the collection of logistics data for resupply decisions and on-the-job training on inventory management; and 2) the direct delivery and information capture (DDIC) model, a vendor-managed inventory system of distribution. The project uses these mechanisms to generate logistics data to calculate the malaria commodity resupply to service delivery points.

Thirty-two cycles of bimonthly review meetings with approximately 2,239 health facilities in seven PMI focus states (Akwa Ibom, Benue, Cross River, Kebbi, Kogi, Nasarawa, and Oyo) were held to obtain data in advance of distribution for the last mile distribution system. In four other PMI focus states (Bauchi, Ebonyi, Sokoto, and Zamfara), the integrated delivery of malaria commodities and family and reproductive health commodities supplied a total of 823 health facilities through the DDIC mechanism that collects logistics data from facilities in conjunctin with resupply of health commodities.

Rwanda

The project has been assisting the Ministry of Health in analyzing LMIS data received from health facilities. The reporting rate is relatively high, ranging from a high of 91.91 percent in November 2014 to a low of 82.21 percent in February 2015. The stockout rates have been decreasing over the course of the year, as shown in figure 18. Currently for most malaria commodities it is less than 5 percent at SDPs. The low stockout rates can be attributed to the new approach of the quantification, which considers the seasonality aspect of malaria. This has also reduced stockout rates at the central level, with only one stockout of artesunate in 2015 thus far, compared to multiple stockouts of all presentations of ACTs in 2014.

Figure 18. Stockout Rates October 2014 to July 2015, Rwanda



To enhance this visibility and track consumption and stock on hand data efficiently, the manual LMIS system was retired by September 30th as the primary source of this data. The newly installed eLMIS that has been functional since March 2014 will take over the role of the LMIS. The eLMIS project implementation review was conducted to ascertain if project objectives were met and how effective the project management practices were. The preliminary results from the evaluation of 183 facilities indicated that a significant number of key performance indicators had improved since the implementation of the eLMIS. The overall assessment indicated that the eLMIS has improved the supply chain and logistic function by—

- providing near real-time data to support supply chain and logistics reporting
- reducing level of effort and time required preparing and processing purchase orders
- reducing the number of days it takes for DPs to deliver orders to facilities
- decreasing level of effort and time spent on logistics and inventory management operations
- providing management information to support supply chain planning in real time.

Other activities—

- developed data integrity plan to promote shared accountability among key stakeholders that are responsible for the use, production, data entry, and analysis of eLMIS data
- initiated integration of eLMIS with HMIS to promote interoperability and improve use of data
- established drug coding governance structure to ensure a centralized point for registering, assigning unique identifiers, and tracking and monitoring all medical products in the country from the point of procurement to the last SDP.

South Sudan

The project, in collaboration with the national and state MOH, conducted supportive supervision in selected counties in four states of South Sudan. The project and MOH team were able to monitor the storage and distribution status of the EMF kits, including the anti-malaria commodities at the county and health facility levels. No stockout of anti-malaria tracer medicines was reported during the supervision visit.

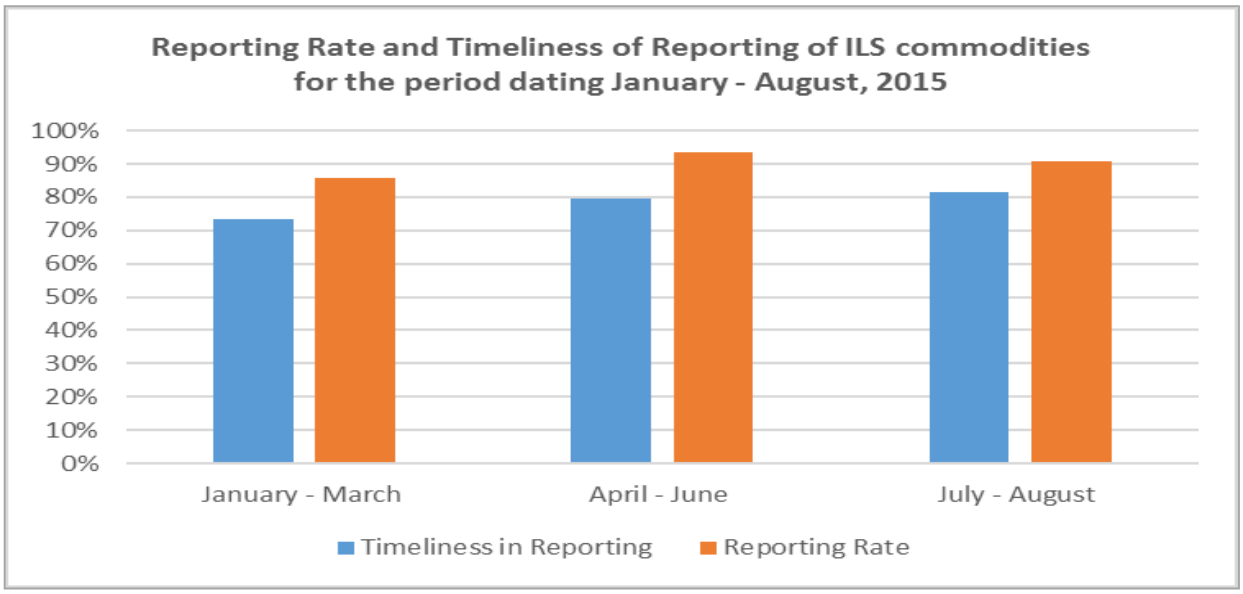
Tanzania

The availability of high-quality logistics data has been one of the greatest challenges facing the health care system in Tanzania. In response, the USAID | DELIVER PROJECT has been working to improve the visibility of key logistics data throughout the supply chain by supporting the creation and implementation of several innovative data collection and analysis tools, first through the Integrated Logistics System (ILS) then through the eLMIS, ILSGateway, and end-use verification (EUV) surveys.

Malaria medicines are included as part of the ILS, a paper-based reporting system that was rolled out by the project in 2009. More than 150 products are managed through the ILS, including family planning products, laboratory supplies, and essential medicines. Under the Tanzania ILS, facility managers use a single system for reporting and managing multiple groups of public health commodities, including malaria testing and treatment products.

In 2014, Tanzania implemented the eLMIS, a revolutionary and cost-effective system that ensures greater commodity security and better health outcomes for Tanzanians. Led by the Ministry of Health and Social Welfare and supported by the project and the SCMS project, this breakthrough information system has enabled Tanzania to transition from a paper-based system to an electronic format, fostering better, faster, and more accurate reporting of supply chain data, reducing stockouts of health commodities, and ultimately providing better access to medicines to improve health outcomes. Figure 19 demonstrates the improved performance in reporting rates and timeliness of health facilities in the year 2015.

Figure 19. Reporting Rates and Timeliness of Reporting of ILS Commodities, January–August 2015



To date, a total of 5,153 health facilities in Tanzania Mainland are reporting via the eLMIS. Ministries in both Tanzania Mainland and Zanzibar exhibited country ownership by officially launching the eLMIS platforms at two events in June and July, 2015 respectively. Two other pharmaceutical services sector supply chain tools were also launched during this period under review; the eLMIS and the LMU charters.

Following the success of the first phase of implementation of the eLMIS at the district level, the project initiated the development of the Hospital Module for Zanzibar and Tanzania Mainland in March 2015 and May 2015 respectively. As of September 30th, 2015, 436 health care workers (doctors, medical assistants, medical officers, clinical officers, pharmacists, pharmaceutical technicians, laboratory technologist, and nurses) from 140 hospitals

in Tanzania Mainland have been trained on the eLMIS and are expected to report and order malaria commodities through the system.

Since implementation, district pharmacists have noted that the system has simplified the processes of filling in the report and request (R&R) forms. The project has also responded to a number of requests from districts to train their health care workers to use the eLMIS to simplify and hasten the reporting process. Thus far, the project has built capacity of 312 pharmaceutical technicians and medical assistants in 161 dispensaries and health centers from eight district councils in Tanzania on the use of eLMIS. Several tools, including infographics on basic use of computers, were developed to minimize the learning curve for lower facility health care workers.

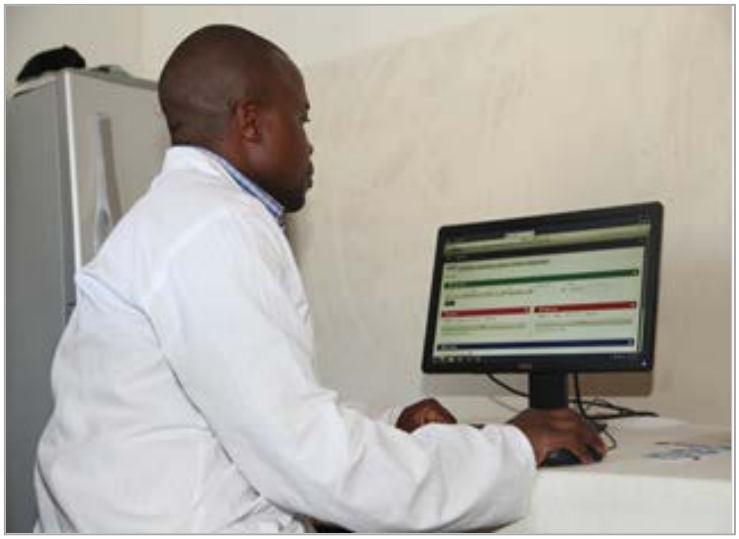


Photo: USAID | DELIVER PROJECT, 2015

A health care worker at Mzimuni Dispensary in Kinondoni District using the eLMIS to order medicines.

The team also trained more than 30 MSD officers on eLMIS. In addition, the project trained a cohort of 23 Level 1 support staff on the back-end dynamics of eLMIS so they could help the district councils and facilities fix basic glitches and issues.

Zambia

The project supported MOH/NMCC in conducting joint monitoring and supportive supervisory visits to health facilities, specifically assessing malaria case management and commodity availability at SDPs. In the period under review, four EUVs were conducted quarterly in at least four randomly selected facilities in each of the 10 provinces. The visits have been synchronized to take place at the same time in all 10 provinces to provide a close to real-time assessment to present an overview of supply chain performance across the country. The results obtained during EUV provided a quick, adaptable, and informative "snapshot" of product availability and malaria case management at the facility level, and helped identify strengths and weaknesses in the areas of supply chain management of malaria medicines and case management.

Results from the EUV showed that stockout rates of one or more A/L pack sizes at facility level are generally low. This is consistent with the national statistics that show stockout rates of less than 5 percent for all A/L pack sizes. Additionally, the percentage of malaria cases diagnosed with RDTs is higher compared to microscopy (1 percent) and clinical (19 percent) diagnosis, averaging 80 percent. It has been noted, however, that the rate of clinical diagnosis is still high, and recommendations were made to NMCC to provide more training on malaria case management to improve adherence to treatment guidelines. Results from the assessment were also used to confirm malaria commodities assumptions made during forecasting and quantification.

Zimbabwe

The project assisted MOHCC to conduct ZIP data quality workshops for provincial, district, and NatPharm staff from the southern regions. The objective of the workshops was to identify ZIP/PHCP data quality issues, discuss possible causes, and agree on solutions and interventions to make logistics data more reliable for use in quantifications, management, and decisionmaking. One issue identified was poor stock management and record keeping at health facilities. Attendees developed a checklist for DPMs to identify and document stock management and record-keeping issues during each ZIP delivery. The checklist will be applied to monitor improvements in subsequent quarters.

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

Country Highlights

DRC

The USAID | DELIVER PROJECT organized a five-day consensus and harmonization workshop (April 19–25) to agree on how to effectively implement the functioning of the integrated supply chain, with a focus on resupply mechanisms. The workshop was attended by 20 representatives from MOH central and provincial levels, USG implementing partners, and major stakeholders supporting the national supply chain. The facilitators included two advisors from the home office.

Photo: John Gikapa, USAID | DELIVER PROJECT 2015

MOH participants discuss supply chain integration during the concensus and harmonization workshop.

Key results and deliverables from the workshop include the following:

- a draft of the new and integrated SOP and job aids
- an inventory control system to manage commodities
- defined roles and responsibilities in managing supply at various levels
- a harmonization plan for integration of the supply chain that includes key actions, responsible parties, recommendations, and deadlines.

Ghana

The project has provided support to the MOH for implementation of the five-year Supply Chain Master Plan (SCMP) that was developed in August 2012. The SCMP provides a set of guiding policies and interventions, and corresponding implementation activities to address the systemic challenges that have been identified with the current system. Following a stall in the SCMP implementation process, the MOH inaugurated a steering committee in December 2014 to provide oversight for the plan. In March, the project assisted the MOH to review the strategic provisions of the SCMP and the implementation plan to revise timelines and resource requirement.

The interim management team commenced work in September 2015 and is expected to provide the required technical and managerial support to accelerate the implementation process. The team is led by a long-term technical advisor sponsored by USAID through the USAID | DELIVER PROJECT, an advisor seconded to MOH from the WHO, and another advisor selected by MOH and to be funded by Global Fund. The implementation of the SCMP will ensure that high-quality health commodities are available, accessible, and affordable to all and supported by a sustainable, reliable, responsive, efficient, and well-coordinated supply chain.

Liberia

In 2010, the Ministry of Health developed an SCMP to guide supply chain implementation for a period of 10 years. The plan has only been partially implemented to date. Further, since the interim approach was adopted as a temporary commodity distribution solution, the SCMP merited revision to lay out the future of the supply chain. With technical assistance from the project, the MOH and partners embarked on the review of the SCMP in September. This four-day work session convened all supply chain stakeholders including SCMU, programs, community health, pharmacy), National Drug Service, the Liberian Medicines, and Health Products Regulatory Authority, Pool Fund, WHO, UNICEF, UNFPA, Collaborative Support for Health, CHAI, Riders for Health, Partners in Health, and Partnership for Advancing Community-based Services.

To map a new path to develop the supply chain and overcome challenges currently experienced in the supply chain, the revised masterplan prioritized three characteristics for future supply chains:

- one system, integrated from top to bottom that harmonizes across multiple streams using data
- provides accountability and availability
- reduces the burden on health care workers at lowest levels

The SCMP recommended and the MOH decided to outsource NDS management and operations to mitigate current performance and accountability constraints tied to low service level performance at NDS. The outsourced provider will be responsible for storage and distribution from central to health facilities using a network of storage facilities and building on existing assets. This option provides a more accountable, specialized service provider with a single mandate, allows counties to focus on monitoring and supervision, and transports resources dedicated to supply chain.

Malawi

The spot check intervention monitors distribution activity carefully and rapidly addresses issues problems involving accessibility, vehicle breakdown, delivery delays, and security. The project conducted spot checks during and after each commodity distribution to ensure compliance with contractual requirements. The following are key components of the spot check activity:

- Ensure the van is used exclusively to transport products that are supported by the USAID | DELIVER PROJECT.
- Ensure deliveries to SDPs are on time (based on planned delivery dates) to avoid surprise calls to the SDPs, which interrupt medical personnel's attention to patients.
- Confirm issues of hard-to-reach facilities and assess if there is need for alternative transport to the van.
- Confirm physical security of the drugs and key documents in transit.
- Check that both the fuel and trips are continuously recorded in the log to ensure effective monitoring of fuel utilization.
- Ensure that vans approved by USAID | DELIVER PROJECT for pharmaceutical distribution are used for distribution by the sub-contractor.
- Supervise any trans-shipments into alternative vans in cases of hard-to-reach facilities, breakdowns, or alternative mode of transportation i.e., boat.
- Ensure compliance with the good pharmaceutical practice deliveries by checking the van for dust, leakage, palletization, packaging, and ventilation.

Internally, the project continued to review the key performance indicators with its contractors, Cargo Management Logistics and IHS, on a monthly basis to ensure optimal sub-contractor performance.

Mozambique

The project is contributing to strengthening the accountability of the in-country supply chain by participating in inventory analysis activities and preparing quarterly requisitions in the Zambezia, Nampula, Niassa, Cabo Delgado, Tete, Manica, and Sofala provincial warehouses. Regional and provincial advisors also provide on-the-job training on ordering health commodities, eLMIS implementation, and data reporting. In 2015, support from these advisors enabled all the provinces to submit their requisitions on time, achieving a 100 percent timely reporting rate for the first time.

Nigeria

In response to a significant number of LLIN losses during delivery to Nigeria in 2014, the project implemented new standard operating procedures for LLIN freight. The SOPs clearly outlined the inbound and outbound responsibilities of freight forwarders with respect to verification at origin and destination, independent inspection of the container loading, labeling of each bale at origin, security escorts within Nigeria, and timely information sharing among all stakeholders. At each delivery, the vendor-managed Transport and Security Company conducts count verification with the recipient and a JSI representative. These measures reduced the losses experienced from around $457,000 (8 percent of the value of the shipments) in 2014 to $1,900 (0.09 percent of the value of the shipments) in 2015.

The project also enhanced the capacity of both the state and project logistics officers through training and hands-on exercises to conduct assessment of storage space requirement for LLINs, inventory management of LLINs, LLIN security and safety, campaign logistics requirements, and post-campaign reverse logistics. Proper receipts and documentation, warehousing, and inventory management of the LLINs became satisfactory.

The project supported and participated in the conduct of the national supply chain assessment of all health commodities in 252 HFs, state CMSs, and regional warehouses across 12 states. This assessment measured the supply chain's capability and performance across functional areas at all levels and provides key stakeholders, such as donors, implementing partners, and supply chain managers a detailed quantitative account of a supply chain's performance and maturity. Assessment findings and recommendations will facilitate the decision-making process, performance tracking, root cause analysis, and prioritization of system strengthening activities. Ultimately the assessment will provide required information to support the development of a national supply chain strategy for Nigeria.

The project conducted an orientation/training on the fundamentals of inventory management and commodity accountability for 22 (14 male, 8 female) MOH personnel and project staff to improve inventory management of malaria commodities and record keeping at the CMSs in the 11 PMI focus states.

Project staff provided technical assistance to state CMS officers in conducting monthly stock verification exercise within the PMI focus states to ascertain the stock status and state of malaria commodities in the pipeline and provided visibility into the commodity availability for last-mile distribution to supported facilities.

The inadequate availability of government warehouses at the national and state levels that meet the standards for storage of pharmaceuticals or have sufficient storage capacity led the project to outsource storage to pre-qualified third party logistics (3PLs). Sub-contracting with these specialized entities guarantees transparent and appropriate handling of supplies, and provides a clear standard of what will eventually be required to be provided by government.

Rwanda

In collaboration with the Malaria and Other Parasitic Disease Department (MOPDD), the project conducted the annual physical inventory of malaria commodities December 1–12, 2014. Two teams of data collectors conducted the inventory, capturing stock-on-hand data of malaria commodities for the 580 facilities they visited, including district pharmacies, district hospitals, and health centers. Data were also collected on consumption for the previous three months (September, October, and November 2014), stockouts, and drugs expired in 2014. Almost all of the targeted facilities—580 of 586, or about 99 percent—were visited.

Subsequently, the MOPDD held a data analysis workshop that the project supported technically and financially. The goals of the workshop were to clean and analyze the data collected during the physical inventory exercise. Technical staff from both the project and the malaria program attended the workshop and organized the database to ensure that all data and comments from the physical inventory were captured appropriately. The final report is being drafted by the MOPDD and will be shared with the project when complete.

Tanzania

To enhance accountability within the respective supply chains of Mainland Tanzania and Zanzibar, the project continued advocacy for and support of the supply chain strategic plans that were implemented in the last fiscal year. In the Pharmaceutical Sector Action Plan 2020 and the Zanzibar Supply Chain Action Plan 2014–2017, the improvement of existing oversight and coordination mechanisms were highlighted as key strategies to pursue to strengthen governance and accountability and to creating transparency in terms of political and financial commitments for the pharmaceutical sector. The key interventions that the project has begun to embark on in this fiscal year are operationalization of existing governance and accountability systems at council and health-facility levels; establishing two-way service/performance agreements between MSD, CMS, and districts; and including pharmaceutical management criteria in a results-based financing scheme at the facility level and MSD.

Photo: USAID | DELIVER PROJECT 2015

ACTs at a health facility in Kinondoni District, Dar es Salaam.

In collaboration with the SCMS project, the USAID | DELIVER PROJECT also facilitated the roll out of the mentoring tool kit for best practices in health commodities management and governance to five districts. The intervention is in response to a number of challenges brought forth in the joint health sector review meetings, including frequent stockouts, inadequate district funding, poor coordination of supply chain activities, and inadequate human resource capacity in medicines management and governance.

Zambia

With support from the project, the MOH has been implementing the Essential Medicines Logistics Improvement Program (EMLIP), an intervention to improve availability of medical supplies at facility level. Since its inception to September 2015, people in 75 of 103 districts across the country have been trained. This represents 73 percent national coverage, with district representation from all 10 provinces. From October 2014 to September 2015, the following activities to strengthen the EMLIP system were undertaken:

- Seventy-seven EMLIP trainings were conducted in five provinces: Eastern, Western, Central, Luapula, and Copperbelt.

- Two EMLIP performance assessments were conducted in Southern and Eastern Provinces by the national EMLIP steering committee. The following was observed:
  - Overall product availability was 87 percent in Southern Province, with 100 percent and 94 percent availability of RDTs and ACTs, respectively.
  - Over 70 percent of the facilities in the Southern Province reported accurate logistics data on both the stock control cards and the report for essential medicines and medical supplies.
- A TOT at the central level trained 30 MOH staff, most of whom were district pharmacy in-charges.
- Piloted on-site EMLIP trainings as an alternative and less-costly update training method in five districts; Nakonde, Kasama, Mungwi, Nsama, and Kaputa. Eighty-four facilities were targeted and 176 staff were trained.

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

Country Highlights

Quantification Activities

The project supports routine quantifications and quantification updates in almost all of its countries. Quantifications convene NMCPs and CMS to review available data, make adjustments, agree on assumptions, and develop a forecast and supply plan to keep the program between minimum and maximum stock levels. Each country has its own data source that has its own strengths and weaknesses. Data are collected, analyzed, and adjusted for completeness and quality prior to a forecast. The project has developed a standardized approach to quantification, in which consumption-, services-, and demographic-based forecasts are completed, and PipeLine software used for procurement planning and shipment scheduling. The project intends to coordinate closely with PMI to ensure this approach is implemented consistently across countries.

Photo: John Gikapa, USAID | DELIVER PROJECT 2015

Health Deputy Director Nora Madrigal sharing USAID expectations during the quantification workshop in DRC.

DRC

The project coordinated and led a quantification workshop from April 7–9 to generate malaria commodity requirements for 181 PMI-supported health zones for the FY16 MOP visit. The workshop included 20 participants from the NMCP, National Commodity and Essential Medicines Department (PNAM), Pharmacist Directorate, USAID Mission, Systems for Improved Access to Pharmaceuticals and Services (SIAPS), Implementing Health Partners (IHP), PMI-Expansion Program, Secretary General of MOH, the project, and other USG partners.

Ghana

The USAID | DELIVER PROJECT worked with the national quantification team and the NMCP to complete the 2015 annual quantification for malaria commodities. The exercise resulted in a three-year (2015–2017)

forecast of malaria commodity requirements, and a two-year (2015–2016) supply plan for the delivery of commodities. Malaria commodities covered in the quantification include ACTs, severe malaria medicines, rapid diagnostic tests, bed nets, and sulphadoxine-pyrimethamine (SP).

Additionally, the project supported the NMCP and the Family Health Division of the GHS to conduct a national quantification of commodities for the integrated community case management of malaria, diarrhea, and acute respiratory tract infections. The exercise forecasted commodity requirements from 2015 to 2018 and produced a supply plan for 2015–2016. Commodities covered during the exercise included AS/AQ 25mg/67.5mg (2–11 months), AS/AQ 50mg/150mg (1–5 years), A/L20mg/120mg 1x6 (0–3 years), A/L/20mg/120mg 2x6 (3–8 years), oral rehydration salts, zinc tablets, amoxicillin suspension, amoxicillin tablets, RDTs and rectal artesunate.

The output of the quantifications has been used by MOH and NMCP/GHS to program resource allocations and advise country shipments within the periods specified.

Cambodia

In an effort to improve national quantification capacity, the USAID|DELIVER PROJECT supported a national malaria commodities quantification workshop and a training on the PipeLine supply planning software for selected government staff.

Group work during the quantification workshop in Phnom Penh.
Photo: Chris Warren, USAID | DELIVER PROJECT 2015

Recognizing the need to build national capacity in this area and advocate for a comprehensive process that included all stakeholders, the project held a two-day quantification overview workshop in February 2015 that highlighted the two components of the quantification process—forecasting and supply planning—and discussed best practices in each.

Based on the positive response from donors and partners, the project began planning a national quantification workshop, which was conducted in September 2015. Two project advisors supported the week-long effort that included facilitation of the national malaria commodities quantification workshop and training on the PipeLine software for selected National Malaria Control Program staff.

Malawi

In March 2015, the project assisted NMCP to conduct the annual quantification exercise to prepare the 2015-2017 forecast and supply plan for malaria commodities. Six NMCP staff participated. The results of the quantification workshop—one of the project's activities to build local capacity in quantification—informed the 2016 Malaria Operational Plan (MOP) and upon implementation, it will contribute to improved malaria commodity security for the country.

Mozambique
Together with the NMCP and other implementing partners, the project supported the annual quantification exercise to estimate the country's malaria commodity needs, schedule optimal arrivals of deliveries, and coordinate procurement of malaria commodities across funding sources. The project team worked with governmental partners to collect and review relevant data, and during the quantification exercise project staff and stakeholders reviewed previous years' forecasts and actual consumption data, which they incorporated into estimates of future commodity needs. The project is working to strengthen the Ministry of Health's capacity to lead these national quantification exercises with progressively less reliance on external technical assistance.

Results from annual quantifications were used to inform the procurement process. Involving a range of donors and stakeholders in the quantification has facilitated effective use of resources and ensured that procurements are coordinated across different sources of supply. Shipments are now scheduled across donors to ensure the program maintains stock levels between the established minimum and maximum levels.

Nigeria
The project supported the NMEP in coordinating the 2015 national malaria commodities quantification exercise across the six geopolitical zones. The state-specific forecast for malaria commodities was aggregated to define the 2015–2016 national malaria commodities needs, and the draft quantification report has been shared with all stakeholders.

Rwanda
The project supported the quantification workshop in February and March 2015 that produced a 36-month forecast and a costed 24-month supply plan. The workshop also revealed important information about shipments needed and the funding gap, and was a capacity-building exercise on malaria quantification using the seasonality index, PipeLine software, and MOH staff.

In September 2015, the project supported the quantification review workshop to assess the forecast accuracy of commodities quantified in March 2015, and create the new forecasted consumption and supply plan for September 2015 to December 2017. The workshop also provided the opportunity show MOH staff who had not participated in the March meeting how to make malaria quantifications using seasonality. The project has trained three MOH and MPPD staff to quantify malaria commodity needs, allowing the project to focus more on building the systems required for the quantification to follow best practices.

Zambia
The project, in collaboration with MOH/MCDMCH/NMCC and stakeholders, provided technical and material support for the 2015–2016 Annual National Forecasting and Quantification meeting for antimalarial commodities. Prior to the meeting, a core forecasting and quantification team was constituted and the project conducted pre-quantification orientation and data review meetings with MOH/NMCC and other stakeholders to build MOH/NMCC forecasting and quantification capacity.

The output from the quantification meeting helped formulate the 2015 supply plans and established funding gaps for commodity procurements. The MOH used the gap analysis to mobililize resource to procure commodities and avoid stockouts.

Zimbabwe
The MOHCC, with support from the USAID | DELIVER PROJECT and the SCMS project, conducted the annual national quantification in February 2015. The exercises generated 24-month forecasts and 18-month supply plans for malaria medicines, RDTs, other essential medicines and medical supplies. The malaria medicines quantified were artemtether/lumefantrine combinations, artesunate/amodiaquine combinations, primaquine tablets, clindamycin capsules, artesunate injection and suppositories, as per the new malaria treatment policy. The

supply plans inform procurements funded by the MOHCC and all partners including PMI and GFATM. RDTs, artemether/lumefantrine combinations, artesunate/amodiaquine combinations, artesunate injection and suppositories are adequately funded by PMI and the GFATM NFM in 2015, 2016, and 2017. Funding gaps were identified for SP, primaquine tablets, and clindamycin capsules in 2016 and 2017.

Coordination and Collaboration Groups

Coordination and collaboration groups, or supply chain technical working groups (SCTWGs), are another key activity in which both program staff and supply chain staff participate. These groups convene stakeholders with the explicit purpose of coordination and collaboration in all aspects of supply chain decisionmaking and management. This forum is instrumental for managing commodity-related resources across the programs and ensuring product availability. At these meetings, information on stock status is shared, status of planned shipments discussed, quantification results presented, resources mobilized, upcoming supply chain activities are highlighted, technical capacity building needs identified, and solutions for common supply bottlenecks or challenges are developed.

Liberia

In collaboration with SCMU, the project organized county health team supply chain technical working groups in the five USAID-supported counties—Nimba, Lofa, Bong, Margibi, and Montserrado. The county-level SCTWGs have improved liaisons with NGO partners to cover frequently encountered resource gaps and enabled stakeholders to align their work plans, leading to the elimination of duplications in areas of support. The SCTWGs have clear TORs that allow them to conduct focused and productive meetings.

The activities of the county SCTWG are strengthened by the presence of the project's assigned local technical advisors who provide support to county health teams to improve LMIS data processing at the county depot, inventory management, and SCTWG meeting coordination and documentation.

The outcome from the establishment of the county SCTWG has been improved coordination between CHT and NGO partners supporting different initiatives in the county. Through this mechanism, CHTs have been able to access support in a structured and systematic manner, thereby contributing to their effectiveness in delivering health services in their counties.

Mozambique

In early March 2015, the field support team conducted a five-day quarterly meeting in Maputo with the regional logistics advisors (RLAs) and the ANC LLIN advisors. Participants agreed on the need to build the SCM skills of provincial warehouse staff and provincial HIV/TB/malaria coordinators to reduce their dependence on the RLAs for resolving supply chain problems. Quarterly meeting participants also discussed the need to train provincial-, district-, and health-facility-level staff in the 3rd Edition SOPs, and in response to specific provincial needs and weaknesses, such as the ability to correctly fill out requisition forms. SOP training will focus on inventory control, warehousing and storage, distribution, and supply chain monitoring and evaluation.

Nigeria

As the co-chair of the national procurement supply chain management (PSM) sub-committee, the project provided technical assistance and support to the National Malaria Elimination Program (NMEP) in the facilitation of PSM coordination group meetings in 11 PMI focus states. The project supported the PSM branch of the NEMP to conduct monthly malaria commodities stock verification exercises at the Federal Medical Store (FMS) Oshodi, to ascertain the stock status and national malaria commodities pipeline. This activity provided visibility into Global Fund and World Bank procured malaria commodities that arrive at the FMS. Through this process, the NMEP was alerted on malaria commodities nearing expiry at FMS, which prompted NMEP to move the commodities out of the FMS to the health facilities. The consistent implementation of this activity over

a period of six months with the NMEP personnel has strengthened the abilitly of NMEP and FMS Oshodi staff to continue consistent stock taking and reporting.

The National PSM coordination forum, in collaboration with Alliance for Malaria Prevention (AMP), developed the commodity management audit tool and SOPs for LLINs campaigns. The tool is to ensure transparency and accountability in the conduct of LLINs mass replacement campaigns.

South Sudan

The project in collaboration with MOH, USAID, and other partners organized an emergency medicines fund technical working group (EMFTWG) to convene 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, anti-malaria kits, pipeline information, and in-country distribution of anti-malaria medicines and test kits. Chaired by the MOH, the EMFTWG is a forum to share supply chain information and solicits assistance from various parties, as needed, to ensure seamless distribution of EMF commodities to the CHD level. USAID, DFID, MOH, NMCP, WHO, UNDP, GF, SIAPS, PSI, and implementing partners Inter-Church Medical Assistance, Health Pooled Fund, and Integrated Service Delivery Program are members of the EMFTWG.

Zimbabwe

The project participated in the quarterly procurement and supplies management (PSM) sub-committee meetings, which have the overall mandate to coordinate procurement and supply management activities of the various partners supporting the Ministry of Health and Child Care's malaria, TB, HIV, and other programs. It integrates the coordination functions of the former medicines and medical supplies coordination team and the procurement and logistics sub-committee of the HIV partnership. As the PSM sub-committee was formed fairly recently, it is too early to assess its effectiveness compared to the former arrangement. The integration of the two teams has, however, reduced redundancy because the same supply chain funding and implementing partners previously had to attend two meetings.

Logistics Management Units

Key to building sustainable logistics systems is recognition of and investments in the human resources and the necessary management structures required to effectively and efficiently manage these systems. An LMU is responsible for organizing, monitoring, and supporting all supply chain activities within the logistics system. Through a pattern of continuous improvement, the LMU identifies supply chain problems and develops and implementsinterventions to remedy those problems.

Madagascar

The Directorate of Pharmacy, Laboratory and Traditional Medicines (DPMLT) is responsible for ensuring continuous availability of quality essential medicines, consumables, reagents, etc. in all health facilities nationwide. The Management Division for Health Products has a mandate to allocate and monitor the supply of essential medicines and consumables to all public health facilities including hospitals, and monitor the management of products at all levels of the health system (excluding program/donated commodities). With the intended integration of the management of all health commodities including malaria commodities, there was a need to formally establish an LMU with all the resources required.

The project assisted the Ministry of Public Health to design a LMU. The Ministry of Public Health recognizes that it is essential to have an LMU that can be used to organize, monitor, and support all activities of the national supply chain. During a three-day technical workshop, participants developed drafts of the LMU mandate (strategic and operational), LMU function, job description of each position within the LMU, and organizational chart. While those materials are currently under review within the ministry of health, the MOH through DPMLT

has already appointed a number of staff to the LMU and the project has been working with the designated LMU staff to conduct logistics activities nationwide since January 2015.

Nigeria

The facilitation of PSM coordination group meetings in 11 PMI focus states has fast-tracked the establishment of logistics management coordinating units (LMCU) in all PMI-supported states. The LMCU coordinates health supply chain activities at the state/national level and ensures the sustainability of the health supply chain interventions provided by donors through their different implementing partners. Ultimately, the LMCU will be the arm of the government that will liaise with donors to harmonize supply chain activities to inform national strategic direction of public health programs in the country.

These PSM coordination forums and the LMCU provided the opportunity for stakeholders supporting different health programs/interventions to harmonize health commodities logistics data collection, identify supply chain challenges, and proffer solutions to improve end user access to health commodities.

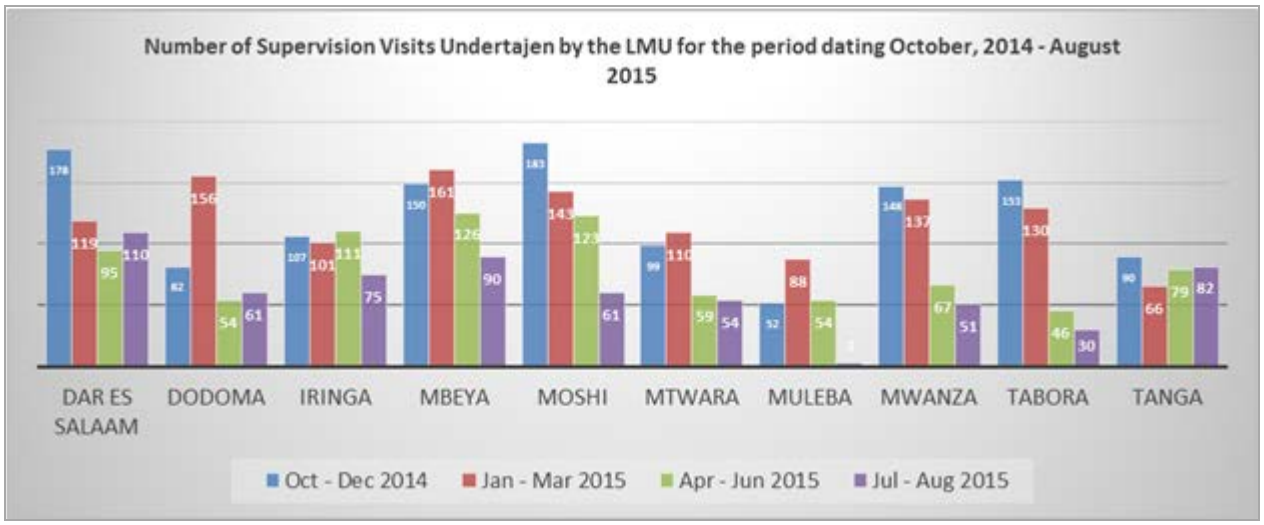
Tanzania

The ultimate sustainability and transition plan for the project's supply chain management interventions in the country will be accomplished by LMU activities. The LMU is responsible for organizing, monitoring, and supporting all supply chain activities for all health commodities logistics systems. Its main focus is to increase the visibility of logistics data, coordinate supply chain and commodity resources, and strengthe the supply chains for all health commodities.

This year, LMU activities have been linked to the country's Big Results Now initiatives, which focus on improving governance and accountability, increasing the sense of ownership of health commodities supply chain initiatives, strengthening data visibility, and implementing the toolkit for best practice in health commodity management, governance, and financing. This is an initiative developed by the MOHSW in collaboration with partners to enhance sufficient, reliable, and sustainable health services.

Three quarterly meetings have been held within the period under review to ensure that the team is progressing with its vision. LMU interventions aim to improve commodity management in health facilities and cover five logistic areas: storage, record-keeping, reporting and ordering, commodity availability, and human resources. In collaboration with the LMU team and regional and council health management team, the project facilitated supervisory visits to 3,844 health facilities, representing 64 percent of the total health facilities in Tanzania (see figure 20 below).

Figure 20. Number of Health Facilities Visited between October 2014 and August 2015, Tanzania



The project also facilitated re-distribution of medicines to health facilities that needed them. For the period dating December 2014 to July 2015, a total of 51 redistributions of antimalarials and essential medicines valued at $214,259 were made.

For the first time in the project's life, the LMU team accessed seven hard-to-reach health facilities located along the Lake Tanganiyika in Kigoma District.

Strategically, the project has collaborated with Tanzania's MOHSW to elevate the pharmaceutical services sector unit to a directorate through the development of 97 job listings, including 60 positions within the LMU. As of May 2015, the former pharmaceutical services sector unit was officially instituted as a directorate known as the pharmaceutical services unit.

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

Core-Funded Activities

Support the USAID Supply Chain Management Course

The USAID | DELIVER PROJECT regularly provides new USAID professionals with introductory training in supply chain management through a week-long course. The existing curriculum provides participants with a general introduction to basic logistics concepts, and touches on aspects of supply chain management and commodity security particular to malaria commodities. During FY15, TO Malaria supported two of the overview of supply chain management courses by providing updates on malaria-specific supply chain issues to be incorporated into the curriculum, participating in the "commodity showcase," facilitating group work, and answering participants' questions about malaria. The TO also shared key malaria guidance, such as the Guidelines for Managing the Malaria Supply Chain. In July 2015, TO Malaria also provided support to a new course, Emerging Trends in Supply Chain Management for Health Commodities, for participants who had already taken the overview course. This advanced course included sessions on supply chain multiplicity, business intelligence analytics, the role of the private sector, and supply chain costing.

Country Highlights

Democratic Republic of Congo

In November and December, the project facilitated two six-day trainings of SCM of health commodities for 19 participants from the central level and 17 participants from the provincial level who work for the NMCP, PNAM, public-private federation of drug stores, and other national programs such as the Expanded Program on Immunization (EPI), PNSR, National Program for Combating Tuberculosis, and PNLS. Many improvements, especially in the LMIS area, are still needed. Lack of essential logistics data and low reporting rates persist throughout the system. Much of the training was dedicated to LMIS and inventory management, with the intention of supporting these improvements. Sessions included sharing experiences and best practices among programs at the central- and provincial-levels.

Photo: USAID | DELIVER PROJECT, 2014

Central-level officials participate in a simulation exercise during training in DRC.

The two most important outcomes of this training were the development of some key indicators for the monitoring and evaluation of the supply; these were used later by participants to formulate related action plans. On the post-training competency self-evaluation taken by 34 of the 36, all participants indicated that they are able to determine MOS at the central- and lower-levels of their supply chain; 29 of 34 could describe health commodity security and the role of a logistic system in ensuring the latter; and 26 of the 34 could identify the main components of an LMIS, analyze an LMIS, and make recommendations for improvements for an LMIS. The remaining 8 of 34 said they could do this with limited assistance.

Ghana

As part of MOH's efforts to introduce PST in SCM in schools of pharmacy nationwide, the project conducted a TOT workshop for 13 lecturers at the School of Pharmacy, University of Ghana. The training equipped the lecturers with an understanding of the fundamentals of logistics management and commodity security to enable them teach modules on health commodities supply chain to their students using a curriculum based on adult education theories and practices.

The University of Ghana School of Pharmacy commenced the teaching of supply chain modules in the 2014/2015 academic year and has joined School of Pharmacy of the Kwame Nkrumah University of Science and Technology and Central University College, which are teaching SCM courses as part of their regular curriculum. Additionally, the project supported the Nurses and Midwifery Council and MOH to conduct QA testing on the teaching and learning of SCM courses in 60 selected nursing and midwifery colleges. Findings from the exercise indicate a successful roll-out of the course in a majority (90 percent) of the institutions visited without any challenges or constraints. The institutions recommended continuous monitoring and regular communication of directives on the course by the NMCP to ensure sustainability.

The project supported the GHS to conduct training in warehouse de-junking and re-organization to equip warehouse managers with the requisite tools and skill to optimize warehouse space management. The exercise benefited 123 (95 males and 28 females) warehouse managers from 66 selected district hospitals and all 10 regional medical stores (RMSs). Participants engaged in practical exercises during which junk, damaged, and expired/near-expiry products were removed and quarantined. Additionally, inventory records were updated and warehouse facilities cleaned to create additional space. This effort is expected to increase the available useable storage space, mitigate fire risks, and improve space management at the RMSs and district hospitals. The project will work with the GHS to monitor the implementation action plans that participants developed.

The USAID | DELIVER PROJECT partnered with the MOH and GHS to improve the performance of the health commodity supply system through monitoring and supervision visits to 240 randomly selected health facilities, including seven regional medical stores in the period under review. Supportive supervision provides opportunities for health facilities and supervisors to review supply chain management tasks, provide guidance and feedback to reinforce good practices, and identify gaps and challenges for program planning and interventions. This results in improved knowledge and skills of health commodity to conduct SCM tasks, thus promoting commodity security.

The exercise focused on monitoring stock status of key malaria and other program commodities and inventory management practices. Where needed, the supportive supervision team conducted on-the-job training to commodity managers to strengthen inventory management practices to ensure availability of health commodities to improve health care delivery. Based on key findings, commodity managers in each of the health facilities visited were guided to develop an action plan for improvement. The results of the exercise are shared through activity reports and regional debriefings to highlight key findings and expected areas of improvement.

Nigeria

The project seconded a full-time procurement and supply chain (PSM) advisor to NMEP to provide technical assistance on core supply chain functions and enhance capacity improvements in the logistics competence of key officers within the PSM branch of NMEP. The PSM advisor developed an organogram and job descriptions for Global Fund PSM personnel. The PSM advisor helped NMEP train 10 contracted 3PLs on the tools required for the management of malaria commodity distribution process under the Global Fund New Funding Mechanism (NFM).

Furthermore, 35 PSM leads of the Global Fund new sub-recipients were trained on Malaria Commodity Logistics System (MCLS) SOPs, monitoring and supportive supervision tools, and tools for developing and managing malaria commodities distribution. The outcome was that PSM focal persons are ready to coordinate NFM activities in the states, including roll out of cascade training on MCLS.

Photo: USAID | DELIVER PROJECT, 2015

MTP sessions review warehouse and inventory controls in Rwanda

Rwanda

In collaboration with the Ministry of Health, the project organized a workshop at Bethany Investment Group in Karongi from July 20th to 24th, 2015 to develop the SOPs on quantification of health commodities. The workshop was organized such that each category of commodities

(malaria, MCCH, HIV/AIDS drugs, HIV/AIDS laboratory, TB drugs, non-HIV laboratory commodities, and non-program essential medicines) had a team working on the development of its SOPs. By the end of the workshop, draft SOPs for each category of commodities were developed. The next step will be to review the draft SOPs and to organize a SOPs validation workshop with the Ministry of Health and stakeholders. It is expected that the SOPs will ensure the transfer of capacity from the field office to the government counterparts to ensure sustainable security for malaria commodities and country ownership of the quantification process.

Continuous capacity building through mentorship, supervision, and performance measurement was provided to ensure sustainability of a coordinated and integrated supply chain for health commodities. In collaboration with the Ministry of Health, the project supported monitoring, training, and planning (MTP) sessions that covered key supply chain functional areas such as warehouse and inventory control, quantification, transportation, eLMIS, and performance measurement and improvement to ensure that products are available to end users at the right time. Each MTP session included the review of the use of eLMIS, reports, and overall functioning and utilization of the system. This also contributes to the availability of timely and accurate data for policy and decision making. Materials like the supportive supervision tool and DPs operational manuals were also developed during MTP sessions.

Zambia

The project has provided targeted support to NMCC to increase its ability to manage central-level malaria commodities and to ensure commodity security at the facility level. The objective of this effort is to build capacity of the logistics and the malaria case management officers to execute specific functions that promote commodity security. Apart from sending staff to a formal logistics and forecasting and quantification training, the project provided one-on-one sessions on pipeline management; focusing on monitoring central-level stock status of malaria commodities, shipment tracking, and procurement plan fulfilment monitoring. Other tasks include forecasting and quantification for malaria commodities and supply plan development. This also included conducting gap analysis to establish additional funding for unmet need, and involved coaching NMCC staff in forecasting and quantification to build their capacity in data analysis in preparation for the forecast.

Table 5. PMP Indicators for Objective 2, October 1, 2014–September 30, 2015

Support area	Operational area	Indicator	Status
Monitoring of in-country supply chain performance	Providing information about in-country supply chain performance	Facility stockout rate: % of facilities that had a stockout of a product expected to be provided or issued by that site on the day of the visit	See appendix H
		Country stockout rate: % of countries with a stockout at the central warehouse(s) at the time of reporting	See appendix H
		Functioning LMIS: % of countries where an LMIS routinely collects and reports stock status data (i.e., stock on hand and consumption data) from all SDPs in the country	**7/12 = 58%** For a full list of the countries and further explanation about the LMIS, see appendix H.
STTA	Respond to STTA needs as per Mission request to strengthen in-country SCM for	Timely response to ad hoc TA needs: % of STTA trips per Mission/PMI Washington ad hoc request conducted on time	**Total:** 1/1* = 100% *RDMA travel

Support area	Operational area	Indicator	Status
	antimalarial commodities		
Long-term TA	In-country supply chain strengthened or improved	Quantity of antimalarial commodities (LLINs, SP tablets, ACT treatments, RDTs) distributed in-country using funds obligated to the USAID | DELIVER PROJECT	Angola: -1,905,750 treatments ACTs -112,000 RDTs -180 MMKs -2 microscopes Burkina Faso: N/A—The USAID-funded malaria commodities are distributed in-country using government funds Burma/Myanmar: 417,900 Burundi: -779,450 LLINs routine distribution -13,314 sold through social marketing program Cambodia: 0 DRC: -1,718,300 LLINs -26,550,000 SP -4,922,955 ACTs -10,875,000 RDTs Artésunate suppo 200mg: 10,560 Artesunate injection 60mg: 822,500 Quinine injection 600mg: 700,000 Quinine tablet 300mg: 9 540,000 Ghana: -3,745,630 ACT treatments -1,440,700 LLINs -2,700,000 RDTs -54,900 rectal artesunate -450,702 art. injectable Guinea: -22,723 RDTs -659,075 treatments ACTs -58,900 tablets SP Laos: 0 Liberia: -2,073,525 ACT treatments -1,091,000 SP tablets -1,103,575 RDTs

Support area	Operational area	Indicator	Status
			-173,350 LLINs Madagascar: -450,000 SP tablets -28,575 blister packs ACTs -1,956,171 RDTs Malawi: -6,732,270 ACT treatments -7,901,250 RDTs -2,115,000SP tablets Mali:* - 2,800,000 LLINs -1,370,124 ACTs treatments -2,000,000 RDTs -5,400,000 tablets SP - 400,000 vials art. inj. *Other than LLINs, quantities for Mali represent shipments arrived only. Mozambique: -5,912,430 ACTs -12,172,650 RDTs -1,811,600 LLINs Nigeria: -12,083,803 LLINs -4,504,900 SP tablets -11,294,254 ACTs -4,225 art. injectable -2,699,975 RDTs Rwanda: -1,876,001 ACT treatments -106,526 art. injectable -489,810 RDTs -1,382,050 LLINs South Sudan: -350,000 LLINS -4,015,460 ACT treatments -1,728,600 SP tablets -292,680 artemether injection 20mg/ml, ampoule -146,340 artemether injection 80mg/ml, ampoule -394,800 ampoule quinine dihydrochloride inj. 300mg/mL -1,637,000 quinine sulphate

Support area	Operational area	Indicator	Status
			300mg film-coated tablets -2,690,600 RDTs Tanzania: N/A Uganda: N/A Zambia -LLINs 1,865,000 Zimbabwe :* -772,352 ACT treatments -1,820,061 RDTs -1,142,595 SP tablets -624,030 quinine tablets -71,279 ampoules of quinine injection *Quantities for Zimbabwe are not 100% attributable to the USAID | DELIVER PROJECT
		% of countries receiving field support TA funds reporting on supply chain performance via EUV activity	**9/18 = 50%** Burkina Faso: yes Burma/Myanmar: no Burundi: no Cambodia: no DRC: no (implemented by SIAPS) Laos: no Liberia: yes Ghana: yes Guinea: no (implemented by SIAPS) Madagascar: no Malawi: yes Mozambique: yes Nigeria: yes Rwanda: no South Sudan: no Tanzania: yes Zambia : yes Zimbabwe: yes For further explanation, see appendix H.
		Number of individuals trained in the SCM of malaria commodities	**TOTAL: 11,449** Burkina Faso: 2 Burma/Myanmar: 2 Burundi: 785

Support area	Operational area	Indicator	Status
			Cambodia: 24 DRC: 69 Ghana: 180 Guinea: 0 Laos: 139 Liberia: 1.631 Madagascar: 0 Malawi: 59 Mozambique: 479 Nigeria: 674 Rwanda: 30 South Sudan: 21 Tanzania: 5,775 Zambia: 1,554 Zimbabwe: 25
		% of countries with field support TA funds reporting central-level stock levels of selected malaria products in PPMRm	**13/17 = 76%** Burkina Faso: yes Burma/Myanmar: yes Burundi: no DRC: yes Ghana: yes Guinea: no Laos: yes Liberia: yes Madagascar: no Malawi: yes Mozambique: yes Nigeria: yes RDMA: yes Rwanda: no Tanzania: yes Zambia : yes Zimbabwe: yes
		Functioning coordination committee: % 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)	**TOTAL: 17/18 = 94%** Burkina Faso: yes Burma/Myanmar: yes Burundi: yes Cambodia: no DRC: yes Ghana: yes Guinea: yes Laos: yes Liberia: yes Madagascar: yes

Support area	Operational area	Indicator	Status
			Malawi: yes Mozambique: yes Nigeria: yes Rwanda: yes South Sudan: yes Tanzania: yes Zambia: yes Zimbabwe: yes
		Available supply plans: % of countries that have developed supply plans for PMI-funded commodities	**TOTAL: 13/18 = 72%** Burkina Faso: yes Burma/Myanmar: no Burundi: yes Cambodia: no DRC: no Ghana: yes Guinea: yes Laos: no Liberia: yes Madagascar: yes Malawi: yes Mozambique: yes Nigeria: yes Rwanda: yes South Sudan: no Tanzania: yes Zambia: yes Zimbabwe: yes
		Number of technical reports or tools developed to support malaria supply chain performance	**TOTAL: 80** Burkina Faso: 4 Burma: 0 Burundi: 2 Cambodia: 2 DRC: 21 Ghana: 3 Guinea: 0 Laos: 5 Liberia: 2 Madagascar: 2 Malawi: 1 Mozambique: 3 Nigeria: 4 Rwanda: 5 South Sudan: 3 Tanzania: 11

Support area	Operational area	Indicator	Status
			Zambia: 8 Zimbabwe: 4

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 to advance the malaria agenda. The board identified a transition oversight committee to support this process and report recommendations to the board in December 2015. As part of the process, RBM is closing its secretariat by the end of December 2015 until the new structure is determined. TO Malaria has been an active member of the procurement and supply chain management working group (PSMWG); the malaria in pregnancy working group (MIPWG); and the vector control working group (VCWG).

The PSMWG was established by the board in April 2007 to convene and coordinate partners to address procurement and supply chain issues related to malaria control. The project prepared updates on the LMIS workstream activities for the May 2015 PSMWG meeting. TO Malaria also made suggestions for future role of the PSMWG as input into the RBM restructuring efforts. This working group has temporarily suspended activities until the new RBM structure is in place.

The project attended the VCWG annual meeting in January. 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. At the meeting, the technical advisor focused on the continuous distribution and net durability work stream meetings. This working group is continuing activities during the RBM transition period.

During the reporting period, TO Malaria participated in several MIPWG meetings. The role of the MIPWG is to provide the RBM partnership with strategic advice on best practices for scaling up interventions for the prevention and control of malaria during pregnancy to achieve RBM targets and broader development goals. The MIPWG is continuing activities during the RBM transition period.

The project attended MIPWG annual meeting in July 2015 and made two presentations:

- Community supply chain: given that the MIP community is considering extending IPTp services to the community, this presentation conveyed lessons from recent community supply chain interventions, and highlighted some of the potential challenges of community-delivered IPTp. The presentation included community mHealth activities under DELIVER and general community-level supply chain activities under SC4CCM.
- SP stock status: blinded SP stock data were presented for 10 PMI countries, including central-level stock status from PPMRm and facility stockout data from EUV exercises. While each country has a significantly different context for the challenges it faces, there are some overarching challenges in SP availability that can be explored on a regional level.

TO Malaria also participated in a MIPWG meeting held during the tropical medicine conference in New Orleans, Louisiana, in the U.S., and the project participates in MIPWG conference calls.

Alliance for Malaria Prevention

As a partner in the Alliance for Malaria Prevention (AMP) the project collaborates with government agencies, private sector businesses, and public-sector, faith-based, and humanitarian organizations to support work to scale up LLIN ownership and use and to build national capacity to control malaria. In January 2015, technical advisors from the U.S. and Nigeria attended the AMP annual meeting, at which partners listen to and share their collective efforts to help countries reach their respective RBM targets through increased LLIN ownership and use.

At the AMP, meeting the project's advisor from Nigeria presented on the level of effort required to operate LLIN campaigns there. The U.S.-based advisor also provided an update to the emerging issues working group (EIWG), which supports AMP by identifying and addressing emergent issues related to scaling up LLIN ownership and use before, during, and after mass distribution campaigns. TO Malaria also participates in quarterly teleconferences of the EIWG.

WHO/Global Malaria Program Consultation on Malaria Rapid Diagnostic Tests Harmonization and Implications for Procurement Recommendations

TO7 participated in the RDT harmonization consultation. Over the last two years, WHO/GMP in collaboration with RBM and other technical groups (Institute of Tropical Medicine and Antwerp) has been working on the comparability of malaria RDTs in terms of design, packaging, labeling, and instructions for use, as well as the diagnostic procedures such as blood volume and buffer packaging. This effort to harmonize the malaria RDTs available in the market will reduce the cost of training health workers and will facilitate malaria RDT procurement. The working group published a report, http://www.rollbackmalaria.org/mechanisms/psmwg.htlm in December 2013. An amended version is also available at http://www.malariajournal.com/content/13/1/505.

The objective of the meeting was to define which of the recommendation listed in the past publications would be included in the WHO malaria RDT procurement criteria requirements, and how to implement these new harmonized specifications.

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

Analysis of Malaria Market

TO 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 that 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. We also completed an analysis of SP and RDTs. The project continues to update these analyses with current market information.

Address the Global Shortage of the SP/AQ Co-Blister

In response to a 2012 recommendation by WHO of SP/AQ in seasonal malaria chemoprevention in children five and under in the Sahel region, global demand rapidly increased. However, due to the global supply shortages of SP/AQ co-blister tablets, UNICEF convened a conference call February 18, 2015 inviting the main

stakeholders to discuss options to address the shortage of the SP/AQ co-blister. This product has only one WHO pre-qualified vendor, which had active pharmaceutical ingredient (API) problems and so could not meet global demand for SP/AQ. During the call it was agreed that WHO would send out an information note asking that countries prioritize SMC coverage in areas that had been served previously and to consider procuring loose tablets of SP and AQ given the shortage of the co-blister. The project participated in the call and provided key information to WHO to include in the information note. During the call, *Medicines sans Frontiers* (MSF) said that it was hosting a meeting on SMC and invited TO7 to participate. The meeting was held on February 25th and 26th at the MSF facility in Geneva. The objectives were to evaluate the situation of the SP/AQ global demand and supply and review the current SMC projects. The project participated in the first day of the meeting.

Table 6. 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	7 (AMP meeting, VCWG meeting, 2 MIPWG meetings, PSMWG meeting, MSF SMC meeting, and the WHO RDT harmonization meeting)

Performance Monitoring

TO7 monitors performance using a set of indicators outlined in the PMP and detailed in the QA 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 A through K.

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

Other, less-formal methods for performance monitoring and management 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 conducts a country-by-country review of all ongoing procurement actions and updates their status on the current actions table, which is available every week to all PMI and project managers.

Implementation Challenges and Solutions

During the past 12 months, the project has faced several implementation challenges that it has addressed in a variety of ways. The overarching challenge has been to actively manage transition planning. As the project was originally scheduled to end in September 2015, an extensive plan to manage both procurements and technical activities had been put in place. However, the project was granted a one-year extension through September 2016, bringing about significant changes in procurement and work planning. The project continues to actively manage this transition.

Managing project transition and close-out

As the project enters its final year, planning for and managing a smooth transition to the new mechanism, GHSC, remain a priority. On the procurement side, all commodity delivery dates are being monitored to ensure that goods' available dates are met whenever possible, but funding availability poses a significant risk to the project's ability to place several critical orders. The project continues to work with PMI on funding priorities.

On the technical assistance side, the home and field offices are working 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 include what to do with product remaining in project warehousing at closeout, and the need for uninterrupted distribution of product during the transition period. Staff retention is a risk throughout the TO team during this time.

Implementing USAID's open data policy

The project has been working closely with PMI to understand how the new open data policy will be implemented and what data is implicated. As much of the data captured, generated, and analyzed by the project is considered highly sensitive by Ministries of Health, there has been some challenge in understanding how best to responed to USAID while respecting host governments' policies and guidelines regarding use of and access to their data.

Improving risk mitigation and commodity management

Over the last six months, the project has noted fewer reports of product loss. The project has worked steadily to mitigate risk across country platforms and commodity types in a variety of ways. Efforts in Nigeria in particular have proven successful: a tightening in the chain of custody implemented in December 2014–January 2015 has improved product security to date.

Lobbying for procurement of fixed-dose combination artesunate mefloquine for treatment of resistant malaria

In response to the growing dihydroartemisinin-piperaquine (DHA-PIP) resistance, the Cambodian National Center for Malaria Control, Parasitology and Entomology (CNM) revised the National Treatment Guidelines for Malaria to introduce fixed-dose combination artesunate/mefloquine (FDC AS/MQ) as the first-line treatment for uncomplicated malaria in provinces where DHA-PIP was failing to achieve acceptable cure rates. However, when the country implemented this policy change, PMI and the Global Fund were not able to procure the specific adult and pediatric formulations of FDC AS/MQ in required quantities due to an overall limited global

demand for FDC AS/MQ, coupled with a high minimum order quantity of 1 million tablets required by Cipla (the only stringent regulatory approved/WHO pre-qualified manufacturer of the FDC AS/MQ).

The project contacted multiple global procurement agencies and manufacturers seeking opportunities to combine orders to increase the volume for production and to identity other manufacturers that might have smaller minimum order quantities. The WHO/Emergency Response to Artemisinin Resistance and the WHO Global Malaria Programme were also engaged to raise the profile of this challenge.

Proactive communication and advocacy by the project and pressure from the donor community were instrumental in Cipla's decision to start a production run of AS/MQ without the full batch size orders in place. In turn, Cipla requested support from the international community to liquidate the excess quantities of its next production run through consolidation of future orders from Cambodia and other countries using this product.

Responding to the fire at Ghana Central Medical Stores

In early 2015, a major fire at the Ghana Central Medical Stores destroyed significant quantities of essential health products (including antimalarials) and the warehouse itself. As part of emergency response efforts, the project supported an assessment of the options for storage and distribution of product. The resulting report explored potential challenges and mitigation measures for each of the options, including effective de-junking of regional stores, rational prioritization of products to be stored, improving data visibility, and standardization of RMS' peripheral distribution schedules. The project partnered with the private sector to warehouse and distribute commodities from the central level to the RMSs and the teaching hospitals. More recently, the project collaborated with the Global Fund to implement coordinated distribution of malaria and other commodities from central to regional levels.

Supporting Guinea's malaria commodity needs

As efforts to control the Ebola epidemic in West Africa persist, Guinea continues to struggle with Ebola's effect on malaria commodity consumption. The impact of the Ebola epidemic is still felt on the health system, where uptake of services has not yet normalized. As such, Guinea has requested that several malaria commodity orders placed with the project be either canceled or delayed. The project continues to work with the in-country team to manage the commodity pipeline and find alternate recipients for unwanted product.

Implementing seasonality and supply planning in Rwanda

The traditional approach to supply planning is to calculate the annual forecast consumption and divide by 12, which yields an average monthly consumption (AMC) rate. Using a standard AMC for shipment scheduling for seasonal products can cause overstocks in the dry season and stockouts in the rainy season. An alternative is to develop a seasonality index to apply to forecast consumption, which will produce a monthly consumption that accounts for seasonal variation. In Rwanda, the project assisted in the development of a seasonality index as part of the annual malaria quantification. Rwanda had several months of quality consumption data with high reporting rates and relatively low stockout rates. These historical data were used to create a seasonality index, which was then applied to the monthly forecast consumption. Shipments were planned to arrive prior to the peaks in ACT consumption.

Aligning forecasting and consumption trends in Nigeria

In Nigeria, the project supports the National Malaria Elimination Program (NMEP) to conduct the national malaria quantification. Due to an overall lack of both services and consumption data at the central level, national morbidity-based forecasts are developed. Over the last few years a disconnect has developed whereby program targets are being ambitiously applied to forecasts in spite of indications from the limited available logistics data that there is little evidence to substantiate the projections. An example of this is the contrast between the projected and actual consumption of RDTs: three RDTs are projected to be used per ACT, but actual data

points toward the reverse of three ACTs being used per RDT. This leads to an inaccurate supply plan that underestimates ACT requirements and overestimates RDT needs.

The project is working with the NMEP to address this challenge. The project is working to inform accurate forecasting through bimonthly collection of state-wide malaria logistics data irrespective of donors in all PMI-supported states. At the same time, the Global Fund is in the process of hiring logistics advisors so that GF-supported states can do the same. The project ensures that RDTs are available in supported HFs.

The project has also increased availability of logistics data tools across all the states in Nigeria, while Malaria Action Program for States (MAPS) is intensifying training of health care providers on the use of RDTs for malaria diagnosis before treatment with ACTs. MAPS is also providing mentorship programs for HCPs, as well as behavior change communications training.

Managing malaria commodity distribution—warehousing and transportation

Storage facilities for health commodities in almost all states are in bad condition because of poor initial design, lack of maintenance, and inadequate warehousing equipment. The integrity and quality of malaria commodities in most cases are compromised. In addition, the inventory management of health commodities at the warehouses is poor. From time to time, commodities expire in CMS due to lack of funds to move products to the health facilities, leading to wastage.

The project has supported NMEP in malaria commodity distribution through training and mentorship. Currently the Global Fund through the New Funding Mechanism is funding 3PLs to transport commodities from CMS to the health facilities, while GF sub-recipients have been contracted to support the management and distribution of malaria commodities in 24 states of Nigeria.

Political turmoil disrupts field office operations

An unstable election season in Burundi disrupted project activities throughout the spring and summer of 2015, culminating in several short-term office closures in Bujumbura during periods of insecurity. As such, routine supervision and project monitoring visits to the field were curtailed and LLIN demand slowed. The elections are now completed and the situation is returning to normal, with a notable increase in the demand for socially marketed LLINs.

Meanwhile, a coup in Burkina Faso in September resulted in short-term office closures in Ouagadougou. The situation is still developing but may impact field office activities moving forward.

Sulfadoxine-pyrimethamine/amodiaquine and rectal artesunate

The USAID | DELIVER PROJECT is facing significant challenges in the procurement of sulfadoxine-pyrimethamine/amodiaquine (SP/AQ) and rectal artesunate (RA).

The global demand for RA has been increasing over the last three years. There is only one supplier, Acino

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

Taking SP for IPTp during an ANC visit at Eduardo Mondlane Health Center in Chimoio, Mozambique

Pharma, located in Switzerland. In addition to the global demand increase, the manufacturer has experienced serious delays in the production of RA. Acino Pharma faced challenges to obtain the API to produce the RA, and then they did not have the production capacity to respond to the increasing demand. Consequently, the production lead time has increased from 4 to 7 months after order placement. Further down the supply chain, RA from Acino Pharma is not registered in all PMI countries, which makes it more difficult and time-consuming to obtain importation waivers. One solution was to procure a certain quantity of RA for stockpiling.

As mentioned, several countries across the Sahel region of Africa are implementing seasonal malaria chemoprevention by administering the SP/AQ co-blister to children between 3 to 59 months. This prevention campaign has further strained the limited supply of SP/AQ. At present, the only WHO-prequalified product is manufactured by Guilin in China. This manufacturer has API supply challenges because its main source of sulfadoxine has stopped its activities. Guilin is planning to produce its own API but that requires the WHO prequalification, which could not be obtained before the end of 2015.

The USAID | DELIVER PROJECT had already placed orders of SP/AQ for Senegal and Mali with an original delivery date of March 2015 that was postponed until the second half of 2015. To be effective, this prophylactic must be administered before the rainy season, which is why the deliveries were postponed once it was understood they would not arrive in-country ahead of the rainy season. The project was able to procure loose SP and AQ from other manufacturers, and delivered them to Senegal and Mali before the beginning of the rainy season.

Appendix A. Commodities Procured October 1, 2014–September 30, 2015

Commodities Procured October 1, 2014 - September 30, 201!

Item Description	Country	PO Date	Sub Category	PO#	Order Quantity (Packs)	Order Quantity (Tx)	Total Commodity Value
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Angola	04-Sep-2014	ACT	PO-PUP-1785	5,325	159,750	$ 67,095.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Angola	30-Dec-2014	ACT	PO-PUP-2073	8,505	255,150	$ 94,405.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Benin	24-Sep-2014	ACT	PO-PUP-1822	9,525	285,750	$ 120,015.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Benin	08-Oct-2014	ACT	PO-PUP-1848	9,525	285,750	$ 105,727.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Burkina Faso	10-Sep-2014	ACT	PO-PUP-1795	16,680	500,400	$ 210,168.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Ghana	27-Oct-2014	ACT	PO-PUP-1914	17,460	523,800	$ 193,806.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Guinea	30-Sep-2014	ACT	PO-PUP-1839	6,000	180,000	$ 75,600.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Guinea	02-Mar-2015	ACT	PO-PUP-2147	1,755	52,650	$ 24,745.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Malawi	28-Aug-2014	ACT	PO-PUP-1775	16,185	485,550	$ 228,208.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Malawi	28-Aug-2014	ACT	PO-PUP-1776	16,185	485,550	$ 228,208.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Malawi	12-Nov-2014	ACT	PO-PUP-1935	13,710	411,300	$ 193,311.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Malawi	11-Feb-2015	ACT	PO-PUC-2031	19,886	596,580	$ 223,717.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Mali	12-Nov-2014	ACT	PO-PUP-1934	11,670	350,100	$ 129,537.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Mali	05-Feb-2015	ACT	PO-PUC-2029	13,334	400,020	$ 150,007.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Mozambique	30-Dec-2013	ACT	PO-PUP-1591	18,225	546,750	$ 202,297.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Mozambique	12-Sep-2014	ACT	PO-PUP-1802	20,010	600,300	$ 252,126.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Mozambique	04-Dec-2014	ACT	PO-PUP-2017	27,315	819,450	$ 385,141.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Mozambique	04-Dec-2014	ACT	PO-PUP-2018	17,430	5,281,290	$ 219,618.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Myanmar	12-Sep-2014	ACT	PO-PUP-1803	30	900	$ 333.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Myanmar	22-Sep-2014	ACT	PO-PUP-1820	30	900	$ 378.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Myanmar	06-Jul-2015	ACT	PO-PUP-2207	90	2,700	$ 1,269.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Netherlands	09-May-2014	ACT	PO-PUP-1731	15,840	475,200	$ 175,824.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Netherlands	09-May-2014	ACT	PO-PUP-1732	15,840	475,200	$ 175,824.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Netherlands	27-Jun-2014	ACT	PO-PUC-1594	9,300	279,000	$ 103,230.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Netherlands	27-Jun-2014	ACT	PO-PUC-1595	9,300	279,000	$ 103,230.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Netherlands	27-Jun-2014	ACT	PO-PUC-1596	9,300	279,000	$ 103,230.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Netherlands	07-Aug-2014	ACT	PO-PUP-1772	15,840	475,200	$ 175,824.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Netherlands	07-Aug-2014	ACT	PO-PUP-1773	15,840	475,200	$ 175,824.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Netherlands	09-Sep-2014	ACT	PO-PUC-1654	9,675	290,250	$ 107,392.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Netherlands	09-Sep-2014	ACT	PO-PUC-1655	9,675	290,250	$ 107,392.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Netherlands	23-Sep-2014	ACT	PO-PUC-1671	9,300	279,000	$ 103,230.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Netherlands	23-Sep-2014	ACT	PO-PUC-1672	9,300	279,000	$ 103,230.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Netherlands	23-Sep-2014	ACT	PO-PUC-1673	9,300	279,000	$ 103,230.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Netherlands	12-Dec-2014	ACT	PO-PUC-1897	9,300	279,000	$ 103,230.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Netherlands	12-Dec-2014	ACT	PO-PUC-1898	18,600	558,000	$ 206,460.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Netherlands	13-Aug-2015	ACT	PO-PUC-2113	9,300	279,000	$ 103,230.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Nigeria	24-Jul-2014	ACT	PO-PUC-1610	14,995	449,850	$ 168,693.75
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Nigeria	23-Sep-2014	ACT	PO-PUC-1674	33,333	999,990	$ 374,996.25
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Nigeria	23-Sep-2014	ACT	PO-PUC-1675	26,667	800,010	$ 300,003.75
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Rwanda	24-Sep-2014	ACT	PO-PUP-1823	1,830	54,900	$ 25,803.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Rwanda	24-Sep-2014	ACT	PO-PUP-1824	2,340	70,200	$ 32,994.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Rwanda	01-Jul-2015	ACT	PO-PUP-2200	11,280	338,400	$ 159,048.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Senegal	02-Sep-2014	ACT	PO-PUP-1782	405	12,150	$ 5,710.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Senegal	02-Sep-2014	ACT	PO-PUP-1783	1,020	30,600	$ 12,852.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Senegal	02-Sep-2014	ACT	PO-PUP-1784	615	18,450	$ 6,826.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Tanzania	26-Nov-2014	ACT	PO-PUP-1978	3,405	102,150	$ 48,010.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Uganda	02-Sep-2014	ACT	PO-PUP-1780	4,515	135,450	$ 56,889.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Zimbabwe	28-Aug-2014	ACT	PO-PUP-1774	3,150	94,500	$ 44,415.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Zimbabwe	24-Sep-2014	ACT	PO-PUP-1821	3,720	111,600	$ 41,292.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Angola	04-Sep-2014	ACT	PO-PUP-1785	6,720	201,600	$ 169,344.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Angola	30-Dec-2014	ACT	PO-PUP-2073	11,295	338,850	$ 254,137.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Benin	24-Sep-2014	ACT	PO-PUP-1822	5,385	161,550	$ 135,702.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Benin	08-Oct-2014	ACT	PO-PUP-1848	5,385	161,550	$ 121,162.50

Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Burkina Faso	10-Sep-2014	ACT	PO-PUP-1795	7,005	210,150	$ 176,526.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Burkina Faso	10-Sep-2014	ACT	PO-PUP-1796	15,000	450,000	$ 337,500.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Burkina Faso	10-Sep-2014	ACT	PO-PUP-1797	13,005	390,150	$ 292,612.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Burkina Faso	10-Sep-2014	ACT	PO-PUP-1798	25,005	750,150	$ 562,612.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Ghana	27-Oct-2014	ACT	PO-PUP-1914	15,480	464,400	$ 348,300.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Guinea	30-Sep-2014	ACT	PO-PUP-1839	6,000	180,000	$ 151,200.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Guinea	02-Mar-2015	ACT	PO-PUP-2147	1,755	52,650	$ 49,491.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Malawi	28-Aug-2014	ACT	PO-PUP-1775	8,625	258,750	$ 243,225.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Malawi	28-Aug-2014	ACT	PO-PUP-1776	8,625	258,750	$ 243,225.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Malawi	12-Nov-2014	ACT	PO-PUP-1935	7,320	219,600	$ 206,424.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Malawi	11-Feb-2015	ACT	PO-PUC-2031	1,938	58,140	$ 42,636.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Mali	12-Nov-2014	ACT	PO-PUP-1934	10,005	300,150	$ 225,112.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Mali	05-Feb-2015	ACT	PO-PUC-2029	13,334	400,020	$ 293,348.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Mozambique	30-Dec-2013	ACT	PO-PUP-1591	11,670	350,100	$ 262,575.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Myanmar	12-Sep-2014	ACT	PO-PUP-1803	30	900	$ 675.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Myanmar	22-Sep-2014	ACT	PO-PUP-1820	30	900	$ 756.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Myanmar	06-Jul-2015	ACT	PO-PUP-2207	105	3,150	$ 2,961.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Netherlands	09-May-2014	ACT	PO-PUP-1731	15,000	450,000	$ 337,500.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Netherlands	09-May-2014	ACT	PO-PUP-1732	15,000	450,000	$ 337,500.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Netherlands	27-Jun-2014	ACT	PO-PUC-1594	7,335	220,050	$ 165,037.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Netherlands	27-Jun-2014	ACT	PO-PUC-1595	7,335	220,050	$ 165,037.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Netherlands	27-Jun-2014	ACT	PO-PUC-1596	7,335	220,050	$ 165,037.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Netherlands	07-Aug-2014	ACT	PO-PUP-1772	15,000	450,000	$ 337,500.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Netherlands	07-Aug-2014	ACT	PO-PUP-1773	15,000	450,000	$ 337,500.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Netherlands	09-Sep-2014	ACT	PO-PUC-1654	7,335	220,050	$ 165,037.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Netherlands	09-Sep-2014	ACT	PO-PUC-1655	7,335	220,050	$ 165,037.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Netherlands	23-Sep-2014	ACT	PO-PUC-1671	7,335	220,050	$ 165,037.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Netherlands	23-Sep-2014	ACT	PO-PUC-1672	7,335	220,050	$ 165,037.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Netherlands	23-Sep-2014	ACT	PO-PUC-1673	7,335	220,050	$ 165,037.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Netherlands	12-Dec-2014	ACT	PO-PUC-1897	7,350	220,500	$ 165,375.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Netherlands	12-Dec-2014	ACT	PO-PUC-1898	14,670	440,100	$ 330,075.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Netherlands	13-Aug-2015	ACT	PO-PUC-2113	7,350	220,500	$ 165,375.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Nigeria	24-Jul-2014	ACT	PO-PUC-1610	100,000	3,000,000	$ 2,200,000.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Rwanda	24-Sep-2014	ACT	PO-PUP-1823	2,055	61,650	$ 57,951.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Rwanda	24-Sep-2014	ACT	PO-PUP-1824	2,625	78,750	$ 74,025.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Senegal	02-Sep-2014	ACT	PO-PUP-1782	555	16,650	$ 15,651.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Senegal	02-Sep-2014	ACT	PO-PUP-1783	1,380	41,400	$ 34,776.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Senegal	02-Sep-2014	ACT	PO-PUP-1784	825	24,750	$ 18,562.50
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Tanzania	26-Nov-2014	ACT	PO-PUP-1979	10,005	300,150	$ 282,141.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Uganda	02-Sep-2014	ACT	PO-PUP-1780	6,675	200,250	$ 168,210.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Zambia	15-Jul-2014	ACT	PO-PUP-1765	23,340	700,200	$ 658,188.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Zambia	13-Nov-2014	ACT	PO-PUP-1936	18,345	550,350	$ 462,294.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Zambia	13-Nov-2014	ACT	PO-PUP-1937	15,000	450,000	$ 378,000.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Zimbabwe	28-Aug-2014	ACT	PO-PUP-1774	4,290	128,700	$ 120,978.00
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Zimbabwe	24-Sep-2014	ACT	PO-PUP-1821	2,730	81,900	$ 61,425.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Angola	04-Sep-2014	ACT	PO-PUP-1785	9,280	278,400	$ 423,168.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Angola	30-Dec-2014	ACT	PO-PUP-2073	15,312	459,360	$ 643,104.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Benin	05-Feb-2014	ACT	PO-PUP-1659	4,464	133,920	$ 187,488.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Benin	24-Sep-2014	ACT	PO-PUP-1822	6,496	194,880	$ 296,217.60
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Benin	08-Oct-2014	ACT	PO-PUP-1848	6,496	194,880	$ 272,832.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Guinea	30-Sep-2014	ACT	PO-PUP-1839	5,008	150,240	$ 228,364.80
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Guinea	02-Mar-2015	ACT	PO-PUP-2147	1,456	43,680	$ 76,876.80
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Kenya	27-Oct-2014	ACT	PO-PUP-1912	10,000	300,000	$ 528,000.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Malawi	28-Aug-2014	ACT	PO-PUP-1775	11,184	335,520	$ 590,515.20
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Malawi	28-Aug-2014	ACT	PO-PUP-1776	11,184	335,520	$ 590,515.20

Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Malawi	12-Nov-2014	ACT	PO-PUP-1935	9,136	274,080	$ 482,380.80
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Malawi	11-Feb-2015	ACT	PO-PUC-2031	20,132	603,960	$ 583,828.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Mali	12-Nov-2014	ACT	PO-PUP-1934	10,000	300,000	$ 420,000.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Mali	05-Feb-2015	ACT	PO-PUC-2029	3,334	100,020	$ 96,686.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Mozambique	30-Dec-2013	ACT	PO-PUP-1591	31,616	948,480	$ 1,327,872.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Mozambique	04-Dec-2014	ACT	PO-PUP-2017	13,360	400,800	$ 705,408.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Myanmar	12-Sep-2014	ACT	PO-PUP-1803	128	3,840	$ 5,376.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Myanmar	22-Sep-2014	ACT	PO-PUP-1820	128	3,840	$ 5,836.80
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Myanmar	06-Jul-2015	ACT	PO-PUP-2207	96	2,880	$ 5,068.80
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Netherlands	09-May-2014	ACT	PO-PUP-1731	14,160	424,800	$ 594,720.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Netherlands	09-May-2014	ACT	PO-PUP-1732	14,160	424,800	$ 594,720.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Netherlands	27-Jun-2014	ACT	PO-PUC-1594	4,000	120,000	$ 168,000.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Netherlands	27-Jun-2014	ACT	PO-PUC-1595	4,000	120,000	$ 168,000.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Netherlands	27-Jun-2014	ACT	PO-PUC-1596	4,000	120,000	$ 168,000.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Netherlands	07-Aug-2014	ACT	PO-PUP-1772	14,160	424,800	$ 594,720.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Netherlands	07-Aug-2014	ACT	PO-PUP-1773	14,192	425,760	$ 596,064.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Netherlands	09-Sep-2014	ACT	PO-PUC-1654	3,840	115,200	$ 161,280.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Netherlands	09-Sep-2014	ACT	PO-PUC-1655	3,840	115,200	$ 161,280.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Netherlands	23-Sep-2014	ACT	PO-PUC-1671	4,000	120,000	$ 168,000.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Netherlands	23-Sep-2014	ACT	PO-PUC-1672	4,000	120,000	$ 168,000.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Netherlands	23-Sep-2014	ACT	PO-PUC-1673	4,000	120,000	$ 168,000.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Netherlands	12-Dec-2014	ACT	PO-PUC-1897	4,000	120,000	$ 168,000.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Netherlands	12-Dec-2014	ACT	PO-PUC-1898	8,000	240,000	$ 336,000.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Netherlands	13-Aug-2015	ACT	PO-PUC-2113	4,000	120,000	$ 168,000.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Nigeria	28-Jul-2014	ACT	PO-PUC-1613	46,667	1,400,010	$ 1,353,343.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Nigeria	23-Sep-2014	ACT	PO-PUC-1675	40,000	1,200,000	$ 1,160,000.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Rwanda	24-Sep-2014	ACT	PO-PUP-1823	4,896	146,880	$ 258,508.80
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Rwanda	24-Sep-2014	ACT	PO-PUP-1824	6,272	188,160	$ 331,161.60
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Rwanda	16-Jan-2015	ACT	PO-PUP-2099	5,744	172,320	$ 303,283.20
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Senegal	02-Sep-2014	ACT	PO-PUP-1782	784	23,520	$ 41,395.20
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Senegal	02-Sep-2014	ACT	PO-PUP-1783	1,936	58,080	$ 88,281.60
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Senegal	02-Sep-2014	ACT	PO-PUP-1784	1,168	35,040	$ 49,056.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Tanzania	26-Nov-2014	ACT	PO-PUP-1979	15,008	450,240	$ 792,422.40
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Tanzania	26-Nov-2014	ACT	PO-PUP-1980	14,640	439,200	$ 667,584.00
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Zambia	12-Sep-2014	ACT	PO-PUP-1806	26,544	796,320	$ 1,401,523.20
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Zimbabwe	28-Aug-2014	ACT	PO-PUP-1774	2,352	70,560	$ 124,185.60
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Zimbabwe	24-Sep-2014	ACT	PO-PUP-1821	6,864	205,920	$ 288,288.00
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Angola	04-Sep-2014	ACT	PO-PUP-1785	2,688	80,640	$ 101,606.40
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Angola	30-Dec-2014	ACT	PO-PUP-2073	4,400	132,000	$ 143,880.00
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Benin	24-Sep-2014	ACT	PO-PUP-1822	3,616	108,480	$ 136,684.80
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Benin	08-Oct-2014	ACT	PO-PUP-1848	3,616	108,480	$ 118,243.20
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Ghana	27-Oct-2014	ACT	PO-PUP-1913	6,048	181,440	$ 197,769.60
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Guinea	30-Sep-2014	ACT	PO-PUP-1839	3,008	90,240	$ 113,702.40
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Guinea	02-Mar-2015	ACT	PO-PUP-2147	880	26,400	$ 35,904.00
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Malawi	28-Aug-2014	ACT	PO-PUP-1775	3,648	109,440	$ 148,838.40
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Malawi	28-Aug-2014	ACT	PO-PUP-1776	3,648	109,440	$ 148,838.40
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Malawi	12-Nov-2014	ACT	PO-PUP-1935	3,200	96,000	$ 130,560.00
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Malawi	11-Feb-2015	ACT	PO-PUC-2031	3,190	95,700	$ 71,775.00
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Mali	12-Nov-2014	ACT	PO-PUP-1934	8,336	250,080	$ 272,587.20
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Mali	05-Feb-2015	ACT	PO-PUC-2029	3,334	100,020	$ 75,015.00
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Mozambique	04-Dec-2014	ACT	PO-PUP-2018	10,000	300,000	$ 378,000.00
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Mozambique	05-Jan-2015	ACT	PO-PUP-2080	10,000	300,000	$ 378,000.00
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Myanmar	12-Sep-2014	ACT	PO-PUP-1803	32	960	$ 1,046.40
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Myanmar	22-Sep-2014	ACT	PO-PUP-1820	32	960	$ 1,209.60
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Myanmar	06-Jul-2015	ACT	PO-PUP-2207	80	2,400	$ 3,264.00

Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	09-May-2014	ACT	PO-PUP-1731	5,008	150,240	$ 163,761.60
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	09-May-2014	ACT	PO-PUP-1732	5,008	150,240	$ 163,761.60
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	27-Jun-2014	ACT	PO-PUC-1594	3,696	110,880	$ 120,859.20
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	27-Jun-2014	ACT	PO-PUC-1595	3,696	110,880	$ 120,859.20
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	27-Jun-2014	ACT	PO-PUC-1596	3,696	110,880	$ 120,859.20
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	07-Aug-2014	ACT	PO-PUP-1772	5,008	150,240	$ 163,761.60
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	07-Aug-2014	ACT	PO-PUP-1773	5,008	150,240	$ 163,761.60
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	09-Sep-2014	ACT	PO-PUC-1654	3,344	100,320	$ 109,348.80
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	09-Sep-2014	ACT	PO-PUC-1655	3,344	100,320	$ 109,348.80
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	23-Sep-2014	ACT	PO-PUC-1671	3,696	110,880	$ 120,859.20
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	23-Sep-2014	ACT	PO-PUC-1672	3,696	110,880	$ 120,859.20
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	23-Sep-2014	ACT	PO-PUC-1673	3,696	110,880	$ 120,859.20
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	12-Dec-2014	ACT	PO-PUC-1897	3,712	111,360	$ 121,382.40
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	12-Dec-2014	ACT	PO-PUC-1898	1,437	43,110	$ 46,989.90
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	12-Dec-2014	ACT	PO-PUC-1898	5,955	178,650	$ 194,728.50
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Netherlands	13-Aug-2015	ACT	PO-PUC-2113	3,712	111,360	$ 121,382.40
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Nigeria	24-Jul-2014	ACT	PO-PUC-1610	11,659	349,770	$ 262,327.50
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Nigeria	23-Sep-2014	ACT	PO-PUC-1675	28,333	849,990	$ 637,492.50
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Rwanda	24-Sep-2014	ACT	PO-PUP-1823	2,928	87,840	$ 119,462.40
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Rwanda	24-Sep-2014	ACT	PO-PUP-1824	3,744	112,320	$ 152,755.20
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Senegal	02-Sep-2014	ACT	PO-PUP-1782	704	21,120	$ 28,723.20
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Senegal	02-Sep-2014	ACT	PO-PUP-1783	1,728	51,840	$ 65,318.40
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Senegal	02-Sep-2014	ACT	PO-PUP-1784	1,040	31,200	$ 34,008.00
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Tanzania	24-Sep-2014	ACT	PO-PUC-1678	11,515	345,450	$ 248,724.00
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Tanzania	26-Nov-2014	ACT	PO-PUP-1978	6,992	209,760	$ 285,273.60
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Uganda	02-Sep-2014	ACT	PO-PUP-1780	3,552	106,560	$ 134,265.60
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Zambia	24-Feb-2014	ACT	PO-PUP-1684	16,672	500,160	$ 545,174.40
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Zambia	15-Jul-2014	ACT	PO-PUP-1765	10,000	300,000	$ 408,000.00
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Zambia	12-Sep-2014	ACT	PO-PUP-1804	6,688	200,640	$ 252,806.40
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Zambia	12-Sep-2014	ACT	PO-PUP-1805	10,000	300,000	$ 408,000.00
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Zimbabwe	28-Aug-2014	ACT	PO-PUP-1774	1,344	40,320	$ 54,835.20
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Zimbabwe	24-Sep-2014	ACT	PO-PUP-1821	2,496	74,880	$ 81,619.20
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Burkina Faso	12-Nov-2014	ACT	PO-PUC-1833	16,000	400,000	$ 154,720.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Burundi	02-Oct-2014	ACT	PO-PUC-1691	5,904	147,600	$ 65,239.20
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Burundi	14-Nov-2014	ACT	PO-PUC-1841	6,120	153,000	$ 67,626.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Burundi	14-Nov-2014	ACT	PO-PUC-1842	10,476	261,900	$ 115,759.80
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Liberia	06-Nov-2014	ACT	PO-PUC-1815	23,652	591,300	$ 228,714.84
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Liberia	16-Dec-2014	ACT	PO-PUC-1901	4,221	105,525	$ 40,817.07
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Madagascar	30-Jun-2015	ACT	PO-PUC-2078	7,308	182,700	$ 80,753.40
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	08-Jan-2014	ACT	PO-PUP-1629	32,760	819,000	$ 425,880.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	07-Apr-2014	ACT	PO-PUC-1516	1,944	48,600	$ 23,094.72
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	07-Apr-2014	ACT	PO-PUC-1517	1,944	48,600	$ 23,094.72
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	11-Jul-2014	ACT	PO-PUC-1600	1,944	48,600	$ 21,481.20
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	11-Jul-2014	ACT	PO-PUC-1601	1,944	48,600	$ 21,481.20
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	11-Jul-2014	ACT	PO-PUC-1602	1,944	48,600	$ 21,481.20
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	17-Sep-2014	ACT	PO-PUC-1668	1,944	48,600	$ 21,481.20
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	17-Sep-2014	ACT	PO-PUC-1669	1,944	48,600	$ 21,481.20
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	17-Sep-2014	ACT	PO-PUC-1670	1,944	48,600	$ 21,481.20
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	20-Oct-2014	ACT	PO-PUC-1705	41,832	1,045,800	$ 462,243.60
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	20-Oct-2014	ACT	PO-PUC-1706	41,832	1,045,800	$ 462,243.60
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	16-Dec-2014	ACT	PO-PUC-1899	1,944	48,600	$ 21,481.20
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	16-Dec-2014	ACT	PO-PUC-1900	1,944	48,600	$ 21,481.20
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	17-Dec-2014	ACT	PO-PUC-1903	48,024	1,200,600	$ 530,665.20
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	17-Dec-2014	ACT	PO-PUC-1904	48,024	1,200,600	$ 530,665.20
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	20-Apr-2015	ACT	PO-PUC-2054	1,944	48,600	$ 21,481.20

Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	20-Apr-2015	ACT	PO-PUC-2055	1,944	48,600	$ 21,481.20
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Nigeria	25-Apr-2014	ACT	PO-PUC-1531	3,600	90,000	$ 39,780.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Nigeria	12-Nov-2014	ACT	PO-PUC-1834	8,000	200,000	$ 77,360.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Nigeria	01-Jul-2015	ACT	PO-PUC-2080	6,520	163,000	$ 39,706.80
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Nigeria	01-Jul-2015	ACT	PO-PUC-2081	20,800	520,000	$ 126,672.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Senegal	17-Sep-2014	ACT	PO-PUC-1666	2,088	52,200	$ 23,072.40
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Senegal	17-Sep-2014	ACT	PO-PUC-1667	1,260	31,500	$ 13,923.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Singapore	22-May-2015	ACT	PO-PUC-2073	11,200	280,000	$ 108,304.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	South Sudan	20-Jul-2015	ACT	PO-PUC-2103	5,616	140,400	$ 62,056.80
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Burkina Faso	12-Nov-2014	ACT	PO-PUC-1833	23,000	575,000	$ 431,250.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Burundi	14-Nov-2014	ACT	PO-PUC-1839	29,256	731,400	$ 556,741.68
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Ghana	31-Dec-2014	ACT	PO-PUC-1936	36,936	923,400	$ 702,892.08
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Guinea	11-Nov-2014	ACT	PO-PUC-1831	20,016	500,400	$ 380,904.48
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Liberia	06-Nov-2014	ACT	PO-PUC-1815	21,235	530,875	$ 387,538.75
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Liberia	16-Dec-2014	ACT	PO-PUC-1902	12,000	300,000	$ 228,360.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Madagascar	30-Jun-2015	ACT	PO-PUC-2078	12,072	301,800	$ 229,730.16
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	08-Jan-2014	ACT	PO-PUP-1629	58,392	1,459,800	$ 1,299,222.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	07-Apr-2014	ACT	PO-PUC-1516	1,920	48,000	$ 39,283.20
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	07-Apr-2014	ACT	PO-PUC-1517	1,920	48,000	$ 39,283.20
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	11-Jul-2014	ACT	PO-PUC-1600	1,800	45,000	$ 34,254.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	11-Jul-2014	ACT	PO-PUC-1601	1,800	45,000	$ 34,254.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	11-Jul-2014	ACT	PO-PUC-1602	1,800	45,000	$ 34,254.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	17-Sep-2014	ACT	PO-PUC-1668	1,800	45,000	$ 34,254.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	17-Sep-2014	ACT	PO-PUC-1669	1,800	45,000	$ 34,254.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	17-Sep-2014	ACT	PO-PUC-1670	1,800	45,000	$ 34,254.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	20-Oct-2014	ACT	PO-PUC-1705	33,864	846,600	$ 644,431.92
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	20-Oct-2014	ACT	PO-PUC-1706	33,864	846,600	$ 644,431.92
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	16-Dec-2014	ACT	PO-PUC-1899	1,800	45,000	$ 34,254.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	16-Dec-2014	ACT	PO-PUC-1900	1,800	45,000	$ 34,254.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	17-Dec-2014	ACT	PO-PUC-1903	32,016	800,400	$ 609,264.48
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	17-Dec-2014	ACT	PO-PUC-1904	32,016	800,400	$ 609,264.48
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	20-Apr-2015	ACT	PO-PUC-2054	1,800	45,000	$ 34,254.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Netherlands	20-Apr-2015	ACT	PO-PUC-2055	1,800	45,000	$ 34,254.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Nigeria	25-Apr-2014	ACT	PO-PUC-1531	3,000	75,000	$ 57,090.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Nigeria	12-Nov-2014	ACT	PO-PUC-1834	12,000	300,000	$ 219,000.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Nigeria	01-Jul-2015	ACT	PO-PUC-2080	14,320	358,000	$ 166,684.80
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Nigeria	01-Jul-2015	ACT	PO-PUC-2081	38,000	950,000	$ 442,320.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Senegal	17-Sep-2014	ACT	PO-PUC-1666	3,480	87,000	$ 66,224.40
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Senegal	17-Sep-2014	ACT	PO-PUC-1667	2,088	52,200	$ 39,734.64
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Singapore	22-May-2015	ACT	PO-PUC-2073	11,200	280,000	$ 210,000.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	South Sudan	20-Jul-2015	ACT	PO-PUC-2103	2,808	70,200	$ 53,436.24
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Burundi	14-Nov-2014	ACT	PO-PUC-1839	8,096	202,400	$ 38,456.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Ghana	06-Nov-2014	ACT	PO-PUC-1816	22,180	554,500	$ 88,720.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Liberia	06-Nov-2014	ACT	PO-PUC-1815	12,980	324,500	$ 51,920.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Liberia	16-Dec-2014	ACT	PO-PUC-1901	1,457	36,425	$ 5,828.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Madagascar	30-Jun-2015	ACT	PO-PUC-2078	13,904	347,600	$ 66,044.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	08-Jan-2014	ACT	PO-PUP-1629	4,092	102,300	$ 26,598.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	07-Apr-2014	ACT	PO-PUC-1516	3,344	83,600	$ 19,863.36
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	07-Apr-2014	ACT	PO-PUC-1517	3,344	83,600	$ 19,863.36
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	11-Jul-2014	ACT	PO-PUC-1600	2,552	63,800	$ 12,122.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	11-Jul-2014	ACT	PO-PUC-1601	2,552	63,800	$ 12,122.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	11-Jul-2014	ACT	PO-PUC-1602	2,552	63,800	$ 12,122.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	17-Sep-2014	ACT	PO-PUC-1668	2,552	63,800	$ 12,122.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	17-Sep-2014	ACT	PO-PUC-1669	2,552	63,800	$ 12,122.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	17-Sep-2014	ACT	PO-PUC-1670	2,552	63,800	$ 12,122.00

Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	20-Oct-2014	ACT	PO-PUC-1705	8,184	204,600	$ 38,874.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	20-Oct-2014	ACT	PO-PUC-1706	8,184	204,600	$ 38,874.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	16-Dec-2014	ACT	PO-PUC-1899	2,552	63,800	$ 12,122.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	16-Dec-2014	ACT	PO-PUC-1900	2,552	63,800	$ 12,122.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	17-Dec-2014	ACT	PO-PUC-1903	16,016	400,400	$ 76,076.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	17-Dec-2014	ACT	PO-PUC-1904	16,016	400,400	$ 76,076.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	20-Apr-2015	ACT	PO-PUC-2054	2,552	63,800	$ 12,122.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	20-Apr-2015	ACT	PO-PUC-2055	2,552	63,800	$ 12,122.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Nigeria	25-Apr-2014	ACT	PO-PUC-1531	4,840	121,000	$ 22,990.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Nigeria	01-Jul-2015	ACT	PO-PUC-2080	13,800	345,000	$ 33,534.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Nigeria	01-Jul-2015	ACT	PO-PUC-2081	16,800	420,000	$ 40,824.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Senegal	17-Sep-2014	ACT	PO-PUC-1666	1,232	30,800	$ 5,852.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Senegal	17-Sep-2014	ACT	PO-PUC-1667	748	18,700	$ 3,553.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Singapore	22-May-2015	ACT	PO-PUC-2073	8,400	210,000	$ 33,600.00
Artesunate/Amodiaquine, FDC, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	South Sudan	20-Jul-2015	ACT	PO-PUC-2103	8,404	210,100	$ 39,919.00
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Burundi	02-Oct-2014	ACT	PO-PUC-1691	33,444	836,100	$ 221,733.72
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Burundi	14-Nov-2014	ACT	PO-PUC-1840	18,540	463,500	$ 122,920.20
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Burundi	14-Nov-2014	ACT	PO-PUC-1842	23,940	598,500	$ 158,722.20
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Ghana	31-Dec-2014	ACT	PO-PUC-1936	53,892	1,347,300	$ 357,303.96
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Liberia	16-Dec-2014	ACT	PO-PUC-1902	16,488	412,200	$ 109,315.44
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Madagascar	30-Jun-2015	ACT	PO-PUC-2078	10,764	269,100	$ 71,365.32
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	08-Jan-2014	ACT	PO-PUP-1629	17,460	436,500	$ 152,775.00
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	07-Apr-2014	ACT	PO-PUC-1516	2,340	58,500	$ 18,532.80
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	07-Apr-2014	ACT	PO-PUC-1517	2,340	58,500	$ 18,532.80
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	11-Jul-2014	ACT	PO-PUC-1600	1,980	49,500	$ 13,127.40
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	11-Jul-2014	ACT	PO-PUC-1601	1,980	49,500	$ 13,127.40
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	11-Jul-2014	ACT	PO-PUC-1602	1,980	49,500	$ 13,127.40
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	17-Sep-2014	ACT	PO-PUC-1668	1,980	49,500	$ 13,127.40
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	17-Sep-2014	ACT	PO-PUC-1669	1,980	49,500	$ 13,127.40
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	17-Sep-2014	ACT	PO-PUC-1670	1,980	49,500	$ 13,127.40
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	20-Oct-2014	ACT	PO-PUC-1705	56,232	1,405,800	$ 372,818.16
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	20-Oct-2014	ACT	PO-PUC-1706	56,232	1,405,800	$ 372,818.16
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	16-Dec-2014	ACT	PO-PUC-1899	1,980	49,500	$ 13,127.40
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	16-Dec-2014	ACT	PO-PUC-1900	1,980	49,500	$ 13,127.40
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	17-Dec-2014	ACT	PO-PUC-1903	64,008	1,600,200	$ 424,373.04
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	17-Dec-2014	ACT	PO-PUC-1904	64,008	1,600,200	$ 424,373.04
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	20-Apr-2015	ACT	PO-PUC-2054	1,980	49,500	$ 13,127.40
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Netherlands	20-Apr-2015	ACT	PO-PUC-2055	1,980	49,500	$ 13,127.40
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Nigeria	25-Apr-2014	ACT	PO-PUC-1531	3,600	90,000	$ 23,868.00
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Nigeria	12-Nov-2014	ACT	PO-PUC-1834	12,000	300,000	$ 81,000.00
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Nigeria	01-Jul-2015	ACT	PO-PUC-2080	6,300	157,500	$ 22,932.00
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Nigeria	01-Jul-2015	ACT	PO-PUC-2081	15,000	375,000	$ 54,600.00
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Senegal	17-Sep-2014	ACT	PO-PUC-1666	1,656	41,400	$ 10,979.28
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Senegal	17-Sep-2014	ACT	PO-PUC-1667	1,008	25,200	$ 6,683.04
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Singapore	22-May-2015	ACT	PO-PUC-2073	25,200	630,000	$ 189,000.00
Artesunate/Amodiaquine, FDC, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	South Sudan	20-Jul-2015	ACT	PO-PUC-2103	8,424	210,600	$ 55,851.12
Bed Net, Polyester, Alpha-Cypermethrin, 100dn, (190(L) x 180(W) x 150(H) cm), Rectangular, Green, each	Malawi	25-Apr-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1722	450,000	450,000	$ 1,471,500.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Blue, Rectangular	Laos	19-Feb-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1679	20,000	20,000	$ 64,400.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Blue, Rectangular	Myanmar	25-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1977	240,000	240,000	$ 672,000.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Blue, Rectangular	Myanmar	29-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2053	553,500	553,500	$ 1,477,845.00
Bed Net, Polyester, Deltamethrin, 100 Denier (1050C x 56R x 220H cm), Conical, Blue	South Sudan	07-Aug-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2239	100,000	100,000	$ 329,000.00
Bed Net, Polyester, Deltamethrin, 100 Denier (1050C x 56R x 220H cm), Conical, White	South Sudan	07-Aug-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2239	100,000	100,000	$ 310,000.00
Bed Net, Polyester, Deltamethrin, 100 Denier (1250 x 65 x 250 cm), Conical, Blue	Senegal	06-Jan-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2082	168,800	168,800	$ 739,344.00
Bed Net, Polyester, Deltamethrin, 100 Denier (160(W) x 180(L) x 170(H) cm), Rectangular, white	Uganda	20-Oct-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1883	550,000	550,000	$ 1,534,500.00
Bed Net, Polyester, Deltamethrin, 100 Denier (160(W) x 180(L) x 170(H) cm), Rectangular, white	Uganda	20-Oct-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1884	549,845	549,845	$ 1,534,067.55

Bed Net, Polyester, Deltamethrin, 100 Denier (160(W) x 180(L) x 170(H) cm), Rectangular, white	Uganda	20-Oct-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1885	539,000	539,000	$ 1,503,810.00
Bed Net, Polyester, Deltamethrin, 100 Denier (160(W) x 180(L) x 170(H) cm), Rectangular, white	Uganda	12-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2133	687,275	687,275	$ 1,670,078.25
Bed Net, Polyester, Deltamethrin, 100 Denier (180(L) x 160(W) x 170(H) cm), Rectangular, Light Blue	Zambia	31-Oct-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1927	500,000	500,000	$ 1,465,000.00
Bed Net, Polyester, Deltamethrin, 100 Denier (180(L) x 160(W) x 170(H) cm), Rectangular, Light Blue	Zambia	31-Oct-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1928	176,650	176,650	$ 517,584.50
Bed Net, Polyester, Deltamethrin, 100 Denier (180(L) x 160(W) x 170(H) cm), Rectangular, Light Blue	Zambia	31-Oct-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1929	123,350	123,350	$ 361,415.50
Bed Net, Polyester, Deltamethrin, 100 Denier (180(L) x 160(W) x 180(H) cm), Rectangular, Blue	Tanzania	05-Jan-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2078	500,000	500,000	$ 1,585,000.00
Bed Net, Polyester, Deltamethrin, 100 Denier (180(L) x 160(W) x 180(H) cm), Rectangular, Blue	Tanzania	05-Jan-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2079	367,720	367,720	$ 1,165,672.40
Bed Net, Polyester, Deltamethrin, 100 Denier (180(L) x 160(W) x 180(H) cm), Rectangular, Blue	Tanzania	06-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2122	640,520	640,520	$ 2,036,853.60
Bed Net, Polyester, Deltamethrin, 100 Denier (180(L) x 160(W) x 180(H) cm), Rectangular, Blue	Tanzania	06-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2123	637,720	637,720	$ 2,027,949.60
Bed Net, Polyester, Deltamethrin, 100 Denier (180(L) x 160(W) x 180(H) cm), Rectangular, Blue	Tanzania	10-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2130	499,960	499,960	$ 1,489,880.80
Bed Net, Polyester, Deltamethrin, 100 Denier (180(L) x 190(W) x 170(H) cm), Rectangular, Light Blue	Cambodia	12-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1808	70,000	70,000	$ 218,400.00
Bed Net, Polyester, Deltamethrin, 100 Denier (180(L) x 190(W) x 170(H) cm), Rectangular, White	Mali	13-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1938	675,000	675,000	$ 2,112,750.00
Bed Net, Polyester, Deltamethrin, 100 Denier (180(L) x 190(W) x 170(H) cm), Rectangular, White	Mali	13-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1939	675,000	675,000	$ 2,112,750.00
Bed Net, Polyester, Deltamethrin, 100 Denier (180(W) x 160(L) x 150(H) cm), Rectangular, White	Burundi	09-Mar-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2167	700,000	700,000	$ 1,631,000.00
Bed Net, Polyester, Deltamethrin, 100 Denier (180(W) x 160(L) x 150(H) cm), Rectangular, White	Congo, Democratic Republic of	29-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1831	150,000	150,000	$ 403,500.00
Bed Net, Polyester, Deltamethrin, 100 Denier (180(W) x 160(L) x 150(H) cm), Rectangular, White	Congo, Democratic Republic of	29-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1832	180,000	180,000	$ 484,200.00
Bed Net, Polyester, Deltamethrin, 100 Denier (180(W) x 160(L) x 150(H) cm), Rectangular, White	Congo, Democratic Republic of	29-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1833	60,000	60,000	$ 161,400.00
Bed Net, Polyester, Deltamethrin, 100 Denier (180(W) x 160(L) x 150(H) cm), Rectangular, White	Congo, Democratic Republic of	29-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1834	52,000	52,000	$ 139,880.00
Bed Net, Polyester, Deltamethrin, 100 Denier (180(W) x 160(L) x 150(H) cm), Rectangular, White	Congo, Democratic Republic of	29-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1835	87,899	87,899	$ 236,448.31
Bed Net, Polyester, Deltamethrin, 100 Denier (180(W) x 160(L) x 150(H) cm), Rectangular, White	Congo, Democratic Republic of	29-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1836	300,000	300,000	$ 807,000.00
Bed Net, Polyester, Deltamethrin, 100 Denier (180(W) x 160(L) x 150(H) cm), Rectangular, White	Congo, Democratic Republic of	29-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1837	139,950	139,950	$ 376,465.50
Bed Net, Polyester, Deltamethrin, 100 Denier (180(W) x 160(L) x 150(H) cm), Rectangular, White	Congo, Democratic Republic of	29-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1838	145,000	145,000	$ 390,050.00
Bed Net, Polyester, Deltamethrin, 100 Denier (180(W) x 160(L) x 150(H) cm), Rectangular, White	Congo, Democratic Republic of	25-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2144	672,500	672,500	$ 1,573,650.00
Bed Net, Polyester, Deltamethrin, 100 Denier (180(W) x 160(L) x 150(H) cm), Rectangular, White	Congo, Democratic Republic of	25-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2145	662,500	662,500	$ 1,550,250.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 100(W) x 170(H) cm), Rectangular, Light Blue	Senegal	06-Jan-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2082	1,000	1,000	$ 2,500.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Rectangular, White	Angola	24-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1954	825,000	825,000	$ 2,318,250.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Rectangular, White	Angola	24-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1955	625,000	625,000	$ 1,756,250.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Rectangular, White	Angola	24-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1956	400,000	400,000	$ 1,124,000.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Rectangular, White	Angola	24-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1957	650,000	650,000	$ 1,826,500.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Rectangular, White	Liberia	09-Jul-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1764	100,000	100,000	$ 297,000.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Rectangular, White	Liberia	19-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1942	15,900	15,900	$ 47,223.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Rectangular, White	Liberia	19-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1943	10,600	10,600	$ 31,482.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Rectangular, White	Liberia	19-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1944	6,050	6,050	$ 17,968.50
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Rectangular, White	Liberia	19-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1945	6,000	6,000	$ 17,820.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Rectangular, White	Liberia	19-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1946	2,750	2,750	$ 8,167.50
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Rectangular, White	Liberia	19-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1947	13,200	13,200	$ 39,204.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Rectangular, White	Liberia	19-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1948	6,500	6,500	$ 19,305.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Rectangular, White	Liberia	19-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1949	3,400	3,400	$ 10,098.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Rectangular, White	Liberia	19-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1950	4,900	4,900	$ 14,553.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 150(H) cm), Rectangular, White	Liberia	19-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1951	30,700	30,700	$ 91,179.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, Blue	Senegal	02-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1988	375,000	375,000	$ 1,173,750.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, Blue	Thailand	25-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1963	4,000	4,000	$ 12,320.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, Blue	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2019	3,000	3,000	$ 9,240.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, Blue	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2032	3,000	3,000	$ 9,240.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Congo, Democratic Republic of	26-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1826	60,000	60,000	$ 198,000.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Congo, Democratic Republic of	26-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1827	120,000	120,000	$ 396,000.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Congo, Democratic Republic of	26-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1828	180,000	180,000	$ 594,000.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Congo, Democratic Republic of	26-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1829	125,000	125,000	$ 412,500.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Congo, Democratic Republic of	25-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2143	615,000	615,000	$ 1,740,450.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Madagascar	12-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1799	700,000	700,000	$ 2,156,000.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Madagascar	12-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1800	699,700	699,700	$ 2,155,076.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Madagascar	12-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1801	700,000	700,000	$ 2,156,000.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Madagascar	17-Oct-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1870	700,000	700,000	$ 2,093,000.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Madagascar	17-Oct-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1871	699,900	699,900	$ 2,092,701.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Madagascar	30-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2075	700,000	700,000	$ 2,093,000.00

Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Madagascar	30-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2076	695,350	695,350	$ 2,079,096.50
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Senegal	02-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1988	313,800	313,800	$ 935,124.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	25-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1961	1,000	1,000	$ 2,930.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2019	10,000	10,000	$ 29,300.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2020	2,000	2,000	$ 5,860.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2021	100	100	$ 293.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2022	400	400	$ 1,172.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2023	500	500	$ 1,465.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2024	500	500	$ 1,465.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2025	16,950	16,950	$ 49,663.50
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2026	5,000	5,000	$ 14,650.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2027	3,500	3,500	$ 10,255.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2028	1,700	1,700	$ 4,981.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2029	450	450	$ 1,318.50
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2030	500	500	$ 1,465.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2031	1,400	1,400	$ 4,102.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2032	500	500	$ 1,465.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2033	500	500	$ 1,465.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x 180(W) x 170(H), Rectangular, White	Thailand	10-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2034	5,000	5,000	$ 14,650.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x180(W) x170(H) cm), Rectangular, Light Blue	Mozambique	10-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2124	382,500	382,500	$ 1,097,775.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x180(W) x170(H) cm), Rectangular, Light Blue	Mozambique	10-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2125	215,000	215,000	$ 617,050.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x180(W) x170(H) cm), Rectangular, Light Blue	Mozambique	10-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2126	185,000	185,000	$ 530,950.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x180(W) x170(H) cm), Rectangular, Light Blue	Mozambique	10-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2127	382,500	382,500	$ 1,097,775.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x180(W) x170(H) cm), Rectangular, Light Blue	Mozambique	10-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2128	215,000	215,000	$ 617,050.00
Bed Net, Polyester, Deltamethrin, 100 Denier (190(L) x180(W) x170(H) cm), Rectangular, Light Blue	Mozambique	10-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2129	185,000	185,000	$ 530,950.00
Bed Net, Polyester, Deltamethrin, 100 dn, (1250 x 65 x 250 cm), White, Conical, Each	Guinea	10-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1933	235,000	235,000	$ 996,400.00
Bed Net, Polyester, Deltamethrin, 100 dn, (1250 x 65 x 250 cm), White, Conical, Each	Liberia	09-Jul-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1764	25,000	25,000	$ 120,000.00
Bed Net, Polyester, Deltamethrin, 100 dn, (1250 x 65 x 250 cm), White, Conical, Each	Liberia	19-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1951	25,000	25,000	$ 120,000.00
Bed Net, Polyester, Deltamethrin, 100 dn, (1250 x 65 x 250 cm), White, Conical, Each	Senegal	06-Jan-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2082	95,000	95,000	$ 399,000.00
Bed Net, Polyester, Deltamethrin, 100 dn, (160 x 195 x 200 cm), Light Blue, Rectangular, Each	Benin	29-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2054	500,000	500,000	$ 1,645,000.00
Bed Net, Polyester, Deltamethrin, 100 dn, (160 x 195 x 200 cm), Light Blue, Rectangular, Each	Benin	29-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-2055	300,000	300,000	$ 987,000.00
Bed Net, Polyester, Deltamethrin, 100 dn, (240 x 120 x 150 cm) Hammock, light blue, piece	Cambodia	05-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1930	30,000	30,000	$ 60,600.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x150), light blue, rectangular, piece	South Sudan	07-Aug-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2238	100,000	100,000	$ 232,000.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x150), white, rectangular, piece	Laos	12-Sep-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1807	156,100	156,100	$ 462,056.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x150), white, rectangular, piece	Liberia	01-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1983	163,850	163,850	$ 445,672.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x150), white, rectangular, piece	South Sudan	07-Aug-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2238	100,000	100,000	$ 216,000.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x160), blue, rectangular, each	Nigeria	20-Oct-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1881	750,000	750,000	$ 2,212,500.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x160), blue, rectangular, each	Nigeria	20-Oct-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1882	750,000	750,000	$ 2,212,500.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x160), blue, rectangular, each	Nigeria	08-Jun-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2190	700,000	700,000	$ 1,617,000.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x160), blue, rectangular, each	Nigeria	12-Jun-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2193	536,650	536,650	$ 1,239,661.50
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x160), blue, rectangular, each	Nigeria	12-Jun-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2194	495,850	495,850	$ 1,145,413.50
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x160), white, rectangular, each	Nigeria	25-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1958	725,000	725,000	$ 2,037,250.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x160), white, rectangular, each	Nigeria	25-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1959	725,000	725,000	$ 2,037,250.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x160), white, rectangular, each	Nigeria	25-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1960	750,000	750,000	$ 2,107,500.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x160), white, rectangular, each	Nigeria	25-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1969	575,000	575,000	$ 1,575,500.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x160), white, rectangular, each	Nigeria	25-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1970	575,000	575,000	$ 1,575,500.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x160), white, rectangular, each	Nigeria	25-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1971	550,000	550,000	$ 1,507,000.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x160), white, rectangular, each	Nigeria	25-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1972	650,000	650,000	$ 1,781,000.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x160), white, rectangular, each	Nigeria	25-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1973	650,000	650,000	$ 1,781,000.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x160), white, rectangular, each	Nigeria	25-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1974	650,000	650,000	$ 1,781,000.00
Bed Net, Polyester, Deltamethrin, 100dn, (190x180x160), white, rectangular, each	Nigeria	25-Nov-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1975	650,000	650,000	$ 1,781,000.00
Bed Net, Polyethylene, Alphacypermethrin, 150 Denier (1050 x 56 x 220(H) cm), Conical, Blue	Zimbabwe	06-Jan-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2083	339,500	339,500	$ 1,130,535.00
Bed Net, Polyethylene, Alphacypermethrin,150 Denier (190(L) x 180(W) x 170(H) cm), Rectangular, Blue	Senegal	02-Dec-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1989	50,000	50,000	$ 159,500.00
Bed Net, Polyethylene, Permethrin, [FREENET] 150dn, (160x190x210cm), blue, rectangular, each	Kenya	13-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2134	650,000	650,000	$ 2,028,000.00
Bed Net, Polyethylene, Permethrin, [FREENET] 150dn, (160x190x210cm), blue, rectangular, each	Kenya	13-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2135	650,000	650,000	$ 2,028,000.00

Bed Net, Polyethylene, Permethrin, 150dn, (1250x65x250), white, conical, each	Rwanda	07-Jul-2014	Long-Lasting Insecticide Treated Net	PO-PUP-1761	1,400,000	1,400,000	$ 5,810,000.00
Bed Net, Polyethylene, Permethrin, 150dn, (1250x65x250), white, conical, each	Rwanda	06-Jan-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2084	375,000	375,000	$ 1,575,000.00
Bed Net,Polyester, Deltamethrin, 100 Denier, (190(L) x 160(W) x 210(H) cm), Rectangular, Blue	Kenya	05-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2120	650,000	650,000	$ 2,138,500.00
Bed Net,Polyester, Deltamethrin, 100 Denier, (190(L) x 160(W) x 210(H) cm), Rectangular, Blue	Kenya	05-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2121	650,000	650,000	$ 2,138,500.00
Bed Net,Polyethylene,Alpha-cypermethrin,150 Denier, FREENET (190(L) x 160(W) x 210(H) cm), Rectangular, Blue	Kenya	22-Jan-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2101	550,000	550,000	$ 1,809,500.00
Bed Net,Polyethylene,Alpha-cypermethrin,150 Denier, FREENET (190(L) x 160(W) x 210(H) cm), Rectangular, Blue	Kenya	05-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2112	650,000	650,000	$ 2,138,500.00
Bed Net,Polyethylene,Alpha-cypermethrin,150 Denier, FREENET (190(L) x 160(W) x 210(H) cm), Rectangular, Blue	Kenya	05-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2113	650,000	650,000	$ 2,138,500.00
Bed Net,Polyethylene,Alpha-cypermethrin,150 Denier, FREENET (190(L) x 160(W) x 210(H) cm), Rectangular, Blue	Kenya	05-Feb-2015	Long-Lasting Insecticide Treated Net	PO-PUP-2114	650,000	650,000	$ 2,138,500.00
Rapid Diagnostic Malaria, HRP2 pf (CareStart) K25	Nigeria	22-Apr-2015	Rapid Diagnostic Test Kit	PO-PUC-2060	60,000	1,500,000	$ 283,500.00
Rapid Diagnostic Malaria, HRP2 pf (CareStart) K25	Uganda	02-Jul-2015	Rapid Diagnostic Test Kit	PO-PUC-2086	17,834	445,850	$ 115,921.00
Rapid Diagnostic Malaria, HRP2 pf (CareStart) K25	Uganda	02-Jul-2015	Rapid Diagnostic Test Kit	PO-PUC-2087	18,000	450,000	$ 117,000.00
Test, Rapid Diagnostic Malaria, Ag HRP2 [First Response Malaria] kit, 25 tests	Liberia	13-Jan-2015	Rapid Diagnostic Test Kit	PO-PUC-1951	35,000	875,000	$ 175,000.00
Test, Rapid Diagnostic Malaria, Ag HRP2 [First Response Malaria] kit, 25 tests	Liberia	13-Jan-2015	Rapid Diagnostic Test Kit	PO-PUC-1952	35,000	875,000	$ 175,000.00
Test, Rapid Diagnostic Malaria, Ag HRP2 [First Response Malaria] kit, 25 tests	Zambia	31-Dec-2014	Rapid Diagnostic Test Kit	PO-PUC-1938	64,900	1,622,500	$ 348,837.50
Test, Rapid Diagnostic Malaria, Ag HRP2 [First Response Malaria] kit, 25 tests	Zimbabwe	07-Jul-2015	Rapid Diagnostic Test Kit	PO-PUC-2090	25,320	633,000	$ 139,260.00
Test, Rapid Diagnostic Malaria, Ag HRP2 Single Pack POCT [First Response Malaria] kit, 25 tests	Zimbabwe	15-Oct-2014	Rapid Diagnostic Test Kit	PO-PUC-1699	21,760	544,000	$ 146,880.00
Test, Rapid Diagnostic Malaria, Ag HRP2 Single Pack POCT [First Response Malaria] kit, 25 tests	Zimbabwe	15-Oct-2014	Rapid Diagnostic Test Kit	PO-PUC-1700	39,600	990,000	$ 267,300.00
Test, Rapid Diagnostic Malaria, Ag HRP2/pLDH Single Pack POCT [First Response Malaria] kit, 30 tests	Rwanda	20-May-2014	Rapid Diagnostic Test Kit	PO-PUC-1556	19,367	581,010	$ 273,074.70
Test, Rapid Diagnostic Malaria, Ag HRP2/pLDH Single Pack POCT [First Response Malaria] kit, 30 tests	Rwanda	14-Nov-2014	Rapid Diagnostic Test Kit	PO-PUC-1847	3,120	93,600	$ 43,992.00
Test, Rapid Diagnostic Malaria, Ag P.f/pv Device, [SD Bioline] 25 tests	Angola	29-Sep-2014	Rapid Diagnostic Test Kit	PO-PUC-1679	52,000	1,300,000	$ 780,000.00
Test, Rapid Diagnostic Malaria, Ag P.f/pv Device, [SD Bioline] 25 tests	Angola	29-Sep-2014	Rapid Diagnostic Test Kit	PO-PUC-1680	60,000	1,500,000	$ 900,000.00
Test, Rapid Diagnostic Malaria, Ag P.f/pv Device, [SD Bioline] 25 tests	Cambodia	08-Dec-2014	Rapid Diagnostic Test Kit	PO-PUC-1888	10,820	270,500	$ 102,790.00
Test, Rapid Diagnostic Malaria, Ag P.f/pv Device, [SD Bioline] 25 tests	Laos	28-May-2014	Rapid Diagnostic Test Kit	PO-PUC-1565	6,083	152,075	$ 86,682.75
Test, Rapid Diagnostic Malaria, Ag P.f/pv Device, [SD Bioline] 25 tests	Laos	28-May-2014	Rapid Diagnostic Test Kit	PO-PUC-1566	5,465	136,625	$ 77,876.25
Test, Rapid Diagnostic Malaria, Ag P.f/pv Device, [SD Bioline] 25 tests	Laos	20-Aug-2014	Rapid Diagnostic Test Kit	PO-PUC-1629	3,600	90,000	$ 51,300.00
Test, Rapid Diagnostic Malaria, Ag P.f/pv Device, [SD Bioline] 25 tests	Tanzania	05-May-2015	Rapid Diagnostic Test Kit	PO-PUC-2067	3,076	76,900	$ 34,605.00
Test, Rapid Diagnostic Malaria, Ag Pf (HRP2/pLDH) POCT [SD Bioline Malaria] kit, 25 tests	Kenya	17-Mar-2015	Rapid Diagnostic Test Kit	PO-PUC-2044	136,000	3,400,000	$ 1,292,000.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Benin	08-Jan-2015	Rapid Diagnostic Test Kit	PO-PUC-1947	40,000	1,000,000	$ 430,000.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Benin	08-Jan-2015	Rapid Diagnostic Test Kit	PO-PUC-1948	28,000	700,000	$ 301,000.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Burkina Faso	14-Nov-2014	Rapid Diagnostic Test Kit	PO-PUC-1843	80,000	2,000,000	$ 860,000.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Burkina Faso	14-Nov-2014	Rapid Diagnostic Test Kit	PO-PUC-1845	80,000	2,000,000	$ 860,000.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Burkina Faso	15-Apr-2015	Rapid Diagnostic Test Kit	PO-PUC-2052	15,400	385,000	$ 165,550.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Malawi	26-Jan-2015	Rapid Diagnostic Test Kit	PO-PUC-1958	132,000	3,300,000	$ 957,000.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Malawi	07-Apr-2015	Rapid Diagnostic Test Kit	PO-PUC-2048	60,000	1,500,000	$ 435,000.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Malawi	13-Aug-2015	Rapid Diagnostic Test Kit	PO-PUC-2123	116,000	2,900,000	$ 725,000.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Mali	03-Feb-2015	Rapid Diagnostic Test Kit	PO-PUC-2023	20,000	500,000	$ 215,000.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Mali	16-Apr-2015	Rapid Diagnostic Test Kit	PO-PUC-2053	60,000	1,500,000	$ 645,000.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Mozambique	19-Mar-2015	Rapid Diagnostic Test Kit	PO-PUC-2046	240,000	6,000,000	$ 1,260,000.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Nigeria	14-Jul-2015	Rapid Diagnostic Test Kit	PO-PUC-2096	62,800	1,570,000	$ 258,736.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Nigeria	14-Jul-2015	Rapid Diagnostic Test Kit	PO-PUC-2097	64,000	1,600,000	$ 263,680.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Nigeria	14-Jul-2015	Rapid Diagnostic Test Kit	PO-PUC-2098	81,920	2,048,000	$ 337,510.40
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Senegal	12-Nov-2014	Rapid Diagnostic Test Kit	PO-PUC-1836	29,692	742,300	$ 319,189.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Senegal	12-Nov-2014	Rapid Diagnostic Test Kit	PO-PUC-1837	44,538	1,113,450	$ 478,783.50
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Senegal	20-Aug-2015	Rapid Diagnostic Test Kit	PO-PUC-2127	28,000	700,000	$ 301,000.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Zambia	13-Nov-2014	Rapid Diagnostic Test Kit	PO-PUC-1838	80,000	2,000,000	$ 420,000.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Zambia	31-Jul-2015	Rapid Diagnostic Test Kit	PO-PUC-2110	22,000	550,000	$ 104,500.00
Test, Rapid Diagnostic Malaria, Ag Pf/Pan POCT [SD Bioline Malaria] kit, 25 tests	Madagascar	19-Feb-2015	Rapid Diagnostic Test Kit	PO-PUC-2034	80,000	2,000,000	$ 600,000.00
Test, Rapid Diagnostic Malaria, Ag Pf/PAN, [SD Bioline], Kit 25 tests	Burundi	20-Aug-2014	Rapid Diagnostic Test Kit	PO-PUC-1628	120,000	3,000,000	$ 1,410,000.00
Test, Rapid Diagnostic Malaria, Ag Pf/PAN, [SD Bioline], Kit 25 tests	Burundi	25-Nov-2014	Rapid Diagnostic Test Kit	PO-PUC-1861	88,000	2,200,000	$ 1,034,000.00
Test, Rapid Diagnostic Malaria, Ag Pf/PAN, [SD Bioline], Kit 25 tests	Congo, Democratic Republic of	15-May-2015	Rapid Diagnostic Test Kit	PO-PUC-2069	115,000	2,875,000	$ 1,351,250.00
Test, Rapid Diagnostic Malaria, Ag Pf/PAN, [SD Bioline], Kit 25 tests	Tanzania	01-Jun-2015	Rapid Diagnostic Test Kit	PO-PUC-2074	156,966	3,924,150	$ 1,765,867.50
Test, Rapid Diagnostic Malaria, Ag Pf/PAN, [SD Bioline], Kit 25 tests	Zimbabwe	15-May-2015	Rapid Diagnostic Test Kit	PO-PUC-2068	3,600	90,000	$ 40,500.00
Test, Rapid Diagnostic Malaria, Ag Pf/PAN, [SD Bioline], Kit 25 tests	Zimbabwe	17-Jun-2015	Rapid Diagnostic Test Kit	PO-PUC-2076	3,240	81,000	$ 36,450.00
Test, Rapid Diagnostic Malaria, Ag Pf/Pv, POCT [SD Bioline] Kit 25 tests,	Cambodia	16-Oct-2014	Rapid Diagnostic Test Kit	PO-PUC-1701	600	15,000	$ 5,700.00
Test, Rapid Diagnostic Malaria, Ag Pf/Pv, POCT [SD Bioline] Kit 25 tests,	Myanmar	08-Sep-2014	Rapid Diagnostic Test Kit	PO-PUC-1652	2,000	50,000	$ 25,000.00

Test, Rapid Diagnostic Malaria, Ag Pf/Pv, POCT [SD Bioline] Kit 25 tests,	Myanmar	19-Feb-2015	Rapid Diagnostic Test Kit	PO-PUC-2033	8,000	200,000	$ 96,000.00
Test, Rapid Diagnostic Malaria, Pf HPRII [ParaCheck], Kit 25 tests	Malawi	01-Oct-2014	Rapid Diagnostic Test Kit	PO-PUC-1689	120,000	3,000,000	$ 900,000.00
Test, Rapid Diagnostic Malaria, Pf HPRII [ParaCheck], Kit 25 tests	Malawi	01-Oct-2014	Rapid Diagnostic Test Kit	PO-PUC-1690	40,000	1,000,000	$ 300,000.00
Test, Rapid Diagnostic, First Response Malaria Ag Combo, HRP2/pLDH, kits of 25	Tanzania	13-Jan-2015	Rapid Diagnostic Test Kit	PO-PUC-1953	24,611	615,275	$ 153,818.75
Acetylsalicylic Acid 300mg, 1000 tablets	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2161	13,000	13,000,000	$ 39,780.00
Adrenaline Injection (Epinephrine), 1mg/1ml ampoule, 100 ampoules per pack	Zambia	14-Oct-2014	Essential Medicines Malaria	PO-PUP-1864	1,400	140,000	$ 17,920.00
Amoxicillin 125 mg/5 ml powder for suspension, 100 ml, each	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1858	410,000	410,000	$ 196,800.00
Amoxicillin 125 mg/5 ml powder for suspension, 100 ml, each	Zambia	03-Feb-2015	Essential Medicines Malaria	PO-PUP-2116	495,000	495,000	$ 237,600.00
Amoxicillin 125 mg/5 ml powder for suspension, 100 ml, each	Zambia	03-Feb-2015	Essential Medicines Malaria	PO-PUP-2118	495,000	495,000	$ 237,600.00
Amoxicillin 125 mg/5 ml powder for suspension, 100 ml, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2165	495,000	495,000	$ 237,600.00
Amoxicillin 125 mg/5 ml powder for suspension, 100 ml, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2166	505,000	505,000	$ 242,400.00
Benzylpenicillin 5mu/vial	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1861	4,400	220,000	$ 40,656.00
Cephalexin 125 mg/5 ml powder for suspension, 100 ml bottle, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2162	250,000	250,000	$ 228,650.00
Cephalexin 250 mg, 10 x 10 blister capsules, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2162	120,000	12,000,000	$ 415,608.00
Chloramphenicol 125 mg/5 ml liquid suspension, 100 ml	Zambia	14-Oct-2014	Essential Medicines Malaria	PO-PUP-1865	2,500	25,000	$ 17,525.00
Chloramphenicol 1g as Sodium Succinate, powder for injection	Zambia	14-Oct-2014	Essential Medicines Malaria	PO-PUP-1863	1,700	85,000	$ 39,083.00
Chloramphenicol 1g as Sodium Succinate, powder for injection	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2157	1,600	80,000	$ 36,784.00
Chlorphenamine Maleate 4mg, 1000 tablets	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1859	17,000	17,000,000	$ 34,000.00
Ciprofloxacin 250mg tabs	Zambia	15-Oct-2014	Essential Medicines Malaria	PO-PUP-1866	60,000	6,000,000	$ 85,800.00
Ciprofloxacin 250mg tabs	Zambia	10-Feb-2015	Essential Medicines Malaria	PO-PUP-2131	70,000	7,000,000	$ 99,400.00
Cloxacillin 125 mg/5 ml powder for suspension, 100 ml, each	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1860	90,000	90,000	$ 64,287.00
Cloxacillin 125 mg/5 ml powder for suspension, 100 ml, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2163	100,000	100,000	$ 71,430.00
Cloxacillin 250mg caps	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2162	30,000	30,000,000	$ 628,941.00
Cloxacillin 500mg, powder for injection	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1860	3,000	150,000	$ 28,920.00
Cloxacillin 500mg, powder for injection	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2163	4,000	200,000	$ 38,560.00
Doxycycline 100 mg (as hyclate), caps	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1857	3,000	3,000,000	$ 45,870.00
Doxycycline 100 mg (as hyclate), caps	Zambia	10-Feb-2015	Essential Medicines Malaria	PO-PUP-2132	6,000	6,000,000	$ 83,220.00
Erythromycin 125 mg/5 ml powder for suspension, 100 ml bottle	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1855	1,200	300,000	$ 399,036.00
Erythromycin 125 mg/5 ml powder for suspension, 100 ml bottle, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2158	400,000	400,000	$ 564,000.00
Erythromycin 250mg, as Stearate	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1856	30,000	30,000,000	$ 878,100.00
Erythromycin 250mg, as Stearate	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2159	25,000	25,000,000	$ 687,750.00
Ferrous Sulphate 200mg, sugar-coated, 1000 tablets	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1859	14,000	14,000,000	$ 34,300.00
Ferrous Sulphate 50 mg, sugar-coated, 1000 tablets	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1859	3,400	3,400,000	$ 6,120.00
Nalidixic Acid 300 mg/5 ml liquid for suspension, 100 ml, each	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1860	30,000	30,000	$ 52,200.00
Nalidixic Acid 300 mg/5 ml liquid for suspension, 100 ml, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2163	25,000	25,000	$ 43,500.00
Phenoxymethylpenicillin 250mg	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2164	20,000	20,000,000	$ 309,400.00
Phenoxymethylpenicillin 250mg tabs	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1861	20,000	20,000,000	$ 309,400.00
Salbutamol Inhaler, 0.1mg/dose, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2160	60,000	60,000	$ 84,000.00
12 Volt DC Battery pack with Charger, each	Myanmar	02-Oct-2014	Malaria Misc. Commodities	PO-PUP-1844	4	4	$ 760.32
20 foot standard ocean container, each	Liberia	19-Nov-2014	Malaria Misc. Commodities	PO-PUP-1942	1	1	$ 2,550.00
20 foot standard ocean container, each	Liberia	19-Nov-2014	Malaria Misc. Commodities	PO-PUP-1943	1	1	$ 2,550.00
20 foot standard ocean container, each	Liberia	19-Nov-2014	Malaria Misc. Commodities	PO-PUP-1944	1	1	$ 2,550.00
20 foot standard ocean container, each	Liberia	19-Nov-2014	Malaria Misc. Commodities	PO-PUP-1945	1	1	$ 2,550.00
20 foot standard ocean container, each	Liberia	19-Nov-2014	Malaria Misc. Commodities	PO-PUP-1946	1	1	$ 2,550.00
20 foot standard ocean container, each	Liberia	19-Nov-2014	Malaria Misc. Commodities	PO-PUP-1947	1	1	$ 2,550.00
20 foot standard ocean container, each	Liberia	19-Nov-2014	Malaria Misc. Commodities	PO-PUP-1948	1	1	$ 2,550.00
20 foot standard ocean container, each	Liberia	19-Nov-2014	Malaria Misc. Commodities	PO-PUP-1949	1	1	$ 2,550.00
20 foot standard ocean container, each	Liberia	19-Nov-2014	Malaria Misc. Commodities	PO-PUP-1950	1	1	$ 2,550.00
20 foot standard ocean container, each	Liberia	19-Nov-2014	Malaria Misc. Commodities	PO-PUP-1951	6	6	$ 15,300.00
360 degree Flexible LED Light for Microscope, Each	Senegal	02-Feb-2015	Malaria Misc. Commodities	PO-PUP-2109	20	20	$ 337.60
40 foot standard ocean container	Mozambique	10-Feb-2015	Malaria Misc. Commodities	PO-PUP-2124	13	13	$ 19,562.40
40 foot standard ocean container	Mozambique	10-Feb-2015	Malaria Misc. Commodities	PO-PUP-2125	7	7	$ 10,533.60
40 foot standard ocean container	Mozambique	10-Feb-2015	Malaria Misc. Commodities	PO-PUP-2126	6	6	$ 9,028.80
40 foot standard ocean container	Mozambique	10-Feb-2015	Malaria Misc. Commodities	PO-PUP-2127	13	13	$ 19,562.40
40 foot standard ocean container	Mozambique	10-Feb-2015	Malaria Misc. Commodities	PO-PUP-2128	7	7	$ 10,533.60

40 foot standard ocean container	Mozambique	10-Feb-2015	Malaria Misc. Commodities	PO-PUP-2129	6	6	$ 9,028.80
6 Volt Gel Cell Battery, each	Myanmar	02-Oct-2014	Malaria Misc. Commodities	PO-PUP-1844	65	65	$ 1,686.75
Abbe Condenser, for Microscope BX53, NA 1.1, 4X-100X Coverage, [6-U111], each	Liberia	12-Dec-2014	Malaria Misc. Commodities	PO-PUP-2043	2	2	$ 427.92
Automatic Charger for two 6 Volt Batteries	Myanmar	02-Oct-2014	Malaria Misc. Commodities	PO-PUP-1842	14	14	$ 3,412.50
Box, Wooden, for Microscope CX22, each	Mozambique	03-Mar-2015	Malaria Misc. Commodities	PO-PUP-2155	10	10	$ 892.50
Box, Wooden, for Microscope CX22, each	Senegal	15-Dec-2014	Malaria Misc. Commodities	PO-PUP-2045	20	20	$ 1,785.00
Box, Wooden, for Microscope CX22, each	Tanzania	14-Oct-2014	Malaria Misc. Commodities	PO-PUP-1862	20	20	$ 1,785.00
Bulb, Halogen, 6V 20W for Microscope CX22, each	Benin	15-Apr-2015	Malaria Misc. Commodities	PO-PUP-2181	15	15	$ 23.40
Bulb, halogen, 6v/20w for microscope (CX22)	Angola	09-Sep-2014	Malaria Misc. Commodities	PO-PUP-1794	2	2	$ 34.00
Camera, Digital, DP73 for use with BX53 Microscope, each	Mozambique	03-Mar-2015	Malaria Misc. Commodities	PO-PUP-2155	2	2	$ 13,969.24
Case, aluminum, for microscope (CX22)	Angola	09-Sep-2014	Malaria Misc. Commodities	PO-PUP-1794	2	2	$ 570.00
Case, wooden, for microscope (CX22)	Benin	15-Apr-2015	Malaria Misc. Commodities	PO-PUP-2181	15	15	$ 1,338.75
Collapsible Cage, 12 x 12 x 12, each	Myanmar	02-Oct-2014	Malaria Misc. Commodities	PO-PUP-1844	25	25	$ 4,072.25
Collapsible Cage, 18 x 18 x 18, each	Myanmar	02-Oct-2014	Malaria Misc. Commodities	PO-PUP-1844	20	20	$ 5,160.20
Collecting Cups with lids, 20 x 20, 10 per set	Myanmar	02-Oct-2014	Malaria Misc. Commodities	PO-PUP-1843	5	50	$ 295.70
Cord Hanger for CX22LED microscope, each	Mozambique	03-Mar-2015	Malaria Misc. Commodities	PO-PUP-2155	10	10	$ 105.30
Cover, Dust, Hood Type for CX Microscopes, each	Senegal	15-Dec-2014	Malaria Misc. Commodities	PO-PUP-2045	20	20	$ 92.60
Dark Field Stop for CX22LED microscope, each	Mozambique	03-Mar-2015	Malaria Misc. Commodities	PO-PUP-2155	10	10	$ 30.20
Eyepiece for microscope CX22LED, 15x each	Mozambique	03-Mar-2015	Malaria Misc. Commodities	PO-PUP-2155	10	10	$ 1,399.50
Filar micrometer with reticle holder for CX22LED microscope, each	Mozambique	03-Mar-2015	Malaria Misc. Commodities	PO-PUP-2155	10	10	$ 416.70
Filter Holder for CX22LED microscope, each	Mozambique	03-Mar-2015	Malaria Misc. Commodities	PO-PUP-2155	10	10	$ 46.80
Gloves, examination, Latex, Powdered, Disposable, Size Medium, pack of 100	Rwanda	07-May-2014	Malaria Misc. Commodities	PO-PUP-1729	11,621	1,162,100	$ 32,073.96
Gloves, Latex; Examination; Powder-Free; Disposable; Ambidextrous; Non-Sterile; Medium; Case of 1,000 pcs	Malawi	30-Dec-2014	Malaria Misc. Commodities	PO-PUP-2074	4,000	4,000,000	$ 118,240.00
Gloves, Latex; Powder-free; White; Single-use; Ambidextrous, Medium, pack of 100	Laos	27-Oct-2014	Malaria Misc. Commodities	PO-PUP-1919	7,000	700,000	$ 21,700.00
Gloves; Latex, Examination, Powder-free, Disposable, Ambidextrous, Non-Sterile, Large, Beige, Box of 100	Guinea	02-Mar-2015	Malaria Misc. Commodities	PO-PUP-2148	5,436	543,600	$ 15,546.96
Gloves; Latex, Examination, Powder-free, Disposable, Ambidextrous, Non-Sterile, Medium, Beige, Box of 100	Guinea	02-Mar-2015	Malaria Misc. Commodities	PO-PUP-2148	5,436	543,600	$ 13,861.80
Gloves; Latex, Examination, Powder-free, Disposable, Ambidextrous, Non-Sterile, Medium, Beige, Case of 1,000 pcs	Malawi	16-Jan-2015	Malaria Misc. Commodities	PO-PUP-2100	3,523	3,523,000	$ 89,836.50
Insect Mounting Kit, each	Myanmar	02-Oct-2014	Malaria Misc. Commodities	PO-PUP-1843	5	5	$ 318.40
Kit, microscope, malaria [Microscopy Kit Angola 2014], unit	Angola	09-Sep-2014	Malaria Misc. Commodities	PO-PUP-1794	180	180	$ 119,709.00
Kit, microscope, malaria [Microscopy Kit Benin 2014]	Benin	29-Apr-2015	Malaria Misc. Commodities	PO-PUP-2185	15	15	$ 11,213.70
Microplate Absorbance reader with software, each	Myanmar	02-Oct-2014	Malaria Misc. Commodities	PO-PUP-1845	1	1	$ 6,171.88
Microscope binocular (CX22) each	Benin	15-Apr-2015	Malaria Misc. Commodities	PO-PUP-2181	15	15	$ 12,353.70
Microscope binocular with Objectives W/4, 10, 40, Plan OB, with lamp/mirror/filterholder (CX22) each	Angola	09-Sep-2014	Malaria Misc. Commodities	PO-PUP-1794	2	2	$ 3,022.00
Microscope slide box, holds 50 slides, each	Mozambique	03-Mar-2015	Malaria Misc. Commodities	PO-PUP-2156	200	200	$ 3,088.00
Microscope slide mailer, holds 5 slides (75 x 25 mm), case of 1,200	Mozambique	03-Mar-2015	Malaria Misc. Commodities	PO-PUP-2156	1	1	$ 283.05
Microscope slides (frosted end) in packs/boxes of 50	Senegal	27-Aug-2015	Malaria Misc. Commodities	PO-PUP-2252	3,300	165,000	$ 1,584.00
Microscope, CX22LED, with objectives 4x, 10x, 40x, and 100x Plan OB, each	Mozambique	03-Mar-2015	Malaria Misc. Commodities	PO-PUP-2155	10	10	$ 8,233.70
Microscope, CX22LED, with objectives 4x, 10x, 40x, and 100x Plan OB, each	Senegal	27-Feb-2015	Malaria Misc. Commodities	PO-PUP-2146	20	20	$ 16,467.40
Microscope, CX22LED, with objectives 4x, 10x, 40x, and 100x Plan OB, each	Tanzania	14-Oct-2014	Malaria Misc. Commodities	PO-PUP-1862	20	20	$ 16,467.40
Miniature Insect Light Trap, each	Myanmar	02-Oct-2014	Malaria Misc. Commodities	PO-PUP-1844	30	30	$ 3,502.80
Mirror unit for microscope	Benin	15-Apr-2015	Malaria Misc. Commodities	PO-PUP-2181	15	15	$ 172.95
Mirror Unit, for Microscope CX22, each	Mozambique	03-Mar-2015	Malaria Misc. Commodities	PO-PUP-2155	10	10	$ 115.30
Mobile Healthcare Printer model# QLn320, each	Mozambique	03-Mar-2015	Malaria Misc. Commodities	PO-PUP-2155	2	2	$ 2,134.58
No-See-Um Catch bag with cup, each	Myanmar	02-Oct-2014	Malaria Misc. Commodities	PO-PUP-1844	65	65	$ 1,284.40
Power cord, for microscope	Benin	15-Apr-2015	Malaria Misc. Commodities	PO-PUP-2181	15	15	$ 263.25
Printer Paper for Microplate Absorbance Reader, 3 rolls	Myanmar	02-Oct-2014	Malaria Misc. Commodities	PO-PUP-1845	2	6	$ 140.00
Replacement Battery, 12 Volt DC, each	Myanmar	02-Oct-2014	Malaria Misc. Commodities	PO-PUP-1844	4	4	$ 398.32
Safety box, disposable plastic, autoclavable, incinerator safe, puncture-resistant,locking lids, 5L, each	Malawi	13-Mar-2015	Malaria Misc. Commodities	PO-PUP-2168	5,730	5,730	$ 7,907.40
Safety boxes, Hexagonal, 5 liter, for disposal of used sharps, each	Madagascar	27-Jan-2015	Malaria Misc. Commodities	PO-PUP-2105	38,020	38,020	$ 21,671.40
Safety boxes, Hexagonal, 5 liter, for disposal of used sharps, each	Malawi	28-Jan-2015	Malaria Misc. Commodities	PO-PUP-2106	30,000	30,000	$ 17,100.00
Safety boxes, Square, 5 liter, for disposal of used sharps, Box of 100	Laos	19-Nov-2014	Malaria Misc. Commodities	PO-PUP-1952	8,310	8,310	$ 4,487.40
Sealed, Gelled-Electrolyte Battery, 6V, 10 amp/hr, each	Myanmar	02-Oct-2014	Malaria Misc. Commodities	PO-PUP-1842	30	30	$ 1,117.50
Slides for microscopes, beveled edges, frosted, 75 x 25 mm, pack of 144	Mozambique	03-Mar-2015	Malaria Misc. Commodities	PO-PUP-2156	35	35	$ 792.05
Slides for Microscopes, frosted, 76.2 x 25.4 mm, 20 x Box 50 Slides, each	Senegal	15-Dec-2014	Malaria Misc. Commodities	PO-PUP-2045	165	165,000	$ 1,584.00
Stereo Microscope SZ61, EA	Cambodia	02-Jul-2015	Malaria Misc. Commodities	PO-PUP-2204	8	8	$ 21,983.20

Stereo Microscope SZX7, EA	Cambodia	02-Jul-2015	Malaria Misc. Commodities	PO-PUP-2204	2	2	$ 10,851.20
Syringe 5ml, 2-part, luer slip, eccentric luer nozzle, with by-packed needle 21Gx1.5" (0.8 x 38-40mm) with protection cap, sterile, disposable., box of 100	Congo, Democratic Republic of	05-Sep-2014	Malaria Misc. Commodities	PO-PUP-1791	9,000	900,000	$ 53,190.00
Syringe 5ml, 2-part, luer slip, eccentric luer nozzle, with by-packed needle 21Gx1.5" (0.8 x 38-40mm) with protection cap, sterile, disposable., box of 100	Congo, Democratic Republic of	21-Apr-2015	Malaria Misc. Commodities	PO-PUP-2184	7,000	700,000	$ 22,050.00
Syringe, hypodermic, Luer, 2-part, 10 ml + needle 21 G x 1.5" (0.80 x 40 mm), disposable, box of 100	Mali	15-Sep-2014	Malaria Misc. Commodities	PO-PUP-1811	2,000	200,000	$ 10,000.00
Syringe, hypodermic, Luer, 2-part, 5 ml + needle 21 G x 1.5" (0.80 x 40 mm), disposable, box of 100	Congo, Democratic Republic of	05-Sep-2014	Malaria Misc. Commodities	PO-PUP-1790	2,000	200,000	$ 5,220.00
Syringe, hypodermic, Luer, 2-part, 5 ml + needle 21 G x 1.5" (0.80 x 40 mm), disposable, box of 100	Mali	15-Sep-2014	Malaria Misc. Commodities	PO-PUP-1811	2,000	200,000	$ 5,200.00
Trap Mounted two D-Cell Battery Holders, pair	Myanmar	02-Oct-2014	Malaria Misc. Commodities	PO-PUP-1842	50	50	$ 1,047.50
Wire Pointer for CX22LED microscope, each	Mozambique	03-Mar-2015	Malaria Misc. Commodities	PO-PUP-2155	10	10	$ 5.90
Rectal Artesunate suppository 50 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1599	100	600	$ 225.00
Rectal Artesunate suppository 50 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1601	140	840	$ 315.00
Rectal Artesunate suppository 50 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1602	200	1,200	$ 450.00
Rectal Artesunate suppository 50 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1603	840	5,040	$ 1,890.00
Rectal Artesunate suppository 50 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1604	1,140	6,840	$ 2,565.00
Rectal Artesunate suppository 50 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1605	240	1,440	$ 540.00
Rectal Artesunate suppository 50 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1606	1,140	6,840	$ 2,565.00
Rectal Artesunate suppository 50 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1607	480	2,880	$ 1,080.00
Rectal Artesunate suppository 50 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1608	240	1,440	$ 540.00
Rectal Artesunate suppository 50 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1609	80	480	$ 180.00
Rectal Artesunate suppository 50 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1610	360	2,160	$ 810.00
Rectal Artesunate suppository 50 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1611	480	2,880	$ 1,080.00
Rectal Artesunate suppository 50 mg, pack of 6	Congo, Democratic Republic of	28-Aug-2014	Malaria Pharmaceuticals	PO-PUP-1777	2,490	14,940	$ 6,772.80
Rectal Artesunate suppository 50 mg, pack of 6	Ghana	17-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1869	5,404	32,424	$ 11,132.24
Rectal Artesunate suppository 50 mg, pack of 6	Guinea	25-Nov-2014	Malaria Pharmaceuticals	PO-PUP-1966	9,333	55,998	$ 19,225.98
Rectal Artesunate suppository 50 mg, pack of 6	Malawi	20-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1879	20,300	121,800	$ 41,412.00
Rectal Artesunate suppository 50 mg, pack of 6	Senegal	20-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1878	3,300	19,800	$ 6,798.00
Rectal Artesunate suppository 50 mg, pack of 6	Zimbabwe	29-Jul-2014	Malaria Pharmaceuticals	PO-PUP-1768	5,400	32,400	$ 11,988.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Congo, Democratic Republic of	05-Sep-2014	Malaria Pharmaceuticals	PO-PUP-1790	99,250	99,250	$ 184,605.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Congo, Democratic Republic of	05-Sep-2014	Malaria Pharmaceuticals	PO-PUP-1791	450,000	450,000	$ 792,000.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Congo, Democratic Republic of	21-Apr-2015	Malaria Pharmaceuticals	PO-PUP-2184	350,000	350,000	$ 602,000.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Ghana	26-Sep-2014	Malaria Pharmaceuticals	PO-PUP-1825	450,000	450,000	$ 792,000.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Laos	15-Dec-2014	Malaria Pharmaceuticals	PO-PUP-2044	10,000	10,000	$ 18,300.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Liberia	07-Nov-2014	Malaria Pharmaceuticals	PO-PUP-1932	175,000	175,000	$ 318,500.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Malawi	09-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1854	278,000	278,000	$ 494,840.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Mali	15-Sep-2014	Malaria Pharmaceuticals	PO-PUP-1811	400,000	400,000	$ 740,000.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Mozambique	15-Sep-2014	Malaria Pharmaceuticals	PO-PUP-1810	464,400	464,400	$ 817,344.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Nigeria	08-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1851	24,200	24,200	$ 43,076.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Nigeria	08-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1852	20,000	20,000	$ 35,600.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Rwanda	20-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1875	45,000	45,000	$ 80,100.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Rwanda	10-Jun-2015	Malaria Pharmaceuticals	PO-PUP-2191	106,000	106,000	$ 187,620.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Senegal	20-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1876	25,000	25,000	$ 44,250.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Singapore	15-Jul-2015	Malaria Pharmaceuticals	PO-PUP-2212	450,000	450,000	$ 792,000.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Tanzania	30-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1923	601,015	601,015	$ 1,057,786.40
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Tanzania	25-Nov-2014	Malaria Pharmaceuticals	PO-PUP-1964	1,005,468	1,005,468	$ 1,739,459.64
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Uganda	02-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1841	205,000	205,000	$ 360,800.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Zambia	02-Sep-2014	Malaria Pharmaceuticals	PO-PUP-1778	60,000	60,000	$ 109,200.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Zambia	02-Sep-2014	Malaria Pharmaceuticals	PO-PUP-1779	60,000	60,000	$ 109,200.00
1 vial Artesunate injection 60mg + 1 sodium bicarbonate solvent + 1 sodium chloride solvent, each	Zimbabwe	05-Aug-2014	Malaria Pharmaceuticals	PO-PUP-1771	182,755	182,755	$ 332,614.10
Amodiaquine, 150 mg, Tablet, 1 x 6 blister, 2 blisters per pack	Senegal	12-Dec-2014	Malaria Pharmaceuticals	PO-PUP-2039	606,500	1,213,000	$ 274,138.00
Artemether 20mg/ml, 1ml inj., Pack of 30 ampoules	Liberia	08-Jul-2014	Malaria Pharmaceuticals	PO-PUP-1762	1,667	50,010	$ 15,336.40
Artemether 20mg/ml, 1ml inj., Pack of 30 ampoules	Liberia	02-Dec-2014	Malaria Pharmaceuticals	PO-PUP-2008	1,167	35,010	$ 11,319.90
Artemether 20mg/ml, 1ml inj., Pack of 30 ampoules	Liberia	02-Dec-2014	Malaria Pharmaceuticals	PO-PUP-2016	2,400	72,000	$ 22,008.00
Artemether 40mg/ml, 1ml inj. Pack of 6	Guinea	23-Dec-2014	Malaria Pharmaceuticals	PO-PUP-2049	2,665	15,990	$ 5,143.45
Artemether 40mg/ml, 1ml inj. Pack of 6	Singapore	22-Sep-2014	Malaria Pharmaceuticals	PO-PUP-1819	29,520	177,120	$ 51,795.79
Artemether 80mg/ml, 1ml inj. Pack of 6	Guinea	23-Dec-2014	Malaria Pharmaceuticals	PO-PUP-2046	1,867	11,202	$ 2,893.85
Artemether 80mg/ml, 1ml inj. Pack of 6	Liberia	02-Dec-2014	Malaria Pharmaceuticals	PO-PUP-2012	15,000	90,000	$ 22,800.00

Artemether 80mg/ml, 1ml inj. Pack of 6	Liberia	02-Dec-2014	Malaria Pharmaceuticals	PO-PUP-2013	61,667	370,002	$ 90,033.82
Artemether 80mg/ml, 1ml inj. Pack of 6	Singapore	22-Sep-2014	Malaria Pharmaceuticals	PO-PUP-1819	14,760	88,560	$ 34,234.34
Atropine Injection, 0.6 mg/1 ml ampoule, 10 ampoules per pack	Zambia	02-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1560	7,199	71,990	$ 37,794.75
Dihydroartemisinin-Piperaquine: DHA-PQP (Eurartesim) 40mg/320mg, tablet, 3 tablet pack	Cambodia	05-Jan-2015	Malaria Pharmaceuticals	PO-PUP-2081	1,450	4,350	$ 1,348.50
Dihydroartemisinin-Piperaquine: DHA-PQP (Eurartesim) 40mg/320mg, tablet, 6 tablet pack	Cambodia	05-Jan-2015	Malaria Pharmaceuticals	PO-PUP-2081	2,000	12,000	$ 2,920.00
Dihydroartemisinin-Piperaquine: DHA-PQP (Eurartesim) 40mg/320mg, tablet, 9 tablet pack	Cambodia	05-Jan-2015	Malaria Pharmaceuticals	PO-PUP-2081	14,820	133,380	$ 29,343.60
Malarone 250/100mg, Box of 12 Tablets	Burundi	02-Apr-2015	Malaria Pharmaceuticals	PO-PUP-2172	600	600	$ 13,176.00
Quinine di-HCl (injectable) 600mg/2ml, pack of 100	Singapore	22-Sep-2014	Malaria Pharmaceuticals	PO-PUP-1819	2,466	246,600	$ 59,593.36
Quinine sulphate (tablets) 200mg	Liberia	08-Jul-2014	Malaria Pharmaceuticals	PO-PUP-1763	776	776,000	$ 32,436.80
Quinine sulphate (tablets) 300mg, bottle of 1,000	Congo, Democratic Republic of	25-Nov-2014	Malaria Pharmaceuticals	PO-PUP-1967	1,540	1,540,000	$ 72,457.00
Quinine sulphate (tablets) 300mg, bottle of 1,000	Guinea	25-Nov-2014	Malaria Pharmaceuticals	PO-PUP-1965	4,000	4,000,000	$ 184,800.00
Quinine sulphate (tablets) 300mg, bottle of 1,000	Liberia	02-Dec-2014	Malaria Pharmaceuticals	PO-PUP-2011	2,500	2,500,000	$ 117,625.00
Quinine sulphate (tablets) 300mg, bottle of 1,000	Liberia	02-Dec-2014	Malaria Pharmaceuticals	PO-PUP-2015	8,750	8,750,000	$ 402,150.00
Quinine sulphate (tablets) 300mg, bottle of 1,000	Singapore	22-Sep-2014	Malaria Pharmaceuticals	PO-PUP-1819	1,001	1,001,000	$ 47,471.52
Rectal Artesunate suppository 200 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1599	590	3,540	$ 2,271.50
Rectal Artesunate suppository 200 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1601	1,010	6,060	$ 3,888.50
Rectal Artesunate suppository 200 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1602	1,740	10,440	$ 6,699.00
Rectal Artesunate suppository 200 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1603	6,120	36,720	$ 23,562.00
Rectal Artesunate suppository 200 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1604	8,700	52,200	$ 33,495.00
Rectal Artesunate suppository 200 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1605	1,680	10,080	$ 6,468.00
Rectal Artesunate suppository 200 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1606	8,880	53,280	$ 34,188.00
Rectal Artesunate suppository 200 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1607	3,300	19,800	$ 12,705.00
Rectal Artesunate suppository 200 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1608	1,470	8,820	$ 5,659.50
Rectal Artesunate suppository 200 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1609	480	2,880	$ 1,848.00
Rectal Artesunate suppository 200 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1610	2,520	15,120	$ 9,702.00
Rectal Artesunate suppository 200 mg, pack of 6	Congo, Democratic Republic of	30-Dec-2013	Malaria Pharmaceuticals	PO-PUP-1611	4,350	26,100	$ 16,747.50
Rectal Artesunate suppository 200 mg, pack of 6	Congo, Democratic Republic of	28-Aug-2014	Malaria Pharmaceuticals	PO-PUP-1777	19,440	116,640	$ 78,537.60
Rectal Artesunate suppository 200 mg, pack of 6	Ghana	17-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1869	3,746	22,476	$ 14,834.16
Rectal Artesunate suppository 200 mg, pack of 6	Guinea	25-Nov-2014	Malaria Pharmaceuticals	PO-PUP-1966	4,416	26,496	$ 17,487.36
Rectal Artesunate suppository 200 mg, pack of 6	Senegal	20-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1878	5,100	30,600	$ 20,196.00
Rectal Artesunate suppository 200 mg, pack of 6	Zimbabwe	29-Jul-2014	Malaria Pharmaceuticals	PO-PUP-1767	5,400	32,400	$ 20,790.00
Sulfadoxine/Pyrimethamine 250mg/12.5mg + amodiaquine (75mg), Pack of 25 co-blisters	Mali	11-Dec-2014	Malaria Pharmaceuticals	PO-PUP-2037	11,200	280,000	$ 102,480.00
Sulfadoxine/Pyrimethamine 250mg/12.5mg + amodiaquine (75mg), Pack of 25 co-blisters	Senegal	12-Dec-2014	Malaria Pharmaceuticals	PO-PUP-2042	37,477	936,925	$ 342,914.55
Sulfadoxine/Pyrimethamine 500mg/25mg + amodiaquine (150mg), Pack of 25 co-blisters	Mali	20-Jul-2015	Malaria Pharmaceuticals	PO-PUP-2040	52,800	1,320,000	$ 464,640.00
Sulfadoxine/Pyrimethamine 500mg/25mg + amodiaquine (150mg), Pack of 25 co-blisters	Senegal	20-Jul-2015	Malaria Pharmaceuticals	PO-PUP-2041	67,458	1,686,450	$ 593,630.40
Sulfadoxine/Pyrimethamine 500mg/25mg, 50x3 tablets, 150 tablets	Benin	23-Jan-2015	Malaria Pharmaceuticals	PO-PUP-2102	12,136	1,820,400	$ 81,553.92
Sulfadoxine/Pyrimethamine 500mg/25mg, 50x3 tablets, 150 tablets	Benin	27-Jan-2015	Malaria Pharmaceuticals	PO-PUP-2104	8,856	1,328,400	$ 59,512.32
Sulfadoxine/Pyrimethamine 500mg/25mg, 50x3 tablets, 150 tablets	Madagascar	26-Jun-2014	Malaria Pharmaceuticals	PO-PUP-1750	3,000	450,000	$ 30,300.00
Sulfadoxine/Pyrimethamine 500mg/25mg, 50x3 tablets, 150 tablets	Madagascar	15-Sep-2014	Malaria Pharmaceuticals	PO-PUP-1809	12,000	1,800,000	$ 100,800.00
Sulfadoxine/Pyrimethamine 500mg/25mg, 50x3 tablets, 150 tablets	Nigeria	20-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1880	40,000	6,000,000	$ 294,400.00
Sulfadoxine/Pyrimethamine 500mg/25mg, 50x3 tablets, 150 tablets	Zimbabwe	05-Nov-2014	Malaria Pharmaceuticals	PO-PUP-1931	4,173	625,950	$ 45,819.54
Sulfadoxine/Pyrimethamine 500mg/25mg, 50x3 tablets, 150 tablets	Zimbabwe	01-Dec-2014	Malaria Pharmaceuticals	PO-PUP-1984	6,920	1,038,000	$ 51,484.80
Sulfadoxine/Pyrimethamine 500mg/25mg, 50x3 tablets, 150 tablets	Zimbabwe	01-Dec-2014	Malaria Pharmaceuticals	PO-PUP-1985	4,590	688,500	$ 34,149.60
Sulfadoxine/Pyrimethamine 500mg/25mg, pack of 150 tablets	Benin	29-Jan-2015	Malaria Pharmaceuticals	PO-PUP-2108	14,700	2,205,000	$ 72,177.00
Sulfadoxine/Pyrimethamine 500mg/25mg, pack of 150 tablets	Mozambique	17-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1872	27,330	4,099,500	$ 173,545.50
Sulfadoxine/Pyrimethamine 500mg/25mg, pack of 150 tablets	Mozambique	17-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1873	27,329	4,099,350	$ 173,539.15
Sulfadoxine/Pyrimethamine 500mg/25mg, Pill, Bottle, 100 tablets	Burundi	25-Nov-2014	Malaria Pharmaceuticals	PO-PUP-1962	11,860	1,186,000	$ 40,086.80
Sulfadoxine/Pyrimethamine 500mg/25mg, Pill, Bottle, 100 tablets	Mali	07-Apr-2015	Malaria Pharmaceuticals	PO-PUP-2177	10,000	1,000,000	$ 36,000.00
Sulfadoxine/Pyrimethamine 500mg/25mg, Pill, Bottle, 100 tablets	Senegal	12-Dec-2014	Malaria Pharmaceuticals	PO-PUP-2038	14,300	1,430,000	$ 51,480.00
Sulfadoxine/Pyrimethamine 500mg/25mg, Pill, Bottle, 100 tablets	Singapore	22-Sep-2014	Malaria Pharmaceuticals	PO-PUP-1819	10,320	1,032,000	$ 31,366.61
Sulfadoxine/Pyrimethamine 500mg/25mg, Pill, Bottle, 1000 tablets	Congo, Democratic Republic of	08-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1850	8,550	8,550,000	$ 256,500.00
Sulfadoxine/Pyrimethamine 500mg/25mg, Pill, Bottle, 1000 tablets	Congo, Democratic Republic of	16-Apr-2015	Malaria Pharmaceuticals	PO-PUP-2182	9,000	9,000,000	$ 294,210.00
Sulfadoxine/Pyrimethamine 500mg/25mg, Pill, Bottle, 1000 tablets	Liberia	04-May-2015	Malaria Pharmaceuticals	PO-PUP-2186	470	470,000	$ 13,136.50
Sulfadoxine/Pyrimethamine 500mg/25mg, Pill, Bottle, 1000 tablets	Mali	20-Oct-2014	Malaria Pharmaceuticals	PO-PUP-1874	4,400	4,400,000	$ 147,532.00
Sulfadoxine/Pyrimethamine 500mg/25mg, Pill, Bottle, 1000 tablets	Senegal	23-Mar-2015	Malaria Pharmaceuticals	PO-PUP-2170	1,000	1,000,000	$ 33,530.00

Sulfadoxine/Pyrimethamine 500mg/25mg, Pill, Bottle, 1000 tablets	Singapore	21-Apr-2015	Malaria Pharmaceuticals	PO-PUP-2183	1,863	1,863,000	$ 62,466.39

Appendix B. DFID-Funded Procurement, October 1, 2014–September 30, 2015

Zambia DFID Funded procurement October 2014 - September 2015

Item Description	Country	PO Date	Sub Category	PO#	Quantity (Pack)	Quantity (Tx)	Total Commodity Value	Procurement Status
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Zambia	13-Nov-2014	Rapid Diagnostic Test Kit	PO-PUC-1838	80000	2000000	$ 420,000.00	Delivered on February 2015
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Zambia	15-Jul-2014	Coartem	PO-PUP-1765	23340	700200	$ 658,188.00	Delivered on April 2015
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	Zambia	15-Jul-2014	Coartem	PO-PUP-1765	10000	300000	$ 408,000.00	Delivered on April 2015
Atropine Injection, 0.6 mg/1 ml ampoule, 10 ampoules per pack	Zambia	02-Dec-2013	Essential Medicines Malaria	PO-PUP-1560	7199	71990	$ 37,794.75	Delivered on April 2015
Erythromycin 125 mg/5 ml powder for suspension, 100 ml bottle	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1855	1200	300000	$ 399,036.00	Expected to be delivered in June 2015
Erythromycin 250mg, as Stearate	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1856	30000	30000000	$ 878,100.00	Delivered on June 2015
Doxycycline 100 mg (as hyclate), caps	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1857	3000	3000000	$ 45,870.00	Delivered on July 2015
Amoxicillin 125 mg/5 ml powder for suspension, 100 ml, each	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1858	410000	410000	$ 196,800.00	Delivered on May 2015
Ferrous Sulphate 50 mg, sugar-coated, 1000 tablets	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1859	3400	3400000	$ 6,120.00	Delivered on June 2015
Chlorphenamine Maleate 4mg, 1000 tablets	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1859	17000	17000000	$ 34,000.00	Delivered on June 2015
Ferrous Sulphate 200mg, sugar-coated, 1000 tablets	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1859	14000	14000000	$ 34,300.00	Delivered on June 2015
Cloxacillin 125 mg/5 ml powder for suspension, 100 ml, each	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1860	90000	90000	$ 64,287.00	Delivered on May 2015
Nalidixic Acid 300 mg/5 ml liquid for suspension, 100 ml, each	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1860	30000	30000	$ 52,200.00	Delivered on May 2015
Cloxacillin 500mg, powder for injection	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1860	3000	150000	$ 28,920.00	Delivered on May 2015
Benzylpenicillin 5mu/vial	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1861	4400	220000	$ 40,656.00	Delivered on May 2015
Phenoxymethylpenicillin 250mg tabs	Zambia	13-Oct-2014	Essential Medicines Malaria	PO-PUP-1861	20000	20000000	$ 309,400.00	Delivered on May 2015
Chloramphenicol 1g as Sodium Succinate, powder for injection	Zambia	14-Oct-2014	Essential Medicines Malaria	PO-PUP-1863	1700	17000	$ 39,083.00	Delivered on April 2015
Adrenaline Injection (Epinephrine), 1mg/1ml ampoule, 100 ampoules per pack	Zambia	14-Oct-2014	Essential Medicines Malaria	PO-PUP-1864	1400	140000	$ 17,920.00	Delivered on June 2015
Chloramphenicol 125 mg/5 ml liquid suspension, 100 ml	Zambia	14-Oct-2014	Essential Medicines Malaria	PO-PUP-1865	2500	25000	$ 17,525.00	Delivered on April 2015
Ciprofloxacin 250mg tabs	Zambia	15-Oct-2014	Essential Medicines Malaria	PO-PUP-1866	60000	6000000	$ 85,800.00	Delivered on May 2015
Amoxicillin 125 mg/5 ml powder for suspension, 100 ml, each	Zambia	03-Feb-2015	Essential Medicines Malaria	PO-PUP-2116	495000	495000	$ 237,600.00	Delivered on May 2015
Amoxicillin 125 mg/5 ml powder for suspension, 100 ml, each	Zambia	03-Feb-2015	Essential Medicines Malaria	PO-PUP-2118	495000	495000	$ 237,600.00	Delivered on June 2015
Ciprofloxacin 250mg tabs	Zambia	10-Feb-2015	Essential Medicines Malaria	PO-PUP-2131	70000	7000000	$ 99,400.00	Delivered on July 2015
Doxycycline 100 mg (as hyclate), caps	Zambia	10-Feb-2015	Essential Medicines Malaria	PO-PUP-2132	6000	6000000	$ 83,220.00	Expected to be delivered in September 2015
Chloramphenicol 1g as Sodium Succinate, powder for injection	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2157	1600	16000	$ 36,784.00	Delivered on August 2015
Erythromycin 125 mg/5 ml powder for suspension, 100 ml bottle, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2158	400000	100000000	$ 564,000.00	Pending Order Placement
Erythromycin 250mg, as Stearate	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2159	25000	25000000	$ 687,750.00	Delivered September 2015
Salbutamol Inhaler, 0.1mg/dose, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2160	60000	60000	$ 84,000.00	Expected to be delivered in September 2015
Acetylsalicylic Acid 300mg, 1000 tablets	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2161	13000	13000000	$ 39,780.00	Expected to be delivered in October 2015
Cephalexin 125 mg/5 ml powder for suspension, 100 ml bottle, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2162	250000	250000	$ 228,650.00	Expected to be delivered in January 2016
Cephalexin 250 mg, 10 x 10 blister capsules, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2162	120000	12000000	$ 415,608.00	Expected to be delivered in January 2016
Cloxacillin 250mg caps	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2162	30000	30000000	$ 628,941.00	Expected to be delivered in january 2016
Cloxacillin 125 mg/5 ml powder for suspension, 100 ml, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2163	100000	100000	$ 71,430.00	Expected to be delivered in October 2015
Nalidixic Acid 300 mg/5 ml liquid for suspension, 100 ml, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2163	25000	25000	$ 43,500.00	Expected to be delivered in October 2015
Cloxacillin 500mg, powder for injection	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2163	4000	200000	$ 38,560.00	Expected to be delivered in October 2015
Phenoxymethylpenicillin 250mg	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2164	20000	20000000	$ 309,400.00	Delivered on September 2015
Amoxicillin 125 mg/5 ml powder for suspension, 100 ml, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2165	495000	495000	$ 237,600.00	Expected to be delivered in November 2015
Amoxicillin 125 mg/5 ml powder for suspension, 100 ml, each	Zambia	06-Mar-2015	Essential Medicines Malaria	PO-PUP-2166	505000	505000	$ 242,400.00	Expected to be delivered in November 2015

Essential Medicines	3,813,399.00	$	6,574,034.75
RDTs	80,000	$	420,000.00
ACTs	1,000,200	$	1,066,188.00

Appendix C. Pre-Selected RDT Manufacturers

Manufacturer	Test Name	Target Antigen	Species	Comments
Access Bio	CareStart™ Malaria	pLDH	PAN	
	CareStart™ Malaria Single Kit	pLDH	PAN	
	CareStart™ Malaria 3 line	pLDH	Pf/PAN	
	CareStart™ Malaria 3 line Single Kit	pLDH	Pf/PAN	
	CareStart™ Malaria Combo	HRP2/pLDH	Pf/PAN	
	CareStart™ Malaria Combo Single Kit	HRP2/pLDH	Pf/PAN	
	CareStart™ Malaria	HRP2	Pf	
	CareStart™ Malaria Single Kit	HRP2	Pf	
	CareStart™ Malaria (Pf/Pv) Combo	HRP2/pLDH	Pf/Pv	
	CareStart™ Malaria Combo Single Kit	HRP2/pLDH	Pf/Pv	
	CareStart™ Malaria Combo	HRP2/pLDH	Pf/VOM	VOM = Vivax, Ovale, Malariae,
	CareStart™ Malaria Combo Single Kit	HRP2/pLDH	Pf/VOM	
	CareStart™ Malaria	HRP2/pLDH	Pf	
	CareStart™ Malaria Single Kit	HRP2/pLDH	Pf	
	CareStart™ Malaria SCREEN			
	CareStart™ Malaria SCREEN Single Kit			
ICT	Malaria Pf Casette	HRP2	Pf	
Orchid Biomedical	Paracheck Pf Device	HRP2	Pf	
Premier Medical	First Response Malaria Ag -Bulk	HRP2	Pf	
	First Response Malaria Ag – POCT	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	
	Bioline Malaria Ag Pf -individual	HRP2	Pf	
	Bioline Malaria Ag Pf/PAN-individual	HRP2/pLDH	Pf/PAN	
	Bioline Malaria Ag Pf/Pv - individual	HRP2/pLDH	Pf/Pv	
	Bioline Malaria Ag Pf-individual	HRP2/pLDH	Pf	

Appendix D. Pre-Selected LLIN 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
DuraNet ®	Bestnet A/S		√		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
Permanet®3.0	Vestergaard Frandsen	√	√		100 (roof) / 100 (sides - no border) / 75 (sides with 70cm lower border)	Deltamethrin	Interim
LifeNet®	Bayer			√	100	Deltamethrin	Interim

Appendix E. WHO Pre-Qualified ACT Manufacturers

Manufacturer	Product	Details
Novartis	Coartem® FDC	Artemether/Lumefantrine, 20mg/120mg, four dosage presentations
Sanofi Africasoins	Winthrop® FDC AS/AQ	Artesunate+Amodiaquine, four dosage presentations
IPCA Laboratories Ltd	Generic FDC AS/AQ	Artesunate+Amodiaquine, four dosage presentations
Ajanta Pharma Limited	Generic A/L	Artemether/Lumefantrine, 20mg/120mg, six dosage presentations
Strides Arcolab Limited	Generic A/L	Artemether/Lumefantrine, 20mg/120mg, four dosage presentations
Sigma-Tau	Eurartesim® - PQP+DHA	Piperaquine tetraphosphate + dihydroartemisinin 160/20 mg, 320/40 mg

Appendix F. 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	Quarter	% Stocked out of All ACTs	N	Comments
Ghana	Oct–Dec 2014	6.2%	48	
	Jan–Mar 2015	5.4%	37	
	Apr–Jun 2015	18.4%	38	Survey date: April 2015
	Jul-Sep 2015	10.8%	37	Survey date: July 2015
Malawi	Oct-Dec 2014	NA	NA	A report was produced in August, prior to the reporting period
	Jan–Mar 2015	2%	59	
	Apr–Jun 2015	13%	60	Survey date: May 2015
	Jul-Sep 2015	N/A	N/A	The next EUV is scheduled for October 2015.
Mozambique	Oct 2014–Mar 2015	3%	91	
	Jan–Mar 2015	N/A	N/A	
	Apr–Jun 2015	4%	102	Survey date: the April–June time period
	Jul–Sep 2015	N/A	N/A	The next EUV report will be available October 2015.
Nigeria	Oct–Dec 2014	0%	117	Nigeria conducts EUV on a semiannual basis
	Jan–Mar 2015	NA	NA	The project did not have responsibility to produce the EUV report during this quarter
	Apr–Jun 2015	N/A	N/A	The project did not have responsibility to produce the EUV report during this quarter.
	Jul–Sep 2015	0%	111	Survey date: July 2015
Tanzania	Oct–Dec 2013	NA	NA	The project did not have responsibility to produce the EUV report during this quarter
	Jan–Mar 2014	3%	200	
	Apr–Jun 2015	0%	216	Survey date: April 2015
	Jul–Sep 2015	4%	226	Survey date: July 2015
Zambia	Oct–Dec 2014	0%	40	
	Jan–Mar 2014	2%	42	
	Apr–Jun 2015	3%	32	Survey date: May 2015
	Jul–Sep 2015	5%	40	Survey date: August 2015.
Zimbabwe	Oct–Dec 2014	3%	37	
	Jan–Mar 2015	3%	37	
	Apr–Jun 2015	8%	39	Survey date: April 2015
	Jul–Sep 2015	0%	39	Survey date: July 2015

Note: "Stocked out of all ACTs" indicates an absence of all four A/L presentations: A/L 6x1, A/L 6x2, A/L 6x3, and A/L 6x4. Data for Ghana and Nigeria are an exception, as they reflect the absence of only WHO pre-qualified ACTs for all A/L 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 an LMIS and/or these countries did not implement the End-Use Verification activity: Burkina Faso, Burundi, Liberia, Madagascar, and Rwanda.

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 2014

Commodity	% Stocked Out	N	Countries Stocked Out
A/L 6x1	**0%**	**18**	
A/L 6x2	**5%**	**18**	**Kenya**
A/L 6x3	**16%**	**18**	**Benin, Ghana, Kenya**
A/L 6x4	**5%**	**18**	**Kenya**
FDC AS/AQ 25/67.5mg	**11%**	**9**	**Ghana**
FDC AS/AQ 50/135mg	**11%**	**9**	**Liberia**
FDC AS/AQ 100/270mg, 3 tabs	**12%**	**8**	**Ghana**
FDC AS/AQ 100/270mg, 6 tabs	**12%**	**8**	**Burundi**
SP	**0%**	**17**	
RDTs	**0%**	**23**	

January–March 2015

Commodity	% Stocked Out	N	Countries/States Stocked Out
A/L 6x1	**5%**	**19**	**Mali**
A/L 6x2	**0%**	**18**	
A/L 6x3	**5%**	**17**	**Malawi**
A/L 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	**0%**	**9**	
FDC AS/AQ 100/270mg, 6 tabs	**0%**	**8**	
SP	**0%**	**17**	

Commodity	% Stocked Out	N	Countries/States Stocked Out
RDTs	0%	25	

April–June 2015

Commodity	% Stocked Out	N	Countries/States Stocked Out
A/L 6x1	5%	17	Mali
A/L 6x2	0%	17	
A/L 6x3	6%	16	Mali
A/L 6x4	6%	16	Zambia
FDC AS/AQ 25/67.5mg	0%	10	
FDC AS/AQ 50/135mg	0%	10	
FDC AS/AQ 100/270mg, 3 tabs	0%	9	
FDC AS/AQ 100/270mg, 6 tabs	0%	9	
SP	11%	18	Ghana, Kenya
RDTs	4%	23	Ghana

July–September 2015

Commodity	% Stocked Out	N	Countries/States Stocked Out
A/L 6x1	0%	17	
A/L 6x2	0%	17	
A/L 6x3	0%	16	
A/L 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	0%	9	
FDC AS/AQ 100/270mg, 6 tabs	0%	9	
SP	12%	16	Kenya, South Sudan
RDTs	0%	23	

INDICATOR 3: Functioning LMIS: Percentage of countries where an LMIS is present that routinely collects and reports stock status data (i.e., stock on hand and consumption data) from all SDPs in the country

Country	Functioning LMIS	Note
Burkina Faso	Yes	There is a combined logistics and statistics data reporting system for malaria activities in Burkina. The stock on-hand and consumption data are reported on a monthly basis from the health facilities (HF) and the CCHWs. At the district level, the district data manager enters the HF monthly report data into a database designed for reporting malaria activities, and sends the quarterly report file to the central level through the region by internet. The development of the database was funded by the Global Fund and implemented in all districts since December 2010 with technical and financial support from the project. The database was upgraded with financial support from the project in 2012. The project provided technical and financial support to the NMCP for monitoring the use of the database in the field, and data analysis at the central level. The Health Statistics service is currently working to integrate into HMIS routine database (ENDOS) the malaria indicators collected through malaria database in order to use only one database in the system, starting from 2016. The Pharmacy Department with financial support from Expertise-France and technical support from the project is developing an integrated LMIS and its implementation will start in 2016 with the 18 districts covered by Esther-Gas project of Expertise-France.
DRC	No	The LMIS Roadmap tool was adopted during this year through coordination LMIS working group meetings by in country supply chain stakeholders. In April 2015, the USAID | DELIVER PROJECT organized a five-day consensus and harmonization workshop to agree on how to effectively implement the functioning of the integrated supply chain, with a focus on LMIS and resupply mechanisms One of the key results developed was a draft of the new and integrated SOP and job aids that provide critical guidance to Ministry of Health and partners to develop trainings session and conduct TOT to move forward with a functioning LMIS.
Ghana	No	Presently, data does not arrive at the central level through the defined channels for decision making. Through the Global fund sponsored Logistics Management Project, issues data from the 10 regional medical stores and central level are collated and shared with partners to update pipelines and inform decision making. On January 13, 2015 a catastrophic fire incident at the central medical stores (CMS) led to the loss of the warehouses, stocks and available records. Consequently, partners (Global Fund and USAID) are keeping central level stocks at a private sector warehouse whiles government is also keeping central level stocks at a temporary warehouse facility. Stock information from these three warehouses are thus collated on a monthly basis to represent central level stocks. It is expected the decision by Government to initiate implementation of the supply chain master plan by September 2015, will help improve the functionality of the LMIS.

Country	Functioning LMIS	Note
Guinea	No	Health facilities provide monthly reports to the National Malaria Control Program (NMCP) on consumption data
Liberia	Yes	The reporting rate for the LMIS is low and there is an exercise underway to re-design the LMIS to reduce the reporting burden and increase reporting rates. The new LMIS is expected to be rolled out in the first quarter of 2015.
Madagascar	Yes	Revised LMIS tools have been designed and being used in pilot sites. The intent is to use the tools at all health centers, district hospitals and NGOs health facilities. Same for the new version of CHANNEL which will be deployed at district, reference and specialized hospitals.
Malawi	Yes	100 % of health facilities in Malawi are integrated into LMIS. Reporting rate for SDPs has been maintained at an average of 92% from September 2014 to February, 2015, reaching a maximum of 95% for September, October and November, 2014. This remains significant improvement from 54% as of March, 2013.
Mozambique	No	Mozambique has an LMIS, but it does not provide data from all SDPs in the country. There is a paper-based LMIS that includes standard data points such as stock on hand, quantity distributed, quantity requested, etc., and is used by facilities to reorder from the districts monthly. The districts aggregate these orders and order monthly from the provinces. District reporting rates are above 90%. Individual SDP data remains at the district level. Provinces order quarterly from the central level. The percentage of facilities not included in the district aggregations is unknown. An automated system (SIMAM) has been implemented at the central and provincial levels and is now also functional in 147 districts. The system allows for provinces to enter district data (SOH, quantity requisitioned, quantity received) as well as the same data from the provincial level. These data are posted to Drop Boxes visible at the central level. All provinces now use SIMAM when making their quarterly requisitions; however, all districts do not yet post complete data from the SDPs. But the numbers are increasing and becoming more robust.
Nigeria	Yes	The country has a functioning LMIS with health facility reporting rate at 94.7%.
RDMA		Cambodia: Yes. Disaggregated facility data is not available/used at the central level. The integrated eLMIS collects data from the health facility and Village Malaria Worker (VMW) levels. However, this data is aggregated at the district level. Therefore, individual SDP consumption and stock on hand data is not available nor accessible to the NMCP at the central level and it is not possible to know the stock status of malaria commodities in the country. Donor support for the existing, integrated LMIS has been discontinued, and the LMIS is becoming less reliable. Laos: Yes. With technical assistance from the project, the CMPE has standardized the malaria commodity LMIS data collection and reporting forms and procedures which have been documented in an LMIS SOP manual and training curriculum that will be translated into Lao and distributed to facilities throughout the malaria commodities logistics system. Stock data is reported bi-weekly via a web-based ODK platform. District and Provincial Anti-malaria Stations report facility level and aggregated data to CMPE.

Country	Functioning LMIS	Note
		Burma: Yes. Burma has an LMIS for malaria that is supported by PR-UNOPS. However, this system is only implemented down to the township level. Although data recording is completed at SDP level, the interaction of this level of data with the LMIS is ad hoc rather than systematic. With the establishment of an integrated LMIS being supported by donors and the MOH, a true LMIS for malaria may begin to be active in 2016.
Rwanda	Yes	The country has been using harmonized LMIS since 2011. The country has also implemented an eLMIS that is currently functioning. The LMIS paper-based system is being transitioned to the eLMIS system. This transition was completed September 30, 2015.
South Sudan	No	Currently, the MOH is implementing a supply driven push system throughout the country. Essential medicines and medical supplies are distributed in a kit system where no stock status data is collected from the SDPs.
Tanzania	Yes	In this fiscal year, Tanzania began the implementation of the eLMIS at the district level. To date, 100% of the districts have been trained and they report and request commodities for health facilities on routine basis through the eLMIS. The reporting rate as at September 30th, 2015 for ACTs, artesunate injection, SP, and mRDTs is 83%. The ILSGateway rollout training has been completed across the country. This is a complementary SMS based data collection tool developed under the USAID | DELIVER PROJECT that has been implemented in 4,603 health facilities and is collecting monthly information on stock on hand data, status of R&R submission and status of deliveries receipt.
Zambia	Yes	With Support from USAID | DELIVER PROJECT, the Ministry of Health (MOH) has continued implementing EMLIP, an intervention to address medicine availability and distribution at health service delivery point. From Inception to-date (September 2015), a total of 75 districts have been trained across the country out of 103 districts. This represents 73% national coverage with at least a district representation from all the 10 provinces. During the period under review, 1,554 staff at SDP were trained bringing the total to 3,966 staffs trained nationally.
Zimbabwe	Yes	Automated (AutoDRV/AutoOrder) system exists for routine collection of LMIS data from SDPs. Central LMIS (TOP UP) exists for routine analysis and reporting stock status data.

INDICATOR 6: Percentage of countries receiving field support TA funds reporting on supply chain performance via the End-Use Verification activity

Country	End-Use Carried Out by the Project	Note
Burkina Faso	Yes	The project conducted three rounds of EUV activity during this fiscal year (November/December 2014; February/March 2015; June/July) 2015.
DRC	No	This activity is carried out by SIAPS. The last one occurred in June 2015.
Ghana	Yes	Ghana has implemented End-Use Verification on quarterly basis since July 2009. The EUV covers the entire country and the reports produced have informed decisions regarding commodity procurement, distribution and redistribution, supportive supervision and training.
Guinea	No	Guinea is not currently receiving field support TA funds to conduct an EUV activity at this time.
Liberia	Yes	Implemented in only five counties (Nimba, Lofa, Bong, Margibi, & Montserrado).
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 FY2011, and has carried out quarterly data collection since that time. One EUV exercise was conducted during the semi-annual period of October 2014 to March, 2015.
Mozambique	Yes	Project staff conducted End Use Verification data collection visits in Niassa, Maputo Province, Maputo City, Gaza, Nampula, Cabo Delgado, Sofala, Zambezia, Inhambane, and Manica in FY 2015. The number of EUV activities at each level is as follows: four visits to provincial medical stores, 24 to district medical stores, and 92 to SDPs.
Nigeria	Yes	6 cycles of EUV have been carried out in Nigeria so far, with the first survey conducted in November–December of 2012.
RDMA	N/A	No countries in RDMA have been selected to execute EUV surveys by PMI Malaria Operational Plans.
Rwanda	N/A	EUVs have not been carried out in Rwanda as the NMCP has not been willing to provide access to the data. PMI is fully aware of the situation.
South Sudan	N/A	South Sudan has not been selected to execute EUV surveys by PMI Malaria Operational Plans.
Tanzania	Yes	Tanzania initiated the implementation of the End Use Verification surveys in 2009. During the period under review a total of three EUV surveys were undertaken for Tanzania Mainland (660 health facilities visited) and Zanzibar 330 health facilities visited). These were conducted in January, April and July for periods dating October – December 2014, January – March, 2015 and April – June, 2015. From these surveys, stock status of antimalarial, storage condition and case management practice was determined. Additionally, PMP indicators for Zanzibar were developed in collaboration with the Ministry of Health. The indicators were developed to align with the developed annual supply chain work plan for July 2015 to June 2016.

Country	End-Use Carried Out by the Project	Note
Zambia	Yes	The project supported MOH/NMCC in conducting joint monitoring and supportive supervisory visits to health facilities specifically assessing malaria case management and commodity availability at SDPs. In the period under review, 5 EVUs activities were conducted. These were conducted quarterly in at least 4 to 6 randomly selected facilities in each of the 10 provinces.
Zimbabwe	Yes	Zimbabwe has been carrying out end-use activity quarterly since January 2012.

INDICATOR 9: 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)

Country	Coordination Committee	Note
Burundi	Yes	There is a Technical Working group that tracks Medication and LLINs are now included in this meeting. Quarterly.
Burkina Faso	Yes	In Burkina, there is a malaria commodities coordination body (ACT Committee) led by the Director General of the Pharmacy Department. During this fiscal year, the ACT Committee met in March 2015. From June 2015, the arthemeter-lumefantrine has replaced the artesunate/amodiaquine for the management of malaria cases among the children under five years due to the extension of the SMC strategy in the country. The USAID | DELIVER PROJECT provides technical and financial support to the ACT Committee to ensure donor and government coordination around malaria commodity supply. CAMEG (Central Medical Stores), NMCP, Pharmacy Department, Financial Department of the MOH, UNICEF, USAID, WHO, USAID | DELIVER PROJECT and other partners involved in malaria activities are committee members.
DRC	Yes	This committee meets quarterly. The last meeting occurred in August 2015. One of major accomplishments was the report, analysis and integration of data from health zones supported by Global fund and DFID in April to June PPMRm.
Ghana	Yes	There is a central level integrated procurement and supply chain management (PSM) coordination meeting for all the programs including Malaria. Meetings are held regularly on a quarterly basis.
Guinea	Yes	The Coordination Committee has an important role among partners: The committee coordinates all activities related to the procurement, distribution and use of products
Liberia	Yes	There is a National Supply Chain Technical Working Group and in the USAID supported county there is a functional County Health Team Supply Chain Technical Working Group.
Madagascar	Yes	Three coordination committees are currently in place and functioning. They are: 1) Logistics Management Committee (LMC) which makes strategic decision for health commodity management; 2) Roll Back Malaria / Malaria Acquisition, Supply & Stock management committee (PSM/RBM) which proceeds with quarterly review of malaria procurement plans and addresses all logistics challenges surrounding the management of malaria commodities. 3) Logistics

Country	Functioning Coordination Committee	Note
		Subcommittee / LLIN National Coordination Committee (CNC)
Malawi	Yes	The meeting did not take place in the period under review because NMCP was very busy during the period and could not convene a meeting (GFATM Concept note production and other obligations). However one was scheduled for April, 2015
Mozambique	Yes	The Malaria Commodities Working Group continues to meet regularly (at least quarterly, but sometimes more frequently) and reports quarterly on pipeline status and potential stock status issues. The Working Group includes representatives from NMCP, CMS, WHO, UNICEF, PMI, USAID | DELIVER PROJECT and other related organizations.
Nigeria	Yes	PSM coordination group meeting functions monthly at the 11PMI focus states, quarterly at the regional and national levels.
RDMA		Cambodia: No. At this time there is no formal logistics coordination mechanism in place. Laos: No. Burma: There is a Supply Chain National Task Force. The NTF constitutes an integral part of the Medical Care Directorate of the Ministry of Health and is tasked with advising country stakeholders on national supply chain issues including, but not limited to, product selection, quantification, procurement, warehousing, distribution, inventory control, logistics management information systems, and quality assurance. The purpose of the Supply Chain National Task Force (NTF) is to advise the Ministry of Health on national supply chain strategy and to coordinate the provision of supply chain technical assistance across different programs and from different development partners. The establishment of this NTF is part of a series of measures to establish one national integrated public health supply chain and ensure the availability of health commodities The Central Medical Stores (CMS) is a regular contributor. The NMCP is represented on the NTF through the presence of the Director of Disease Control. Yes. The USAID | DELIVER PROJECT is a member of the NTF and has advocated, on behalf of the NMCP, for the establishment of standardized tools and approaches to be used for quantification and the establishment of coordinated procurement planning among stakeholders.
Rwanda	Yes	The Rwanda program has a Malaria Quantification Committee including the NMCP, Central Medical Store and the project. This committee conducts the annual quantification and meets on a quarterly basis to review the consumption, stock status, and ongoing shipments and to update the supply plan accordingly.
South Sudan	Yes	The Emergency Medicines Fund Technical Working Group (EMFTWG) is a forum to share information with the CMS, MOH, USAID, and implementing partners on the status of incoming shipments, distribution to the county health departments (CHDs, and availability of storage space at the CHDs. The NMCP is member of the TWG.

Country	Functioning Coordination Committee	Note
Tanzania	Yes	In Mainland, the NMCP's ACT working group meets on a quarterly basis to discuss all areas around malaria programming, procurements, interventions. This meeting includes MSD. Also a managerial MOHSW and SC stakeholders group known as. Pharmaceutical Infrastructure Food Safety Working Group (PIFWG) which meets on a monthly basis to discuss all the supply chain challenges and strategies to improve overall commodity availability at all the levels. In Zanzibar, the TWG meets on a quarterly basis and includes participation of the development partners (WHO, UNICEF, UNFPA, DANIDA, Global Fund and USAID), Ministry of Health (Minster of Health, Permanent Secretary and Chief Pharmacist), Ministry of Finance, Zanzibar Food and Drug Board (ZFDB), CMS Zanzibar and the Zanzibar Malaria Elimination Program (ZAMEP).
Zambia	Yes	The project is a member of the Supply Chain Coordinating committee established by MOH. The committee meets on a monthly basis and is co-chaired by MOH and Medical Stores Limited. The objectives of the committee are to provide a framework for highlighting and resolving issues related to communication, coordination and information sharing in the supply chain system for essential medicines and medical supplies; to Increase transparency for all procurement planning and fulfillment; to make available technical recommendations to MOH Senior Management for strengthening the supply system for Essential Medicines and Medical Supplies. The project is also a member of the Malaria technical working group that meets on a quarterly basis.
Zimbabwe	Yes	In an attempt to streamline coordination mechanisms at a technical level, MMSCT technical committee has been harmonized with the Procurement and Logistics Subcommittee to form the Procurement and Supply Management (PSM) Committee, with meetings held bi-monthly to discuss procurement and logistics issues for medicines and medical supplies across all program areas

INDICATOR 10: Available supply plans: Percentage of countries that have developed supply plans for PMI funded commodities

Country	Available Supply Plans	Note
Burundi	Yes	Quarterly supply plans based on requests from Health Districts and AMC rates
Burkina Faso	Yes	There is a quantification team for malaria commodities. The quantification exercise is completed every year with a development of a coordinated supply plan integrating all the partners involved in malaria commodities funding/procurement such as USAID/PMI, UNICEF, principal tecipients of Global Funds, and CAMEG. A yearly supply plan is developed for each malaria commodity. The 2015 supply plan has been reviewed in January and March 2015. The last updated supply plan was conducted in July 2015 and the 2016 supply plan has been reviewed.
DRC	No	During this year, the MOH produced the national supply plan. Even though there is no formalized supply plan for PMI-funded commodities, USAID | DELIVER PROJECT suggested a supply calendar after the April 2015 quantification. Currently the project is setting up the pipelines for PMI-supported health zone supply planning.
Ghana	Yes	National quantifications are conducted annually with biannual reviews to generate forecasts and supply plans for malaria commodities. Subsequently, the malaria commodity pipelines are reviewed regularly to ensure shipments delivered according to plan.
Guinea	Yes	The supply plans for PMI funded commodities were under SIAPS mandate, not the project.
Liberia	Yes	Supply Plan available. Developed with full involvement by NMCP and SCMU.
Madagascar	Yes	An annual forecast and quarterly reviews aim at regularly updating malaria commodity supply plans. The December and March reviews led to two PMI emergency orders to respond to the ACTs stockouts.
Malawi	Yes	A supply plan was developed following the annual quantification exercise, which took place in March 2015. The supply plan took into account donor commitment to supply the country with quantified commodities.
Mozambique	Yes	In May 2012, a comprehensive project-organized exercise involving MOH, CMAM, NMCP, PMI, WHO and other partners, quantified antimalarials and RDT needs for the period of 2012 to 2016, and the corresponding supply plan was developed. Since then, the quantification and supply plan have been adjusted regularly as additional consumption and shipping information becomes available – most recently in June 2015. The quantification and supply plan now cover through the end of CY2017.
Nigeria	Yes	Supply plan for malaria commodities are available in the country updated bimonthly and when commodities are ordered and received.
RDMA	Cambodia: No Laos: Yes Burma: No	Cambodia: No. Procurements have been completed for PSI and for CAP-Malaria and are in process for the CNM. Each of these procurements have been one-offs in support of ongoing activities to cover specific gaps. As such they have been incorporated into existing program plans but not national level supply plans.

Country	Available Supply Plans	Note
		Laos: PMI funded procurements for Laos have also been one-off in response to commodity needs identified by the project international and local consultants. No formal supply plans exist for coordinating PMI and GF funded malaria procurements. Burma: No. Though procurements for the NMCP, PSI, and CAP Malaria have either been completed or are in progress, these are basically one-off procurements to support ongoing activities of PMI-supported service delivery projects or LLINs campaigns. As such these procurements are not currently included in a national comprehensive supply plan for which PMI funded commodities are planned to fill gaps.
Rwanda	Yes	The Malaria Quantification Committee conducts the annual quantification and meets on a quarterly basis to review the consumption, stock status, and ongoing shipments, and to update the supply plan accordingly.
South Sudan	No	
Tanzania	Yes	Tanzania has a national malaria supply plan. The supply plan for mainland was updated in May, 2015 following the quantification review. The PPMRm is updated regularly, product and funding are tracked and gaps are identified.
Zambia	Yes	The project supported MOH in conducting the annual malaria commodity forecasting and quantification held on 11th to 14th August 2015. During the meeting, a national supply plan for 2016 was developed and shared with stakeholders supporting MOH with the procurement of malaria commodities. The supply plan was for ACTs, RDTs, artesunate injection, SP, quinine injection and tablets using PMI, DFID, GF, and MOH funds.
Zimbabwe	Yes	Updated national forecasts and supply plans that inform all MOHCC and partner (including PMI & GFATM) supported procurements are available through 2017.

INDICATOR 11: Number of technical reports or tools developed to support malaria supply chain performance

Country	Number of Technical Tools	Note
Burundi	2	-Harmonized Distribution Strategy protocol that outlines how the strategy works, roles and responsibilities of each Target beneficiaries of LLIN distribution
Burkina Faso	4	EUV reports Evaluation of the use of mobile technology with CommCare application at the Community Health Workers level in Kaya District: Final report, June 2015
DRC	21	Supportive supervision reports; PPMRm, adopted LMIS roadmap, SCM training report, identification form for health zone personnel in charge of product reception, memorandum of understanding for coordination and collaboration on health product supply chain activities among USG partners in DRC, needs assessment check list for new PMI supported health zones
Ghana	3	Quarterly EUV and supportive supervision reports National Quantification Guidelines for Health Commodities (including malaria) National malaria quantification reports
Guinea	0	
Liberia	2	Development of a monthly project report for malaria activities Developed a routine distribution plan for LLINS specifically designated for distribution through all health facilities providing antenatal care (ANC/ID) and/or institutional (vs. at home) delivery (ID) services in each of Liberia's 15 counties
Madagascar	2	USAID | DELIVER PROJECT in collaboration with the MOH / DPLMT and the potential logistics management unit members developed one SOP and one supportive supervision guide to support the management of malaria commodities.
Malawi	4	ACT Assessment Report Data Quality Assessment Report Trend Analysis on Reporting rates for A/L vs stockout rates. DQA Report
Mozambique	3	Annual Report (*Relatorio Anual*), quarterly EUV reports, and a register for managing bednets
Nigeria	4	Malaria Commodities distribution plan template LLINs re-conciliation tool Malaria Commodities Inventory Control System (MCICS)
RDMA	7	-Excel spreadsheets developed to document the forecasting methodology and assumptions agreed on during the national malaria quantification workshop to estimate malaria commodity needs and costs for 2016 and 2017. -PipeLine database created for malaria commodities to reflect the forecast quantities, assess the months of stock (MOS) of each product, and develop the supply plan for procurement and delivery of malaria commodities for 2016 and 2017.

Country	Number of Technical Tools	Note
		-Malaria Commodities LMIS SOP Manual and training curriculum for LMIS data collection and reporting from operational levels -LMIS web-based ODK platform for central level data management and analysis -CMPE Web LMIS Manual -Min/Max "buffer stock" calculation template for use during national rollout training -MS Excel community level database template for collecting list of health facilities nationwide for distribution of LLINs
Rwanda	5	Quantification report SOPs fo quantification Costing tool at DPs Monitoring tool at DPs Supervision tool at DPs
South Sudan	3	EMF supportive supervision checklist, Warehousing and Distribution SOPs
Tanzania	11	Performance Management Plans, Quantification review for Tanzania Mainland, Quantification for Zanzibar, End Use Verification Reports Tanzania Mainland and Zanzibar
Zambia	8	Tools: SCMgr, Pipeline, eLMIS and Magpi. Reports: PPMRm, National gap analysis, End Use verification report and forecasting and quantification reports.
Zimbabwe	4	Three malaria end-use verification reports were compiled and disseminated to malaria stakeholders including MOHCC NMCP and PMI. The next EUV is scheduled for 26 – 30 October 2015. The projected also supported MOHCC DPS develop facilitator guides for conducting ZIP data quality workshops

Appendix G. 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).	**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:** 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.	1. Number of instances when DELIVER TO7 has been requested to provide guidelines or training.	1. 0. No requests have been made for training	N/A	Annually reporting
Procurement, storage, management and disposal of public health commodities, including pharmaceutical drugs, LLINs and laboratory supplies and reagents.	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	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	1. Complete, and local USAID Mission IEE on file 2. 100%	N/A	Annually reporting

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
	environmental determinations and recommendations of the PIEE 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 *Guidelines for Safe Disposal of Unwanted Pharmaceuticals During and After Emergencies*				
Use, procurement, or storage of pesticides or pesticide containing material.	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. 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. 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. 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. 5. The project will adhere to the	1. Percentage of LLIN shipments with pre-shipment test reports available 2. Percentage of LLINS procured that are registered in accordance with country policies (if required by the country) 3. Recorded instances of assistance provided for development/distribution of BCC materials	1. 100% 2. 100% 3. 2	N/A	3. Burkina Faso, Angola

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
	recommendations identified in the Programmatic Environmental Assessment for Malaria Vector control, dated January 2007, for: o Procurement o Storage o Inventory Control o Use o Waste Disposal 6. Project has funded recycling efforts.				
Small-scale rehabilitation of health or laboratory facilities	**We do not anticipate that we will be undertaking any large scale construction. For small scale construction:** 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	1. Documented verification of Mission IEE on file 2. Recorded instances of small scale construction that follows USAID Environmental Guidelines for Small-Scale Activities in Africa	1. IEE on file 2. 0. There have been no recorded instances of small-scale rehabilitation of health or laboratory facilities		
Other activities that are not covered by the above categories: Describe	NA	NA			NA

Appendix H. 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)							
Direct procurement services							
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 signifiies initiation of the request	X	
Management information system							
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	
Quality assurance and quality control							
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 I. TO7-Funded Short-Term Technical Assistance October 1, 2014–September 30, 2015

Task Order 7 Short Term Technical Assistance (STTA) October 1, 2014-September 30, 2015

Name	Destination	Travel Dates	
Broekhuysen, Erin	Zambia	10/6/2014	10/17/2014
Celhay, Olivier	Thailand	10/10/2014	10/15/2014
Kelly, Elizabeth	Nigeria	10/11/2014	11/7/2014
Moise, Imelda	Nigeria	10/11/2014	11/7/2014
Strader, Alexis	Nigeria	10/12/2014	10/24/2014
Chimombre, Tadious	South Africa	10/14/2014	11/1/2014
Bausell, Loren	Malawi	10/25/2014	11/8/2014
Alexanderson, Lauren	Tanzania	10/25/2014	11/15/2014
Roche, Greg	Zimbabwe	10/25/2014	11/22/2014
Majoro, Juvenal	Washington, D.C.	10/26/2014	10/28/2014
Purcell, Ryan	Washington, D.C.	10/27/2014	11/7/2014
Levenger, Melissa	Nigeria	11/1/2014	11/28/2014
Hood, Kinsy	Burma	11/3/2014	11/6/2014
Hatch, Ben	Madagascar	11/3/2014	11/14/2014
Bock, Ariella	Madagascar	11/4/2014	11/21/2014
Printz, Naomi	Tanzania	11/7/2014	11/22/2014
Duncan, Bob	Rwanda	11/8/2014	11/26/2014
Moyo, Pardon	Rwanda	11/10/2014	12/2/2014
Amenyah, Johnnie	Indonesia	11/11/2014	11/21/2014
Baddoo, Reginald Laud	Denmark	11/15/2014	11/20/2014
Mwencha, Marasi	Denmark	11/16/2014	11/21/2014
Kisoka, Noela	Denmark	11/16/2014	11/21/2014
Mapunjo, Siana Gideon	Denmark	11/16/2014	11/21/2014
Eomba, Motomoke	DR congo	11/17/2014	12/12/2014
Muyingo, Therese	DR congo	11/17/2014	12/11/2014
Rabelahasa, Eleonore	Zambia	11/17/2014	12/4/2015
Rabelahasa, Eleonore	Zambia	11/22/2014	12/5/2014
Shifa, Abdurhaman	South Sudan,	11/27/2014	12/12/2014
Ouedraogo, Youssouf	Madagascar	11/30/2014	12/12/2014
Knittel, Barbara	Washington, D.C.	12/1/2014	2/10/2015
Mchau, Alfred	Washington, D.C.	12/5/2014	12/12/2014
Rabelahasa, Eleonore	Guinea	12/6/2014	12/20/2014
Roche, Greg	Zimbabwe	12/6/2014	1/11/2015
Dubin, Scott	Angola	12/8/2014	12/21/2014
Hood, Kinsy	Laos	12/15/2014	12/20/2014
Dubin, Scott	Angola	1/7/2015	1/16/2015
Peacock, Kim	Ghana	1/7/2015	1/19/2015
Hare, Lisa	Nigeria	1/7/2015	1/17/2015
Eomba, Motomoke	Ghana	1/12/2015	2/7/2015
Mahadevan, Vidya	Washington, D.C.	1/12/2015	2/9/2015
Bausell, Loren	Malawi	1/13/2015	1/27/2015
Diallo, Abdourahmane	Madagascar	1/17/2015	2/6/2015
Pehe, Norbert	Madagascar	1/17/2015	2/6/2015
Amenyah, Johnnie	Ghana	1/18/2015	1/30/2015
Allers, Claudia	Asia	1/23/2015	2/12/2015
Hassan, Hamisu	Switzerland	1/24/2015	1/30/2015
Hood, Kinsy	Asia	1/25/2015	2/13/2015
Roche, Greg	Zimbabwe	1/31/2015	3/1/2015
Moyo, Pardon	Rwanda	2/1/2015	2/28/2015

Printz, Naomi	Rwanda	2/4/2015	2/17/2015
Hood, Kinsy	Laos	2/15/2015	2/20/2015
Hood, Kinsy	Burma	2/24/2015	2/28/2015
Peltier, Rudolph	Switzerland	2/24/2015	3/1/2015
Clancy, Ellen	Mozambique	2/25/2015	5/11/2015
Peck, Roger	Switzerland	2/25/2015	3/1/2015
Warren, Chris	Ghana	2/27/2015	3/20/2015
Rabelahasa, Eleonore	Malawi	2/28/2015	3/21/2015
Egharevba, Michael	Malawi	2/28/2015	3/21/2015
Msipa, Patrick	Malawi	2/28/2015	3/21/2015
Vanden Bossche, Mickey	Nigeria	3/1/2015	3/13/2015
Ahsan, Safia	Malawi	3/6/2015	3/20/2015
Sanderson, Jeff	Ghana	3/7/2015	3/13/2015
Amenyah, Johnnie	Ghana	3/8/2015	3/21/2015
Vanden Bossche, Mickey	Ghana	3/13/2015	3/21/2015
Harris, John	South Africa	3/13/2015	3/25/2015
Hood, Kinsy	Burma	3/18/2015	3/25/2015
Tammariello, Alexandra	India	3/19/2015	4/6/2015
Peltier, Rudolph	India	3/19/2015	4/6/2015
Jenkins, David	India	3/20/2015	4/4/2015
Ebrahimi-Gold, Allison	Washington, D.C.	3/23/2015	5/1/2015
Efem, Iyeme	Washington, D.C.	3/23/2015	4/11/2015
Kromah, Kpakama	South Africa	3/24/2015	4/3/2015
Sullivan, Audrey	Liberia	3/30/2015	4/15/2015
Wolf, Katherine	DR congo	4/4/2015	4/17/2015
Eomba, Motomoke	DR congo	4/4/2015	5/3/2015
Muyingo, Therese	DR congo	4/4/2015	5/3/2015
Mukwashi, Tapiwa	Liberia	4/4/2015	10/1/2015
Snow, Tenly	Liberia	4/5/2015	4/19/2015
Roche, Greg	Zimbabwe	4/6/2015	5/1/2015
Waweru, Jayne	Rwanda	4/8/2015	4/30/2015
Sanderson, Jeff	Liberia	4/9/2015	4/29/2015
Hare, Lisa	Liberia	4/9/2015	4/29/2015
Frankel, Nina	Rwanda	4/9/2015	4/25/2015
Warren, Chris	Ghana	4/10/2015	5/2/2015
Knowles, Ellen	Ghana	4/10/2015	5/3/2015
Waweru, Jayne	Rwanda	4/12/2015	5/2/2015
Hood, Kinsy	Burma	4/20/2015	4/24/2015
Perry, Steven	Liberia	4/20/2015	5/2/2015
Hood, Kinsy	Thailand	4/29/2015	4/30/2015
Pehe, Norbert	DR congo	5/1/2015	5/10/2015
Abdurhaman, Shifa	DR congo	5/1/2015	5/10/2015
Amenyah, Johnnie	Nigeria	5/3/2015	5/17/2015
Takang, Eric	Ghana	5/9/2015	5/24/2015
Eberle, Jim	Ghana	5/9/2015	5/24/2015
Celhay, Olivier	Laos	5/10/2015	5/15/2015
Kamunyori, Joy	Ghana	5/16/2015	5/30/2015
Moyo, Pardon	Rwanda	5/18/2015	6/19/2015
Warren, Chris	Nigeria	5/29/2015	6/14/2015
Chimnani, Jaya	Tanzania	5/29/2015	6/15/2015
Schmader, Sam	Tanzania	5/29/2015	6/15/2015
Roche, Greg	Zimbabwe	6/1/2015	6/26/2015
Ayale, Wondwossen	Italy	6/2/2015	6/5/2015

Snow, Tenly	Benin	6/5/2015	6/27/2015
Bock, Ariella	Liberia	6/9/2015	6/26/2015
Tien, Marie	Liberia	6/9/2015	6/26/2015
Perry, Steven	Liberia	6/9/2015	6/26/2015
O'Brien, David	Ghana	6/12/2015	6/12/2016
Warren, Chris	Nigeria	6/15/2015	6/26/2015
Warren, Chris	Burma	6/18/2015	12/24/2015
Hood, Kinsy	Burma	6/21/2015	6/27/2015
Harris, John	South Africa	6/21/2015	7/3/2015
Mudenda, Mutinta	South Africa	6/21/2015	7/10/2015
Gopal, Asmal	South Africa	6/22/2015	7/1/2015
Macamo, Natercia	South Africa	6/22/2015	7/1/2015
Kromah, Kpakama	South Africa	6/30/2015	7/11/2015
Frankel, Nina	Laos	7/1/2015	7/19/2015
Wolf, Katherine	Switzerland	7/6/2015	7/11/2015
Clancy, Ellen	Mozambique	7/7/2015	9/30/2015
Dubin, Scott	Angola	7/8/2015	7/31/2015
Jankowski, Karlan	Tanzania	7/10/2015	8/1/2015
Gurure, Jonathan	Rwanda	7/19/2015	8/30/2015
Roche, Greg	Zimbabwe	8/1/2015	8/30/2015
Printz, Naomi	Liberia	8/24/2015	8/28/2015
Akhlaghi, Laila	Cambodia	8/30/2015	9/14/2015
Egharevba, Michael	Cambodia	8/30/2015	9/14/2015
Thi, Aung	Cambodia	9/4/2015	9/12/2015
Nyein Maung, Chan	Cambodia	9/4/2015	9/12/2015
Bausell, Loren	Cambodia	9/5/2015	9/11/2015
O'Brien, David	Ghana	9/5/2015	12/8/2015
Segatore, Eduardo	Niger	9/14/2015	9/24/2015
Amenyah, Johnnie	Nigeria	9/22/2015	10/2/2015
Diallo, Abdourahmane	Madagascar	9/25/2015	10/15/2015
Sullivan, Audrey	Liberia	10/5/2015	10/16/2015
Coleman, Kate	Netherlands and Singapore	10/10/2015	10/18/2015
Dubin, Scott	Netherlands and Singapore	10/10/2015	10/18/2015
da Silva, Mariana	Rwanda	10/10/2015	10/17/2015
Advisor, Logistics	Malawi	10/15/2015	11/16/2015
Eomba, Motomoke	Madagascar	10/16/2015	11/7/2015
Pehe, Norbert	Madagascar	10/17/2015	11/16/2015
Advisor, Logistics	Liberia	10/19/2015	11/30/2015
Amenyah, Johnnie	Malawi	10/19/2015	11/20/2015
Advisor, Logistics	Malawi	10/19/2015	11/20/2015
Printz, Naomi	Liberia	10/26/2015	11/6/2015
Serumaga, Brian	Tanzania	11/2/2015	11/20/2015
Paprocki, David	Tanzania	11/2/2015	11/20/2015
Roche, Greg	Zimbabwe	11/9/2015	6/10/2016

Appendix J. EUV Summary Table

	BURKINA FASO	GHANA	LIBERIA	MALAWI	MOZAMBIQUE	NIGERIA	TANZANIA	ZAMBIA	ZIMBABWE
Date of Last Implementation	June 2015	July 2015	September 2015	May 2015	June 2015	July 2015	July 2015	August 2015	July 2015
Number of Surveys Completed	5	22	2010: 2 under DELIVER 2011 - late 2013: 5 (SIAPS) March 2014 - present: 5 (DELIVER)	19 (17 DELIVER, 2 SPS)	9	6	25	18	13
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 MoHSW facility list); 430 facilities in the five PMI-supported counties. **In Montserrado County and large 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 regions/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 Montserrado 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/APE. For SCM supervision the HU are chosen with the provincial Medico Chefe 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 facilliites) 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 methodolgy 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 districts from each province, 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 Methodolgy	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, althoug 13 provincial warehoses, 27 district warehouses and 44 SDPs were visited trough 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 GHS 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 FMOH/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 MOHSW, 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 follows up on issues (based on results or items noted for follow-up) with both the project and related MOH programs, especially the NMCP and SCMU.	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 HU, District, Province and central level; provide support in supervision report for the provinces and central level; participate in supply chain trainings; and OJT 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 mRDTs; 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 stock cards & out-patient registers at facilities lacking them. Follow up has also focused on malaria diagnosis using RDTs. TO7 state logistics advisors,NMEP,SMOH and TSHIP staff are involved in the data collection process. EUV findings were shared with NMEP,MAPS, TSHIP,SMOH and local government. Reports and strategies are discussed at regular malaria stakholder 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. MOHSW now depends on EUV commodity stock out information to adjust for its forecasts, and EUV experience resulted in revisiting the R&R report form and adding days 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 strenthened through a national workshop focused on enhancing quick communication of findings to key stakeholders (NMCC, Mission, PMI, provincial govenments) 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; Mapi 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 SCMS (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 personel 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 RH 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 spilt 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 TO7, 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 OJT 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.	NCMP	NMCP and Central de Medicamentos e Artigos Medicos (CMAM) both provide data collectors each quarter. NMCP provides supervision of the EUV.	NMEP, State Ministry of Health of all PMI focus states, MAPS, TSHIP	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, 15 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 floods; 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 (DELIVER & SCMS) in order to reach more SDPs, decided to standarize the stocktaking tool and use it in the SCM supervision, with this we will be able to habe 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 clinitian to check on case management from the files. The SCM supervision do not include NMCP staff and can be performed by the regional/provincial advisors with provincial permission and does not include, necesarily, central level staff.		EUV surveys have started to be implemented in Zanzibar 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 assesed 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 Zanzibar is split between SCMS, TO4 and TO7.	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 HFs closing due to the outbreak. One particular example is Margibi County, where 100% of HFs (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 PMI-funded state ever recorded any cases of Ebola. The issue is not applicable.	None	None	None
Collecting data on LLINs & folic acid	Data is currently collected on LLINs, and folic acid can be added to the next round of reporting.	Data is already collected on folic acid and LLINs	Not currently collecting, but these can be added.	LLINs are already being included; the country will discuss the feasibility of including folic acid with the NMCP.	Data is currently collected on LLINs; however, since 35 products are already being collected, adding folic acid may prove to be a challenge.	Currently capturing data on LLINs. Folic acid is not currently included in EUV.	Not currently collecting data on LLINs or 0.4mg folic acid. Does collect information on ferrous sulphate tablets, which contain folic acid.	LLINs 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 NMCC/PMI. The tracking system beyond the district would be a challenge. 0.4mg folic acid is not managed in-country.	Until now, LLINs 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 LLINs 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).

Appendix K. EUV Commodities Collected By Country

Item	Burkina Faso	Ghana	Liberia	Malawi	Mozambique	Nigeria	Tanzania	Zambia	Zimbabwe
ANTIMALARIALS									
- AL 1x6 (yellow - strip of 6)		✔		✔	✔	✔	✔	✔	✔
- AL 2x6 (blue - strip of 12)		✔		✔	✔	✔	✔	✔	✔
- AL 3x6 (red - strip of 18)		✔		✔	✔	✔	✔	✔	✔
- AL 4x6 (green - strip of 24)		✔		✔	✔	✔	✔	✔	✔
- AS/AQ 3 tabs, 25/67.5 mg	✔	✔	✔	✔		✔			
- AS/AQ 3 tabs, 50/135 mg	✔	✔	✔	✔		✔			
- AS/AQ 3 tabs, 100/270 mg	✔	✔	✔	✔		✔			
- AS/AQ 6 tabs, 100/270 mg	✔	✔	✔	✔		✔			
- Sulphdoxine/Pryimethamine (SP) tablet	✔	✔	✔	✔	✔	✔	✔	✔	✔
- Quinine tablet	✔	✔	✔	✔	✔	✔	✔	✔	✔
- Quinine injection	✔	✔	✔	✔	✔	✔	✔	✔	✔
- Artesunate injection	✔	✔			✔	✔	✔		
- Dihydroartemisinin-Piperquine (DHP) tab		✔							
- Artemether injection		✔	✔			✔		✔	
- Severe Malaria Kit (U5s)	✔								
- Severe Malaria Kit (Pregnant Women)	✔								
OTHER MALARIA COMMODITIES									
- LLIN (bednets)	✔	✔	✔	✔	✔	✔	✔	✔	✔
- Malaria RDT test	✔	✔	✔	✔	✔	✔	✔	✔	✔
FAMILY PLANNING & MATERNAL HEALTH MATERIALS									
- Combined oral (Microgynon) cycle	✔	✔	✔		✔		✔	✔	
- Condoms (piece)	✔	✔	✔	✔	✔		✔	✔	
- Condoms (female)		✔		✔					
- Depo (injectables) vial	✔	✔	✔	✔	✔		✔	✔	
- Folic Acid (.4 mg)	✔	✔	✔			✔			
- Implant Levonorgestrel 0.75mg/rod x 2	✔	✔	✔	✔			✔		
- Implant Etonogestrel 68 mg /rod x 1				✔					
- IUDs (piece)	✔	✔			✔		✔		
- Magnesium sulfate Injection 500mg/ml, 2ml, 5ml, 10ml vials			✔				✔		
- Misoprostol 200µg Tablets							✔		
- Oxytocin injection 10UI/ml			✔	✔			✔		
- Progestin-only (Microval / Microlut) cycle		✔			✔		✔		
HIV/AIDS									
- Alluvia [LPV/r 200/50]							✔		
- Atripla[TDF300/FTC200/EFV600]							✔		
- Combivir		✔					✔		
- Deter HIV				✔					
- Duovir N ped [3TC30/AZT60/NVP 50]							✔		
- 'Duovir N[AZT300/3TC150/NVP200]							✔		
- Efavirenz		✔					✔		
- First Response test		✔							
- Lamivudine [3TC 150mg]							✔		
- Nevirapine		✔					✔		
- Oraquick test		✔							
- Stavudine		✔							
- Tenofovir [TDF 300mg]							✔		
- TLE [TDF300/3TC300/EFV 600]							✔		
- Truvada[TDF300/FTC200]							✔		
- Unigold test				✔					
- Zidovudine		✔					✔		
OTHER									
- Amoxicillan (250 mg/suspension)		✔							
- Benzyl Penicillin inj.								✔	
- Clindamycin									✔
- Cotrimoxazole (480 mg/suspension)		✔							
- Doxycycline									✔
- Metronidazole tab			✔					✔	
- Microscopy slides									✔
- Pediatric TB kit		✔							

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