



# USAID | DELIVER PROJECT

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## Task Order 7 (Malaria):

FY2013 Semi-Annual Report

October 2012–March 2013



**MAY 2013**

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**FY2013 Semi-Annual Report**

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## **USAID | DELIVER PROJECT, Task Order 7**

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

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### **Abstract**

This annual report documents the activities of Task Order 7 during FY2013 (October 1, 2012–March 31, 2013). Key sections highlight the major activities under each objective—the accomplishments, the implantation issues, and proposed solutions.

Cover photo: Benin, 2013. Local staff unload a boat of long-lasting insecticide-treated bed nets. USAID | DELIVER PROJECT.

## **USAID | DELIVER PROJECT**

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# Acronyms

ACT	artemisinin-based combination therapy
AMP	Alliance for Malaria Prevention
AutoDRV	[an automated system]
CCB	Change Control Board
CMAM	<i>Central de Medicamentos e Artigos Médicos</i>
CMS	Central Medical Store
CPIR	commodity procurement information request
EWS	Early Warning System
DFID	Department for International Development
DRC	Democratic Republic of Congo
EMLIP	Essential Medicines Logistics Improvement Program
EMMP	Environmental Mitigation and Monitoring Plan
ERP	Enterprise Resource Planning
EUV	End-Use verification
FDC AS/AQ	fixed-dose combination artesunate/amodiaquine
FCT	Federal Capital Territory
FIND	Foundation for Innovative Diagnostics
FHD	Family Health Division
GFATM	Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria
IDA	International Dispensary Association
ILS	integrated logistics system
JSI	John Snow, Inc.
KHI	Kigali Health Institute
LGA	local government area
LLIN	long-lasting insecticide-treated bed net
LMIS	logistics management information system
MIS	management information system
MOH	Ministry of Health

MOHCW	Ministry of Health and Child Welfare
MOH SW	Ministry of Health and Social Welfare
MOP	Malaria Operational Plan
MOPDD	Malaria and Other Parasitic Diseases Division
MSD	medical stores department
MSL	Medical Stores Limited
NMCP	National Malaria Control Program
OAA	Office of Acquisition and Assistance
PHCP	Primary Health Care Package
PMI	President's Malaria Initiative
PMP	Performance Monitoring Plan
POD	proof of delivery
PPMRm	Procurement Planning and Monitoring Report for malaria
PSI	[only use their acronym]
PSM WG	Procurement and Supply Chain Management Working Group
QA	quality assurance
QASP	Quality Assurance Surveillance Plan
RBM	Roll Back Malaria
RDMA	Regional Development Mission Asia
RDT	rapid diagnostic test
RFQ	Request for Quote
SCMgr	Supply Chain Manager
SDLC	System Development Life Cycle
SDP	service delivery point
SCMU	supply chain management unit
SLA	service level agreement
SOP	standard operating procedure
SP	sulphadoxine-pyrimethamine
SPS	Strengthening Pharmaceutical Systems project
STTA	short-term technical assistance
TO	task order
TO Malaria	Task Order Malaria
TOT	training-of-trainers

UNICEF	United Nations Children’s Fund
UPS	United Parcel Service
USAID	U.S. Agency for International Development
USAID/W	U.S. Agency for International Development/Washington Office
USG	United States Government
USP	U.S. Pharmacopeia
WHO	World Health Organization



# Executive Summary

This semi-annual report covers the period from October 1, 2012 to March 31, 2013; it describes the activities of Task Order 7 (TO7), 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 effort to fight malaria in sub-Saharan Africa through the President's Malaria Initiative (PMI). The initiative works in 19 African focus countries and the Mekong region; the PMI is a joint initiative led by the U.S. Agency for International Development (USAID) and Centers for Disease Control and Prevention. TO Malaria has a long-term presence in 11 of the PMI-focus countries, the Mekong region, and two USAID malaria countries.

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.; Abt Associates; Imperial Health Science (IHS, formerly called RTI); UPS Supply Chain Solutions; Logenix International, LLC; MEBS Global Reach, LLC; FHI 360; The Manoff Group, Inc.; 3i Infotech; Center for International Health and Development (Boston University School of Public Health); U.S. Pharmacopeia (USP); Foundation for Innovative New 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**

### **Procurement**

A primary activity of TO Malaria is to support 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 (MOP). During the first six months of FY2013, the project processed 129 requests and placed orders for 22 countries: Angola, Benin, Burkina Faso, Burundi, the Democratic Republic of Congo (DRC), Ethiopia, Ghana, Guinea, Kenya, Laos, Liberia, Madagascar, Malawi, Mali, Mozambique, Nigeria, Rwanda, Senegal, Tanzania, Uganda, Zambia, and Zimbabwe. This compares to 223 requests for all of FY2012. During a six-month reporting period, 145 orders were placed with vendors, for a total value of U.S.\$72<sup>1</sup> million (commodity cost only).

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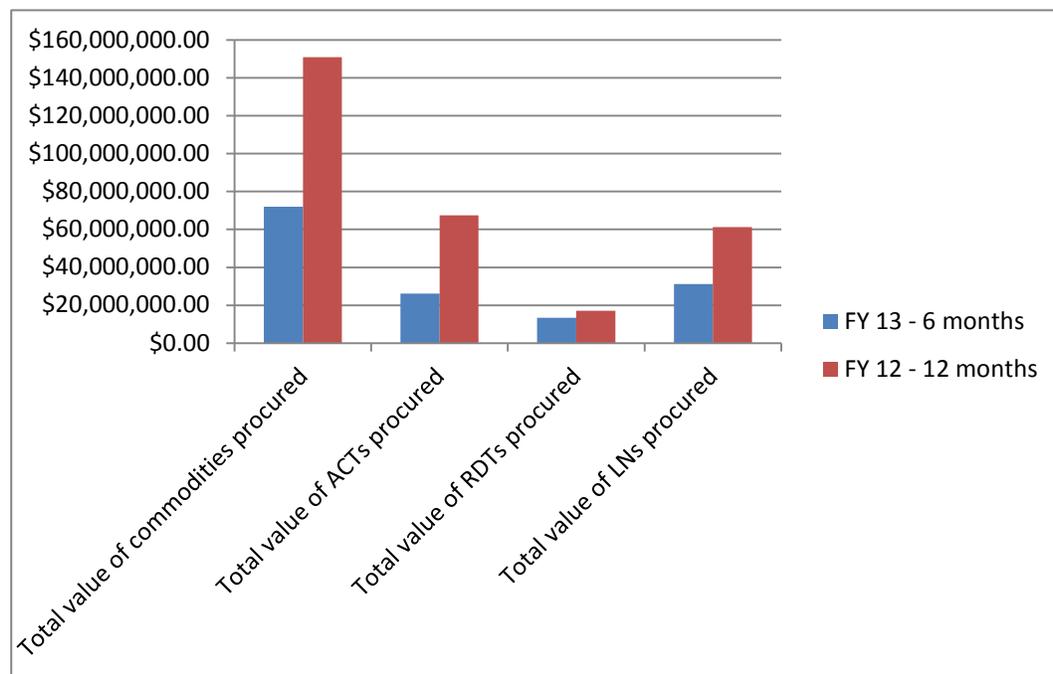
<sup>1</sup> All dollar amounts in this document are U.S. dollars.

Major procurement items included—

- 10.5 million long-lasting insecticide-treated bed nets (LLINs)
- 32.3 million artemisinin-based combination therapy (ACT) treatments—21.5 million treatments of Coartem, 0.1 million treatments of generic artemether-lumefantrine (AL), and 10.7 million treatments of fixed-dose combination artesunate/amodiaquine (FDC AS/AQ)
- 32.2 million rapid diagnostic tests (RDTs)
- 80 microscopes and kits for malaria-testing laboratory upgrades.

Figure 1 shows the total value of commodities procured in this semi-annual report, compared to the total value of commodities procured in FY2012.

**Figure I. Total Value Commodities Procured in Past Six Months vs. Total Value Procured in FY2012**



Only vendors and manufacturers that pass internal requirements (good manufacturing practices [GMP], product stability data, previous supply record, etc.) and/or are included on the PMI preselected list, are invited to bid or quote. The selection of a vendor/manufacturer is based on one several criteria (such as product price and timeliness of deliveries), in response to a Request for Quote (RFQ).

### Challenges and Innovations

The demand for ACTs, including Coartem, and Winthrop FDC AS/AQ continues to grow. PMI was asked to fund an increasing number of *emergency* requirements when, for a variety of reasons, deliveries funded by other donors were delayed. These factors have led to longer lead times. In response, TO Malaria now manages its own inventory of Coartem and Winthrop FDC AS/AQ at the United Parcel Service (UPS) Roermond warehouse in the Netherlands. During the reporting period, the project used the stock to respond to emergency orders from Mali, Mozambique, Ghana,

Laos, Zambia, Senegal, Liberia, and Uganda. Additionally, TO Malaria continued to build on our tactical approach of requesting countries to provide future ACT needs for 6 to 12 months, in advance.

Worldwide demand for LLINs have increased substantially in 2013, due, in part, to a rise in demand from other donors. As a result, LLIN suppliers are offering longer production lead times; careful forward planning is necessary to avoid delay to planned distribution activities.

## **Malaria Commodity Market Landscape and Procurement Performance Assessment**

TO Malaria has completed a detailed assessment of procurement activities and the overall market for malaria commodities. To understand if the trends are consistent with our own procurement data, the assessment, led by PATH, includes interviews with key vendors, analysis of our procurement data, discussions with other procurement agents, and mapping of prices paid for malaria commodities. The report offers recommendations on how we might want to revise our procurement strategies to obtain the best value and availability.

## **Efficient and Secure Delivery of Procured Commodities**

From October 2012 to March 2013, the task order successfully forwarded commodities to support malaria programs in 23 countries. Countries shipped to include Angola, Benin, Burkina Faso, Burundi, DRC, Ethiopia, Ghana, Guinea, Kenya, Laos, Liberia, Madagascar, Malawi, Mali, Mozambique, Myanmar, Nigeria, Rwanda, Senegal, Tanzania, Uganda, Zambia, and Zimbabwe. The freight team coordinated the in-country distribution of LLINs to health facilities in Benin, ACTs in the DRC, and ACTs and RDTs in Angola.

## **Provision of High Quality, Safe and Effective Malaria Products**

The project, through the quality assurance team, consistently works to ensure that high-quality, safe, and effective malaria products are provided. From October 2012 to March 2013, the quality assurance team managed pre-shipment inspection and testing for 17 LLIN orders. All test results were compliant with USAID and World Health Organization (WHO) specifications.

During the reporting period, the Quality Assurance (QA) team managed pre-shipment inspection and testing for 19 orders of RDTs. FHI 360 reviewed all test results before clearing an order for shipment. TO7 contracted with the Foundation for Innovative New Diagnostics (FIND) to support all lot testing of RDT's through the WHO laboratories.

FHI 360 reviewed the manufacturer's Certificates of Analysis for all batches of Coartem that were the project procured (215 batches over 38 orders).

FHI 360 managed sampling, inspection, and testing of all generic artemether/lumefantrine (AL) from IPCA Laboratories. Crown Agents performed sampling and inspection and Vimta Labs tested all lots. Because this product is WHO pre-qualified, FHI 360 released orders for shipment upon completion of sampling, concurrently with the laboratory testing. A total of 162 batches, divided between eight orders, were tested. All results were compliant with U.S. Pharmacopeia (USP) specifications.

FHI 360 reviewed Certificates of Analysis for every batch of FDC AS/AQ procured from Sanofi-Aventis, before releasing the order for shipment; they tested each batch concurrently. All results were compliant with the specifications.

## **Management Information System**

The Management Information System team supported the ongoing operations of TO7, including the establishment of a management information system (MIS) for malaria products. The MIS is available continuously to authorized users from John Snow, Inc. (JSI), the United States Government (USG), and partners—both centrally and in the field via a secure web-based user interface, the USAID | DELIVER PROJECT website. The team modified the ORION ERP system and the USAID | DELIVER PROJECT website to enrich management data availability and operational productivity.

## **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 Task Order Malaria and to reach the PMI's goals.

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

#### **Core-funded activities**

- Pilot innovative approaches to malaria product distribution and data management at the community level, in collaboration with TO4.
- Manage LLIN Packaging—procurement considerations.
- Malaria in pregnancy—matrix of sulphadoxine-pyrimethamine (SP) commodity availability.
- Seasonality and calculating resupply—country applications.

### **Country Highlights—**

#### **Benin**

The project provided short-term technical assistance (STTA) to facilitate the distribution of 510,000 LLINs to all provincial Ministry of Health (MOH) departments, health zones, and health facilities across Benin.

#### **Ghana**

Over 2.4 million LLINs were distributed, which achieved the National Malaria Control Program's (NMCP) objective of universal coverage and ownership of LLINs in homes through door-to-door distribution and hang-up campaigns. In Eastern and Volta regions, the project and partners have supported continuous distribution of LLINs through schools and antenatal and child welfare clinics. More than 200,000 of the LLINs distributed were given directly to high-risk populations using continuous distribution.

The project supported the NMCP to complete the collection and disposal of 12 million empty LLIN plastic bags—the result from the hang-up campaigns—by identifying a plastics recycling plant. Currently, using NMCP resources, all 10 regions have collected and dispatched the empty plastic bags to the recycling plant. The project completed this national effort in the Eastern, Volta, and Ashanti regions.

## **Madagascar**

In the first half of FY2013, the project managed the distribution of 2,085,671 LLINs to 19 districts in Madagascar. The project sub-contracted PSI to implement the distribution, which began in November 2013. Project staff visited 12 districts and oversaw 81 distribution sites.

## **Malawi**

The project manages the parallel supply chain (PSC), which distributes malaria commodities for PMI and the Global Fund; family planning commodities from USAID; and essential medicines kits from the United Nations Children's Fund (UNICEF), with assistance from KFW, Norway, and UK Department for International Development (DFID). The PSC is funded by the Global Fund, USAID, and other donors. In the period from October 2012 to March 2013 the project distributed 3,456,841 ACTs and 535,900 RDTs. SP is received once a month, with other essential medicines in donated kits that are distributed once a month directly to each health facility.

## **Nigeria**

The project began the pilot of the Direct Delivery and Information Capture (DDIC) system, a vendor managed inventory system. The pilot kicked off during the first half of FY2013 with the first two delivery runs in Ebonyi state on January 28, 2013 to 63 health facilities (HFs) in Ebonyi state; they delivered all four presentations of AL and RDTs. The second delivery run was on March 11; it was completed on March 28. In total, 107 facilities received AL and RDTs. The third run is scheduled to begin May 6 and is expected to be completed by June 10; it will deliver to all 200 health facilities in Ebonyi.

The project has supported the Malaria Action Project for States (MAPS) and Targeted States High Impact Project (T/SHIP) by providing last mile distribution services to PMI-supported health facilities in seven of the states supported by either project. In the October 2012–March 2013, the project conducted 21 last mile distribution activities, with a total of 1,660 distinct facility drops.

## **Tanzania**

Through the Last Mile Project, led by Accenture Development Partnerships (ADP), network optimization strategies were used to model and test the direct delivery of health products to health facilities in the Coast region. The success of this pilot encouraged the Medical Stores Department's (MSD) interest in developing their technical capacity in optimization and to take the approach to scale nationally. In January 2013, to support this direct delivery initiative, the project organized and financed a training for six MSD staff on the use of Llamasoft's Transportation Guru route optimization software. Using the software, the project is helping the MSD build internal capacity with a wide range of analysis techniques, enabling users to identify optimal delivery center-to-customer assignments, determine the ideal mode mix, create optimal multi-stop delivery or pick-up routes, determine the best use of assets, or evaluate driver work schedules. Currently, the project is working through the contractual processes to supply MSD with two, year-long, software licenses; we are leveraging technical resources to provide MSD with continuous modeling and analysis support.

## **Zambia**

In collaboration with the Government of the Republic of Zambia (GRZ) and Medical Stores Limited (MSL), the project continues to roll out the Essential Medicines Logistics Improvement Program (EMLIP) for essential medicines, including antimalarial commodities used to treat uncomplicated/complicated malaria and for the prevention of malaria in pregnancy and RDTs, across the country. During the past six months, the EMLIP was rolled out to three districts, for a

total number of 27 districts trained in EMLIP. A total of 104 health staff were trained, for a total of 1,814 number of health staff trained in EMLIP. At the request of the MOH, the project stopped the roll out of EMLIP until sufficient quantities of the EMLIP products arrive in Zambia.

## **Zimbabwe**

The project provides ongoing technical and operational support to the Zimbabwe Informed Push/Primary Health Care Packages (ZIP/PHCP) distribution system, which includes malaria commodities. Support includes providing logistics management information system (LMIS) forms, hardware and software, delivery trucks, monitoring vehicles, and driver support. ZIP/PHCP teams conducted deliveries of malaria, tuberculosis (TB), and selected essential medicines and medical supplies to health facilities in every province in the country in December 2012, and in January and March 2013.

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

### **Core-funded activities**

- *End-Use verification (EUV)*: This activity is a routine monitoring survey implemented by TO7 in PMI-focus countries that have a project office. Using site visits to public health facilities, especially those at lower levels of the supply chain, this activity gathers valuable information about the functioning of the malaria supply chain and the diagnosis and treatment of malaria. Core funding support the establishment, country introduction, and monitoring of the EUVs. Field support covers the routine data collection. During the reporting period, routine data collection for the EUV continued in Ghana, Malawi, Mozambique, Tanzania, Zambia, and Zimbabwe. In addition to field-supported data collection, the activity was initiated in Nigeria and was supported by an STTA visit from TO7 staff from headquarters.
- *Data dashboards*: The project constructed a dashboard template to be used and updated for all countries and to provide an opportunity to triangulate and analyze each country's various data sources.
- *Supporting PMI's impact evaluation*: The project contributed data and analysis to support the overall PMI impact evaluation. The project remains positioned to provide additional support, as requested, although no requests were received during the reporting period.
- *Procurement Planning and Monitoring Report for malaria (PPMRm)*: This is a complementary data collection activity to EUV, providing quarterly visibility of stock levels of ACTs, SP, and RDTs at the central level of the supply chain. Data are reported from 20 countries and Nigerian states, including from nine countries by project staff, as well as nine countries from staff on the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) project. Two countries report through USAID bilateral projects.

## **Country Highlights**

### **Burkina Faso**

The project, in collaboration with the NMCP, analyzes quarterly data from the health districts using the malaria database. Data analyses show the following:

- The reporting rate has continued to increase over time, up to 99 percent in the October–December 2012 quarter.

- RDTs were available at 77 percent of facilities over the October–December 2012 time frame. The system had substantial facility-level stockouts in November and December.
- Seventy-four percent of health facilities had stock available for all four presentations of AS/AQ in October–December 2012. Gaps in availability may be due to overall low levels stock of AS/AQ in the system during the quarter, particularly for FDC AS/AQ 50 mg/135 mg.

### **Ghana**

With numerous partners, including the National AIDS Control Program and the NMCP, the project expanded the Early Warning System (EWS) between October 2012 and March 2013. The EWS uses text messages to report product availability for tracer products. During the EWS pilot, between 79 percent and 92 percent of the 201 facilities participating reported on 27 tracer products weekly; providing significantly greater insight into facility-level stock status than the current paper-based system.

### **Madagascar**

The project contracted with Health Network International (HNI)—a private company that specializes in submitting data through the short message service (SMS)—to develop a tool that will help increase the speed and efficiency of data collection, as part of the LLIN distribution campaign. Data included (1) household census, (2) essential data for micro-planning, (3) number of LLINs received at distribution sites, (4) number of LLINs distributed and remaining stock, and, (5) hang-up visit data. At the end of the reporting period, 15 of the 19 targeted districts had achieved a combined reporting rate of 85.81 percent. The rate was somewhat low due to delays in the reporting for phase 5. Challenges included network coverage, motivating data senders, and insufficient training of data senders. Finally, the average completion rate for all phases of the activity was 78 percent.

### **Rwanda**

Regularly, the project collects malaria LMIS reports. The average reporting rates from August 2012 to January 2013 was 95.6 percent for health facilities and 100 percent for district pharmacies. Prior to this reporting period, the reporting rates were 95 percent for health facilities and 87 percent for district pharmacies. The reports are computed, analyzed, and shared with Malaria and Other Parasitic Diseases Division (MOPDD) for decisionmaking.

### **Tanzania**

On the mainland, the project continues to implement the integrated logistics system (ILS) and the ILSGateway reporting system. The ILSGateway—an SMS-based facility-level stock status data collection tool—was rolled out to half of the 5,000 health facilities in Tanzania. The ILSGateway provides real-time stock status information to decisionmakers throughout the supply chain on malaria commodities. Results from the ILSGateway evaluation in November 2011 indicated that 97 percent of facilities improved their on-time submission rates for stock reports. Another 93 percent improved their stock counting exercises because of the routine mobile alerts they received. More important, 45 percent of facilities reported improved product availability, indicating the overall positive effect the ILSGateway has had on the medicine supply system in Tanzania.

# **Strengthen the Accountability of In-Country Supply Chains That Manage Malaria Products**

## **Country Highlights**

### ***Liberia***

In February, the project, in collaboration with the MOH, supply chain management unit (SCMU), NMCP, Family Health Division (FHD), and CHTs, facilitated a monitoring, supervision, and feedback exercise in two counties. The objective was to use LMIS data to assess system performance. The teams conducted physical inventories of tracer products and updated commodities bin cards at county depots. They also defined both electronic and manual filing systems. At most health facilities, the teams also conducted inspections of the stores, did physical counts, and reviewed warehouse and transaction records.

### ***Madagascar***

To address a lack of coordination and supply chain management skills among partners, the project was tasked with leading the National Committee of Acquisition, Supply and Stock Management. As the lead facilitator for this group, the project has assisted with improving the accuracy of stock status data and, in turn, the ability of partners to place timely orders for sufficient numbers of commodities. These improved systems and skills have led to better availability of malaria products, especially at the community level, by increasing the number of distribution plans and Integrated Management of Childhood Illnesses site coverage, as well as decreasing the number of weeks for the GAS committee to react to crises. The committee has highlighted unmet needs and has successfully forecasted ACT, RTD, and SP needs for the next three years.

### ***Nigeria***

The project conducted assessments of five of the seven states where PMI malaria commodities are stored and distributed. The assessments enable the project to review the storage conditions and warehouse management of the state Central Medical Stores and provide an opportunity to advise the state governments or directly introduce needed interventions. The assessment found that none of the stores in the MAPS project states are pharma-compliant, and that each store has either management or infrastructure issues that need to be addressed. Cross River's infrastructure problems have recently been resolved; that store is now available.

### ***Rwanda***

In collaboration with the MOH and SCMS, the project conducted the 2012 annual physical inventory of public health commodities from December 17–21, 2012. There were 90 data collectors; 55 pharmacy students benefited from the pre-service Supply Chain Management Course from the National University of Rwanda—10 teachers from six nursing schools who attended the nursing school pre-service training training-of-trainers (TOTs), and 25 laboratory technicians. They visited 574 health facilities (30 district pharmacies, 41 district hospitals, and 503 service delivery points [SDPs]).

### ***Zambia***

With MSL staff, project staff conduct monthly physical inventories at the MSL. Through these routine counts, stock on hand is compared to quantities recorded on stock cards and in the warehouse MIS, so that any discrepancies can be reconciled.

Staff also conduct regular monitoring and supervision activities in both EMLIP and non-EMLIP districts. These visits have helped reduce the number of clinically diagnosed malaria cases because RDT usage has increased, health staff have been trained in malaria case management, and malaria stockouts have been reduced at the SDP level.

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

### **Country Highlights**

#### ***Burkina Faso***

The project assisted the malaria commodity quantification committee (comprising the NMCP, pharmacy department, and CAMEG) to analyze the ACT stock situation at the central level and to review the supply plan for the remainder of 2012 and 2013. In collaboration with the NMCP, the project held a workshop for the malaria commodity quantification for 2014-2015. To secure the availability of malaria commodities, the project has helped the ACT committee coordinate donor and government funding better. Through this coordination, the project also assisted the ACT committee in using the entire budget amount allocated by the Government of Burkina for malaria commodity procurement for 2013.

#### ***Ghana***

The project has completed and submitted to the MOH the final draft of the Ghana Supply Chain Master Plan (SCMP). The document includes the Terms of Reference (TOR) for the interim management team, the cabinet memo, implementation plan, and M&E plan for the strategy. The project continued to provide technical and logistical support to the technical working group of the MOH for implementing the 5-year SCMP. As part of the advocacy process to obtain stakeholders buy-in for the SCMP, the project assisted the MOH in making a presentation on the SCMP to a meeting of the Regional Directors of Health Services of the GHS and to a meeting of Health Supply Chain Practitioners in Ghana (HESSPAG). These forums were avenues for the MOH to explain the SCMP to key stakeholders and to correct misconceptions about the plan.

#### ***Liberia***

The project provided assistance in planning for the annual quantification exercise for the 3rd quarter of FY2013. This included supporting the NMCP and the SCMU in collecting data from the last 12 months from clinics, health centers, hospitals, and county depots in 11 of the 15 counties. In addition, the project assisted the NMCP Commodity Security Team to facilitate meetings where the quantification, malaria commodities stock status, and the community-based distribution system implementation was discussed.

#### ***Nigeria***

In October 2012, following the National Quantification training-of-trainers, which took place in Calabar in September, a state-specific quantification exercise was conducted for all the geo-political regions of the country. Project staff provided technical assistance for the North-East zone at their State Specific Quantification exercise and gap analysis. Quantification and gap analysis for each of the six states in the zone were concluded and reports were compiled for supply planning meeting in Abuja.

## **Tanzania**

In collaboration with SCMS, the project conducted a strategic review of the national health commodity supply chain systems, with special focus on MSD. The focus of this assessment, to ensure increased availability of commodities within Tanzania's public health system, was to (1) identify systemic strengths and weakness within MSD's operation and at other levels of the national healthcare system, and (2) identify practical and implementable interventions that address identified gaps and improve efficiencies. Findings and recommendations were proposed in the following thematic areas: financing, human resources, data visibility, accountability, leadership and governance, operational processes, and the private sector.

## **Zimbabwe**

The project, in collaboration with SCMS, assisted the Ministry of Health and Child Welfare (MOH CW) to conduct the national quantification. The exercise generated 24-month forecasts and 18-month supply plans for ART and PMTCT ARVs; HIV rapid tests; EID bundles and CD4 POC reagents; TB and malaria products; as well as other selected essential medicines and medical supplies. The supply plans will inform orders to be placed by the MOH CW and all partners, including PMI and Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria (GFATM). Recommendations were also made to address funding gaps, improve forecast accuracy, and ensure commodity security.

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

### **Country Highlights**

#### **Ghana**

Following the success of LLIN continuous distribution, the project collaborated with USAID's NetWorks Project and the Focus Regions Health Project to train 564 health workers (district-level supervisors, nurses, disease control officers) in all the districts of the Western region and 679 health personnel (district-level supervisors, nurses, disease control officers) in all the districts of the Central region to support the future implementation of continuous distribution of LLINs through antenatal and child welfare clinics. The project's efforts focused on training the health personnel in logistics management to ensure a continuous availability of the LLINs for the program.

#### **Liberia**

The project assisted NMCP to create a Supply Chain Management Team to support the 10-year Supply Chain Management Plan. Project staff met weekly with the SCM team to build their capacity in reviewing and revising LMIS malaria data and measuring selected supply chain performance indicators. This enabled the team to identify and act on issues that are affecting the performance of the malaria supply chain.

#### **Nigeria**

Project staff coordinated the roll out of the malaria commodity logistics system (MCLS) in Oyo and Cross River states. In total, 1,019 health personnel from 560 HFs were trained in malaria commodities management and data reporting.

#### **Rwanda**

After introducing the logistics management pre-service training to the pharmacy department of the National University of Rwanda, the project; in collaboration with the University, provided

orientation on supply chain management to 17 teachers from six schools of nursing/Kigali Health Institute (KHI) faculty in October–November 2012. At the end of the TOT, participants developed an outline of SCM sessions that will be integrated into the nursing curriculum. The primary goal of this initiative is to strengthen health logistics systems in Rwanda by building capacity in health commodity logistics management for health personnel in Rwanda through a sustainable pre-service training program. This approach ensures that health commodity logistics management is adequately included in the training curricula of health professional schools, and for Rwandan professors and instructors in these schools to be fully capable of teaching health logistics.

## **Objective 3: Improve the Global Supply of Malaria Commodities**

### **Strengthen International Collaboration**

- **Support to the Roll Back Malaria Procurement and Supply Management Working Group.** TO Malaria is an active member of the Procurement and Supply Chain Management Working Group (PSM WG). The Task Order Director is the co-chair for the PSM Bottleneck Workstream. During the report period, TO7 participated in the 9th PSM WG meeting in Geneva, November 19–21. We presented on the results of a Global Fund bottleneck assessment conducted in DRC and Tanzania. We also chaired a sub-group that focused on LMIS, sharing project experience from several countries. The subgroup recommended key areas to include in the PSM WG workplan, including a broad partner meeting to agree on key elements of LMIS, gather success stories around LMIS implementation, and convene an LMIS workshop for country delegations. These activities are in the workplan; but, currently, there is insufficient funding to implement them.

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

- **Support to the Interagency ACT Supply Task Force.** In September 2011, WHO/GMP established an interagency task force whose mandate is to collect and analyze a holistic set of data to identify countries at risk of ACT shortfalls and to provide recommendations to mitigate the risk. The task force was formed in response to concerns that peaks in demand might strain the existing production capacity and result in supply shortages at the country level. Through its members, the task force collects data from countries, manufacturers, and funders; they then analyze, validate, and identify ACT supply shortage risks; then work to mitigate the risks. TO7 provides support in data collection, analysis, and management for the task force.
- **RDT Procurement Analysis.** The task order analyzed its RDT procurement since 2008. The price analysis looked at variation, over time; by quantity, country, and product; and compared, competed, and sole-sourced prices. The main findings were—
  - The volume of procurement has almost doubled each year.
  - The competed prices were between 30-48 percent lower than sole-source prices.
  - Prices were lower for all RDTs, except two brands.
  - There was significant variability in prices for the same test across countries.

Based on this analysis, we are revising our RDT procurement approach to lock-in low ceiling prices, while still competing where country protocol allows.

## Implementation Challenges and Solutions

- **Long lead times for LLINs.** The country is experiencing long lead times for LLINs—currently, 9–11 months. This is because of a variety of factors, including high demand from the country level and the unique nature of each LLIN procurement; clients must carefully review branding requirements, specifications, and packaging. In response to these challenges, the project is engaging with vendors to verify their proposed lead times and negotiating for better lead times; encouraging countries to submit their commodity procurement information request (CPIRs), as soon as possible; and, for planning, providing feedback on realistic lead times.
- **In-country registration.** Products procured by the project must be registered in the countries where they are to be delivered. This is a challenge for some products, such as essential medicines and SP. Registration lead times can be very long (more than two years in some countries). Furthermore, the waiver process is often not clear, or conflicting information is given. The project continues to work closely with field offices in-country and with drug regulatory boards and agencies in an effort to maintain accurate and up-to-date registration information. We are also documenting registration for the main manufacturer, for products like SP, to determine if direct procurement from a few key manufacturers might help address access to registered products.
- **Managing expectations around lead times.** The project continues to receive CPIRs with the desired receipt dates that are not possible, given the steps in the procurement and shipping processes. To manage expectations and provide good service to missions and country programs, the project developed and disseminated a lead time table to PMI and our field offices; it provides estimates of lead times, by commodity; as well as estimated shipping time, including both air and sea, for each country.
- **Customs clearance and arrival of goods in-country.** Clearing project-procured commodities through customs remains a challenge in certain countries, including Nigeria, DRC, Mozambique, and Angola. The project is implementing country-specific solutions for these unique challenges.
- **Data quality and availability.** Real data on consumption, stock on hand, and shipment information are necessary to effectively plan for the country's commodity needs. Unfortunately, for a variety of reasons, the quantity, quality, and regularity of the data provided is sometimes questionable; this diminishes overall confidence in the system. Where LMISs are already in place, the project is focused on strengthening these existing systems to ensure that the data moving up and down the supply chain is reliable. In other countries, the project continues to work with government counterparts to put practical and reliable information systems into place. There are still significant sensitivities around the sharing of MOH-*owned* data in multiple countries.
- **Governance challenges to in-country activities.** Governance issues at the country level continue to present significant barriers to project implementation in a variety of countries. Both political and practical challenges result from these situations; they have a direct impact on TO Malaria's ability to both work with host country systems and to support their supply chains. High-value malaria commodities in-country are still at risk for pilferage. The project continues to develop and implement warning systems, both to prevent and identify leakage, as early as possible. For example, in Tanzania, the ACT monitoring activity tracks ACTs to the clinic level to ensure their safe arrival at the periphery of the health system.

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

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

### **Procurement**

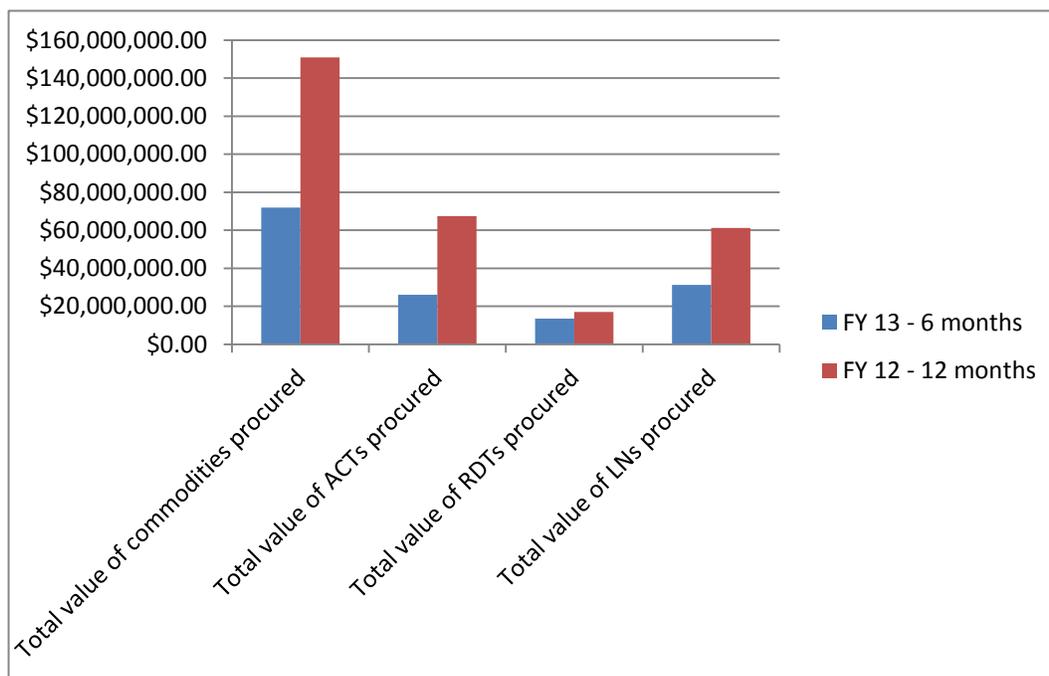
A primary activity of TO Malaria is to support PMI by procuring malaria commodities in response to requests placed by the USAID Missions; the requests are based on the needs outlined in the yearly Malaria Operational Plans (MOPs). During the first six months of FY2013, the project processed 129 requests and placed orders for 22 countries: Angola, Benin, Burkina Faso, Burundi, DRC, Ethiopia, Ghana, Guinea, Kenya, Laos, Liberia, Madagascar, Malawi, Mali, Mozambique, Myanmar, Nigeria, Rwanda, Senegal, Tanzania, Uganda, Zambia, and Zimbabwe. This compares to 223 requests for all of FY2012.

During a six-month reporting period, 145 orders were placed with vendors, for a total value of U.S.\$72 million (commodity cost only).

Major procurement items included—

- 10.5 million LLINs
- 32.3 million ACT treatments—21.5 million treatments of Coartem, 0.1 million treatments of generic AL, and 10.7 million treatments of FDC AS/AQ
- 32.2 RDTs
- 80 microscopes and kits for malaria-testing laboratory upgrades.

**Figure 2. Comparison of Dollar Value of Commodities Procured by FY and Commodity Type**



### Challenges and Innovations

The demand for ACTs, including Coartem, and Winthrop FDC AS/AQ continues to grow. PMI has been asked to fund an increasing number of *emergency* requirements when deliveries funded by other donors have been delayed for a variety of reasons. This has led to longer lead times. In response, TO Malaria now manages its own inventory of Coartem and Winthrop FDC AS/AQ at the United Parcel Service (UPS) Roermond warehouse in the Netherlands. During the reporting period, the project used the stock to respond to emergency orders from Mali, Mozambique, Ghana, Laos, Zambia, Senegal, Liberia, and Uganda. Additionally, TO Malaria continued to build upon our tactical approach of requesting countries to provide future ACT needs for 6 to 12 months in advance.

Worldwide demand for LLINs has increased substantially in 2013; due, in part, to a rise in demand from other donors. As a result, LLIN suppliers are offering longer production lead times and careful forward planning is necessary to avoid delays to planned distribution activities.

TO Malaria has also increased the enforcement of national pharmaceutical regulatory requirements and has had increased difficulty in obtaining appropriate waivers. Many quality assured sources and presentations of essential drugs, such as SP, are not registered with national authorities. To better understand and mitigate these challenges, TO Malaria is currently analyzing the national regulatory environment for key commodities.

### Malaria Commodity Market Landscape and Procurement Performance Assessment

TO Malaria has completed a detailed assessment of procurement activities and the overall market for malaria commodities. To understand if the trends are consistent with our own procurement data, the assessment, led by PATH, includes interviews with key vendors, analysis of our procurement

data, discussions with other procurement agents, and mapping of prices paid for malaria commodities. The report recommends options to revise our procurement strategies to obtain the best value and availability.

## Procurement Scorecard and Performance Monitoring Plan Indicators

During the reporting period, the project has continued to monitor system performance monthly using the scorecard to show results. The targets for this period are 85 percent or higher (green), from 84 to 65 percent (yellow), and from 64 percent or lower (red).

During this reporting period, the received in-country by desired receipt date indicator was above the target performance level (86 percent), as were the right quantity and right condition received indicators (100 percent).

During this period the project stopped tracking the *orders shipped on time by actual ship date* indicator. Analysis showed that, due to mandatory national pre-shipment requirements that are outside the project's control, this indicator could not reflect the true freight forwarder performance. A review is ongoing to identify and implement a new indicator to accurately track freight forwarder performance.

The project will compile and report on monthly scorecard results and provide summaries in the semi-annual and annual reports. See table 1 for the Performance Monitoring Plan (PMP) procurement process.

**Table 1. Performance Monitoring Plan for the Procurement Process, October 1, 2012–March 31, 2013**

Operational Area	Indicator	Status
Monthly system scorecard implemented	Monthly scorecard available	Available monthly
Orders received on time (data from October 2012 to March 2013)	% of orders received by countries within a month of agreed date with the mission	86%
Suppliers deliver ordered commodities to satisfy contractual requirements	Supplier fill rate (contracted quantity on time)	100%
Respond to emergency orders	Percentage of emergency orders responded to during the previous 6 months	19/19 = 100%

## Efficient and Secure Delivery of Procured Commodities

From October 2012 to March 2013, the task order successfully forwarded commodities to support malaria programs in 23 countries, including Angola, Benin, Burkina Faso, Burundi, DRC, Ethiopia, Ghana, Guinea, Kenya, Laos, Liberia, Madagascar, Malawi, Mali, Mozambique, Myanmar, Nigeria, Rwanda, Senegal, Tanzania, Uganda, Zambia, and Zimbabwe. The freight team coordinated the in-country distribution of LLINs to health facilities in Benin, ACTs in DRC, and ACTs and RDTs in Angola.

Shipment execution tasks include freight quote preparation, vendor door pickup, freight booking, shipment tracking, customs clearance, and final recipient delivery. The project is using the Electronic Data Interface (EDI) with the contracted freight forwarders—Logenix, MEBS and UPS SCS—to update shipment milestones in ORION, which is part of the project’s MIS. The team continues to update the country-specific shipping instructions in ORION shipment milestones to provide shipment visibility to MIS website users.

Per the freight strategy for the task order, shipments are being competed and bids provided by the contracted freight forwarders for all shipments, except when the vendor is expected to provide freight services; for shipments from a vendor to a UPS SCS warehouse (these shipments will be handled exclusively by UPS SCS); for shipments when USAID Washington agrees with the project’s recommendation and justification for exclusive use of a freight forwarder to a specific country; and for *emergency* shipments.

The relatively large shipment sizes and limited airline capacity continued to present challenges, but the freight team responded effectively and will continue to research strategies to ensure timely and complete deliveries. For instance, in November 2012, the freight manager traveled to Kenya, with the deputy director of procurement, to discuss the challenges of importing PMI commodities into the country and to establish a strategy that would improve the process for upcoming shipments.

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

### **LLINs**

From October 2012 to March 2013, the quality assurance team managed pre-shipment inspection and testing for 17 orders from Vestergaard Frandsen, Sumitomo, and Bestnet. Crown Agents performed sampling and inspection of all consignments at the manufacturing sites. FHI 360 reviewed the inspection reports and released the orders for shipment, concurrently with laboratory testing. All test results were compliant with USAID and WHO specifications. Complete test results were available within 21 to 94 days after sampling (median 56 days). After final review of all results, FHI 360 created Certificates of Conformance for each consignment and sent electronic files to the in-house pharmacist at PMI/USAID.

The mission in Rwanda reported a complaint about the size of conical nets that were delivered. The QA team supported USAID and the JSI procurement team with information about the correct method to measure net dimensions. FHI 360 verified the net dimensions and it was determined that the dimension check in-country did not use the appropriate method. No other product complaints were reported.

### **RDTs**

During the reporting period, the QA team managed pre-shipment inspection and testing for 19 orders of RDTs from Standard Diagnostics, Orchid, AccessBio, and Premier Medical. FHI 360 reviewed all test results before clearing an order for shipment.

TO7 contracted with FIND to support all lot testing of RDTs through the WHO laboratories. Lot testing for PMI included initial testing of 131 batches and 18-month stability of 29 batches by the Malaria RDT Quality Assurance Laboratory at the Research Institute for Tropical Medicine (Philippines) and the Laboratory of Molecular Epidemiology at the *Institut Pasteur du Cambodge* (Cambodia).

Results of initial pre-shipment testing were available after 2–21 days from sampling (median 8 days), and all results were compliant with WHO standards.

## **Pharmaceuticals**

### **Coartem**

FHI 360 reviewed the manufacturer's Certificates of Analysis for all batches of Coartem that the project procured (215 batches over 38 orders). Under the PMI policy, Coartem does not require routine pre-shipment testing because the U.S. Food and Drug Administration (FDA), a stringent regulatory authority, regulates the product. FHI 360 continues to perform identity testing using near-infrared spectroscopy and limited chemical testing for the amount of active ingredients.

### **Generic AL**

FHI 360 managed sampling, inspection, and testing of all generic AL from IPCA Laboratories. Crown Agents performed sampling and inspection and Vimta Labs tested all lots. Because this product is WHO pre-qualified, FHI 360 released orders for shipment after sampling was complete, concurrent to laboratory testing. A total of 162 batches, divided over eight orders, were tested.

Test results were available for 29 to 63 days after sampling (median 51 days) and all results were compliant with USP specifications.

### **Fixed-Dose AS/AQ**

FHI 360 reviewed Certificates of Analysis for every batch of FDC AS/AQ procured from Sanofi-Aventis, before releasing the order for shipment; but, like the other WHO-prequalified products, they tested each batch concurrently to releasing product. All results were compliant with the manufacturer's specifications. FHI 360 also performed identity testing using near-infrared spectroscopy.

### **Other Pharmaceuticals**

Other pharmaceuticals procured by the project included parenteral formulations of AS/AQ, chloroquine phosphate tablets, dextrose intravenous infusions paracetamol (oral tablets and injectable formulation), oral primaquine, oral quinine and quinine resorcine injectable formulation, quinine sulfate tablets and SP tablets. These products are not WHO-prequalified; therefore, they were tested pre-shipment by independent WHO-prequalified and/or ISO-certified laboratories, prior to release for shipping. FHI 360 reviewed all results before releasing the orders for shipment. All tested samples were compliant with the applicable compendia specifications and no product complaints were reported. Test results were available 36 to 52 days (median 41 days) after sampling.

**Table 2. Performance Monitoring Plan Indicators for the Quality Assurance Process, October 1, 2012–March 31, 2013**

<b>Support Area</b>	<b>Operational Area</b>	<b>Indicator</b>	<b>Status</b>
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	56 days Range: 21–94 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	8 days Range: 2–21 days
		% of generic artemether/lumefantrine (AL) shipments with pre-shipment certificates of conformance	100%
		Median time and range (in days from sampling) required for pre-shipment AL test reports	51 days Range: 29–63 days
		% of AS/AQ shipments with pre-shipment certificates of conformance	100%
		Median time and range (in days from sampling) required for pre-shipment AS/AQ test reports	17 days Range: 9–68 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	41 days Range: 36–52 days

## **Management Information Systems (MIS)**

The MIS team supported the ongoing operations of the Task Order, including the establishment of a logistical warehouse for the malaria products. Day-to-day operations are supported by recording and providing for management review:

- commodity needs by country and recipient program
- shipment requests by country and recipient program

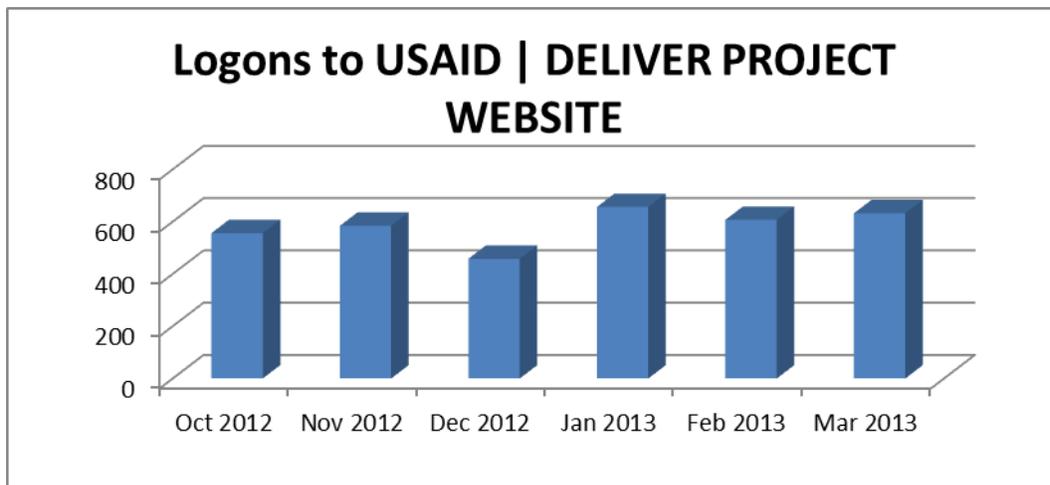
- financial accounts by country and funding source
- the status of shipments.

The MIS is available continuously to authorized users from JSI, the USG, and partners—both centrally and in the field, via a secure web-based user interface—the USAID | DELIVER PROJECT website.

The MIS is managed according to project management standards as identified by the project Management Institute using a standard Software Development Life Cycle (SDLC). Periodic updates of the MIS are provided to ensure customer satisfaction based on requests from internal and USG sources. The Change Control Board (CCB) directs and prioritizes these periodic updates. The CCB process provides for input from USAID and other stakeholders, and assesses the impacts of individual issues and prioritizes resource allocation.

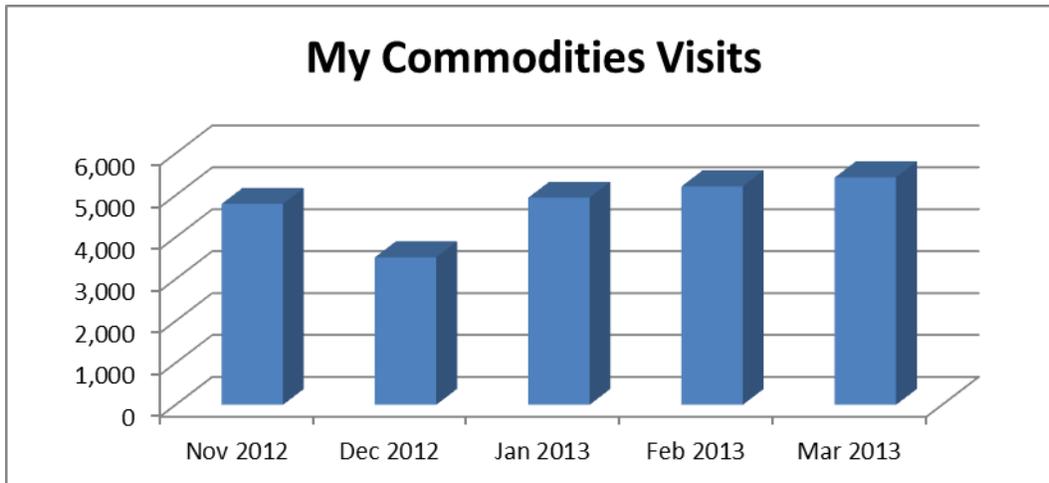
MIS reliability, availability, and ease of secure access is measured against a service level agreement (SLA), and we met or exceeded all standards in the reporting year. Figures 3, 4, and 5 show key MIS measurements from the past year.

**Figure 3. Log-Ons to Project Website**



The USAID | DELIVER PROJECT WEBSITE is accessed by an average of 582 (10% year-to-year increase) unique log-on sessions per month. Each successful log-on and data access by an authorized user increases the count.

**Figure 4. Website Visits to My Commodities**



The My Commodities Visits shows the number of times per month that authorized users have accessed the USAID | DELIVER PROJECT website My Commodities web page to ascertain shipment or financial information. The average monthly visits are about 4,779, with the trend showing an increase. This data is now measured by Google Analytics software. Prior year measurements, including October 2012, are not comparable. The shipment data is updated three times during each business day to provide the most current status.

**Figure 5. Availability of Website**



This chart is a measurement of the amount of time per month that the USAID | DELIVER PROJECT website is available for access, excluding scheduled maintenance on the weekends. The standard is 99.5% availability; it was exceeded each month during the reporting period.

## **Maintenance Work Completed**

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

## **Enabled Multiple Shipments (ASNs) per Purchase Order**

A change was implemented that allows for the creation of multiple ASNs (shipments) per direct drop purchase order (PO). This allows for an order from a manufacturer to be delivered in multiple smaller shipments while accommodating the necessary financials to ensure proper account utilization. In the past, a new PO was required for each shipment; this will save considerable resources and provide improved accuracy. The View Shipments report on the website has been updated so that the display sequence of the *order status* column for this report more accurately reflects the actual processing sequence from start to finish.

## **Report Enhancements**

- Completed the listed report enhancements to aid in management oversight.
- Enhanced the Six-Year Quantity and Value Summary Report, and the Quantity and Value Summary Report, to allow selection and segregation of data by funding source or region. This now provides identical functionality as the Two-Year Quantity and Value Summary Report, and it is easier to use for research.
- Report Enhancements. Upgraded several reports to provide more accurate and timely management information.
- Added a new column, Created By, to the Purchase Order Pending Goods Receipt Notice Report, to determine who created a PO.
- Added a new column, Funding Source, to the scorecard query Orders Received On-time to provide better tracking information.
- Created a new report by using the Purchase Order Details Report as a base and adding a new column for Goods Available Date and ordering data based on this date.
- Implemented numerous changes to the Purchase Order Details by Task Order Report, including renaming to Purchase Order Details by Commodity Program Area, adding a new Commodity Program Area column in addition to the existing Task Order column so that both can be identified, and adding a column to display POT financial information.
- Enhanced the Service Invoice Summary Report by adding a new column, Funding Source.
- Created five new reports to aid in workload tracking and analysis. These reports allow review of transactions by creation date (document date), with accompanying detail information. They include RO, ASN, DN, PO, and Financial Transactions, all by document date.

The MIS team will continue to focus on day-to-day operational support, including ad hoc queries, user assistance, anomaly research and resolution, and pre-project definition and estimation. The project will continue to schedule CCB meetings with USAID representatives, including the USAID senior MIS advisor; as well as regular meetings for task order directors on system changes. The project will continue to provide monthly development updates to task order managers and USAID representatives.

During the upcoming quarter, one major MIS enhancement to be implemented allows for automated vendor returns. Currently, if a product is returned to a vendor, the necessary financial and inventory transactions are completely manual, which may lead to human error. This change will automate the process, significantly improving accuracy and reducing the need for manual intervention.



# **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 Task Order Malaria and to reaching the goals of the PMI. The following activities were undertaken to strengthen in-country supply systems and build greater capacity for improved management of malaria commodities at the local level.

## **Strategic Leadership Summit**

From March 11–19, 2013, the Supply Chain Management System (SCMS) project and the USAID | DELIVER PROJECT held their first joint summit, bringing together a cross-section of staff from field and the headquarters of the two projects. The main objectives of the event were to (1) identify how best to achieve patient-centric health supply chains for family planning, HIV, malaria, and other health areas; and to synthesize lessons that will support achievement of the global health objectives; (2) identify areas and mechanisms for harmonizing how we operate across the two projects; and (3) identify ways we can build country supply chain ownership through leadership, commitment, and capability.

Summit participants identified broad strategic approaches to improving access to health commodities, and they discussed how to apply lessons learned to implement them, as well as how to identify barriers. A large part of the meeting was dedicated to understanding commonalities and synergies of the two projects and identifying areas and mechanisms for harmonizing how they operate. Country ownership and sustainability was an overarching theme of the summit, and one of the key concepts of the U.S. Government vision, which focuses on leadership as a critical component for the projects' success.

The summit also included a Tech Fair that showcased information and communications technologies being developed and used by staff across the USAID | DELIVER PROJECT.

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

## **Core-Funded Activities**

### **Pilot innovative approaches to malaria product distribution and data management at the community level, in collaboration with TO4**

This activity focused on designing a pilot system for resupplying community health workers (APEs) in Mozambique, and for managing the flow of necessary data to and from that level. Job aids and training materials have been developed, and the APEs have been trained on the new approach. Once a month, until May 2013, VillageReach will collect performance data using a new monitoring report form. TO Malaria will continue to support in-country implementation of the project, and will support the endline assessment.

To date, the activity has provided visibility into APE stock levels and consumption, by product, to both the provinces and district-level staff who directly oversee the APE program; as well as national partners. The activity has also shown improvement among APEs on proper storage practices and completion of logistics reports. These topics were covered in the APE logistics training. The final assessment is expected to be ready by July.

### **Managing LLIN packaging—procurement considerations**

With increased attention being directed to LLIN packaging and LLINs at the end of life, the project is detailing packaging options and procurement implications. Initial investigation began with an examination of the benefits and constraints to using either individual packaging or bundling LLINs only for bailing materials, which would probably reduce the costs incurred by additional packaging and eliminate much of the waste. To this end, the project consulted with freight forwarders and manufacturers to investigate the implications on both the international and local transport of LLINs that are packaged in bulk, instead of individually sealed bags. The project has also made a presentation to the Emerging Issues Working Group of the Alliance for Malaria Prevention (AMP) on its findings, and we continue to participate in AMP-facilitated global discussions on LLIN packaging.

### **Support the USAID supply chain management course on supply chain management**

The project regularly provides new USAID professionals with introductory week-long training in supply chain management. TO7 planned to continue to support this activity during the reporting period; however, USAID did not bring in new classes of new staff as planned, so the course was canceled. It will not be held until a new class is brought on, and at the direction of CSL.

### **Malaria in pregnancy**

In contrast to overall increases in ACT availability and treatment, the proper use of SP to prevent malaria during pregnancy (two doses after the first trimester<sup>2</sup>) has largely stagnated in sub-Saharan Africa. Why rates of SP uptake have not comparably improved is an area of increasing concern. Questions remain as to whether this is an issue of SP availability at facilities, or if it is an issue of

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<sup>2</sup> WHO recently updated its guidance on IPTp-SP. It now recommends treatment be provided at every antenatal visit. WHO recommends a schedule of four antenatal visits.

access to SP, with women not returning for or receiving from their provider a second dose of SP for reasons other than availability.

Increasingly clear is the dearth of knowledge and data currently available on SP availability, use, and access. To address these knowledge and data gaps, the project provided a matrix of currently available SP commodity availability data and knowledge, covering PMI-supported countries and answering fundamental questions on available information and country policies and status. The matrix findings were presented to all PMI country teams at the 2013 PMI retreat in Tanzania.

### **Seasonality and calculating resupply: country applications**

With a decline in malaria cases over the past decade and availability of anti-malarial commodities at the facility level included in the Essential Medicines Logistics Improvement Programme (EMLIP) approaching 90 percent<sup>3</sup>, Zambia has made significant progress in addressing the malaria epidemic. The roll out of EMLIP has increased visibility of data on stock availability at the facility level and now provides the opportunity for more rigorous analysis of how to best resupply health facilities. Objectives for this analysis are two-fold: (1) To determine whether using alternate calculations for resupply, based on seasonality patterns, results in fewer stockouts at the facility level; and (2) to provide lessons learned/implications for Zambia, as well as other countries' inventory control systems.

During this reporting period, TO7 staff, in close collaboration with the Zambia field office staff, engaged in the data collection and cleaning process of two years of quantitative EMLIP data, as well as gathered important contextual information for data interpretation and analysis. Two years of data showed clear patterns in increased consumption during the rainy season. Using mapping techniques, the team also worked to identify seasonality patterns across time and space, focusing on differences in seasonality consumption across groups of facilities and considering other factors that could impact consumption patterns. A senior academic researcher was also recruited to lead the research design and seasonality modeling process. Next steps include further spatial-temporal analysis and identifying and comparing approaches for commodity resupply.

## **Country Highlights**

### **Angola**

In mid-December, project staff traveled to Angola to facilitate the arrival to and quick release from customs, as well as the provincial distribution of 1,915,080 ACT treatments and 900,000 RDTs. One week after their arrival in Luanda, their subsequent delivery to provincial-level warehouses in all 18 provinces was completed. In January, the project delivered 125 malaria microscopy kits to destinations in 18 provinces.

### **Benin**

The project provided short-term technical assistance to facilitate the distribution of 510,000 LLINs to all provincial MOH departments, health zones, and health facilities across Benin.

### **Burkina Faso**

In October 2012, the project identified a shortage of RDTs in districts starting in November 2012. The project was able to deliver 2,000,000 RDTs, with PMI funding, with a lead time of 3.5

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<sup>3</sup> Antimalarial availability is defined as a facility having at least one of the four AL presentations.

months—2 months shorter than the average lead time—in order to resolve the shortage in January 2013.

### **Regional Development Mission Asia (RDMA)**

With the emergence of artemisinin resistance in the Greater Mekong subregion (GMS), it has become increasingly important to provide flexible resources to meet the ever-changing programmatic demands of the region. The USAID | DELIVER PROJECT has recently placed a resident logistics advisor in the region to ensure that PMI can effectively respond to this dynamic situation.

A senior technical advisor visited the region to provide orientation for the resident logistics advisor, meet with partners, and gain a better understanding of the nuances of the programs throughout the region. Contact with partners on the ground is critical to staying abreast of the constantly evolving situation: Burma's political and regulatory environment is changing daily, Cambodia has challenging epidemiology requiring unique treatment options. Laos is experiencing an outbreak and is beginning to look at new preventative interventions to halt the epidemic.

To help address these needs, the advisors evaluated existing and potential procurement gaps across the region. Technical assistance opportunities were also reviewed.

The project has begun providing forecasting assistance to The National Center for Malaria Control (CNM) in Cambodia and will provide follow on training in supply planning. Additional opportunities for technical assistance in Burma and Laos were also evaluated.

As of March 2013, there were procurements underway for four countries in the region: Thailand, Burma, Laos, and Cambodia, for ACTs, RDTs, LLINs, LLIHNS, CQ, PQ, and various pharmaceutical products. As the project grows its presence in the region, procurements and activities will increase.

Currently, using NMCP resources, all 10 regions have collected and dispatched the empty plastic bags to the recycling plant. The project complemented this national effort in the Eastern, Volta, and Ashanti regions.

### **Liberia**

In collaboration with the Supply Chain Management Unit (SCMU), the project facilitated the customization of the Logistics Indicators Assessment Tool, which will be used to assess the overall supply chain of the country, including malaria products. The report is completed and available for viewing. The project then conducted a training with 16 staff from the Ministry of Health and Social Welfare (MOH SW) on how to carry out the survey, which they did in three counties of Liberia. The key areas of weakness identified were the use of the LMIS tools, sustained availability of

### **Burundi**

The project facilitated the development of the Harmonized Distribution Strategy for LLINs, and implemented a pilot in 10 districts for routine distribution of LLINs, including the development of procedures and tools. The project distributed LLINs to all pilot districts, in response to stock requests that are sent from the districts to the PNLPL.

### **Ghana**

In Ghana, the project has supported LLIN distributions in the Greater Accra region, Eastern region, Volta region, and Central regions. Over 2.4 million LLINs were distributed, which achieved the NMCP's objective of universal coverage and ownership of LLINs in homes through door-to-door distribution and hang-up campaigns. In Eastern and Volta regions, the project and partners have supported continuous distribution of LLINs through schools and antenatal and child welfare clinics. Over 200,000 of the LLINs distributed were given directly to high-risk populations through continuous distribution.

The project supported the NMCP to complete the collection and disposal of 12 million empty LLIN plastic bags, resulting from the hang-up campaigns, by identifying a plastics recycling plant.

commodities, and supportive supervision. The project worked with them to develop specific action plans to improve the performance of the logistics system.

### Madagascar

In the first half of FY2013, the project managed the distribution of 2,085,671 LLINs to 19 districts in Madagascar. The project sub-contracted PSI to implement the distribution, which began in November 2013. Project staff visited 12 districts and oversaw 81 distribution sites.

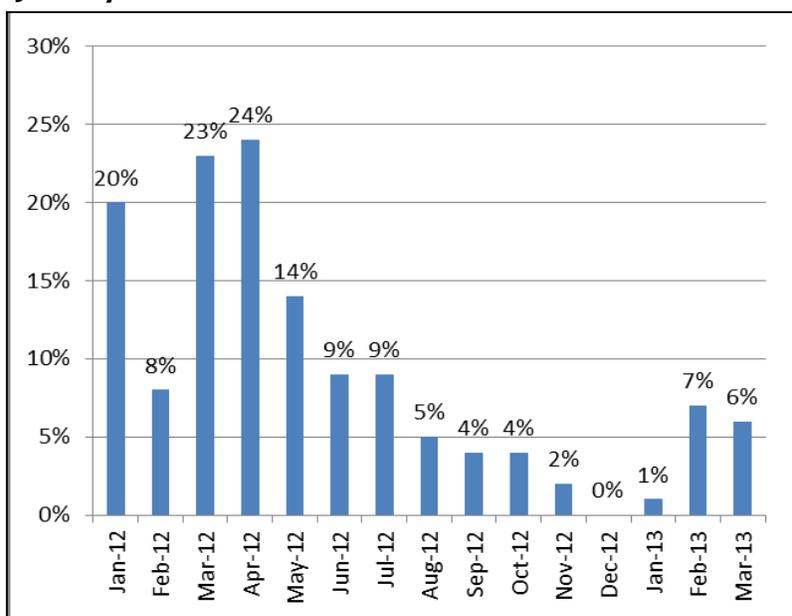
### Malawi

The project manages the parallel supply chain (PSC), which distributes malaria commodities for PMI and the Global Fund; and family planning commodities from USAID and essential medicines kits from UNICEF, with assistance from KFW, Norway, and DFID. The Global Fund, USAID, and other donors fund the PSC. From October 2012 to March 2013, the project distributed 3,456,841 ACTs and 535,900 RDTs. SP is received once a month, with other essential medicines, in donated kits that are distributed once a month directly to each health facility.

### Mozambique

Some 1,500,000 treatments of ACT and 3,000,000 RDTs were kitted by the project and sent to all provinces during November–December 2012, in preparation for the high transmission season. The transportation and distribution of the new combined AL/RDT kits allowed for the availability of both ACTs and RDTs at health facilities. The Ministry of Health (MISAU) is also continuing to distribute the ACTs by *via Classica*, the requisition system used by higher-level facilities and to supplement the kits.

**Figure 6. Malawi—Trend of Facilities Stockout of all AL January 2012–March 2013**



The process of kitting ACTs and RDTs in Mozambique

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## **Nigeria**

In October/November 2012, project staff coordinated an emergency redistribution of 25,000 LLINs to Borno and Anambra states that were affected by severe flooding. The bed nets were intended to offer relief to the households in the two states that were dislocated because of the flood waters.

The project began the pilot of the Direct Delivery and Information Capture (DDIC) system, a vendor managed inventory system. The pilot kicked off in the first half of FY2013 with the first two delivery runs in Ebonyi state. Prior to the first deliveries, project staff conducted a training of team leaders and other personnel on the pilot DDIC standard operating procedures (SOPs) and the LMIS–Auto DRV and Top Up software. Fifteen team leaders (eight from Ebonyi and seven from Bauchi), State Central Medical Store (CMS) pharmacists from both states, the supply manager and a driver from GHLL-L (the selected transportation subcontractor), and project staff were trained. The first delivery run commenced on January 28, 2013, to 63 HFs in Ebonyi state; all four presentations of AL and RDTs were delivered. The second delivery run commenced on March 11 and was completed on March 28. In total, 107 facilities received AL and RDTs. The third run is scheduled to begin May 6 and is expected to be completed by June 10, with delivery to all 200 health facilities in Ebonyi.



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The project has supported the Malaria Action Project for States (MAPS) and Targeted States High Impact Project (T/SHIP) by providing last mile distribution services to PMI-supported health facilities in seven of the states supported by either project. On average, PMI supports four health facilities within each local government area (LGA); each LGA contains approximately 200,000 citizens. In the October 2012–March 2013, the project conducted 21 last mile distribution activities, totaling 1,660 distinct facility drops. Prior to being delivered to the facility level for consumption, the project warehoused these 83,402 ACTs and 26,687 RDTs at the central level and transported them to the state CMSs of the states where they were to be distributed.

## **Rwanda**

As part of systems strengthening, the government of Rwanda has decided to implement an electronic logistics management information system (e-LMIS) nationwide. To review and validate the e-LMIS functional requirements and identify issues that require further effort, the project organized a requirements validation workshop from October 1–5, 2012. The workshop included a review of the current processes and the related requirements for the new desired features. This will ensure the appropriate development/configuration of new processes, verification of the current system configuration status, and a clear understanding of the objectives and benefits of the e-LMIS and its intended use. In February 2013, the project conducted an eLMIS system prototype review session with major stakeholders and system users, which gave them an opportunity to review system functionalities, as described in the requirements specification and previous requirements validation sessions. It is anticipated that once functional, the system will improve the analysis of malaria commodity data for decisionmaking more specifically in commodity forecasting.

## **Tanzania**

Through the Last Mile Project, led by Accenture Development Partnerships (ADP), network optimization strategies were used to model and test the direct delivery of health products to health facilities in the Coast region. The success of this pilot fueled the medical stores department's (MSD) interest in developing their technical capacity in optimization, and to take the approach to scale, nationally. To support this direct delivery initiative, the project organized and financed a training of six MSD staff on the use of Llamasoft's Transportation Guru route optimization software in January 2013. The goal of the training is to allow MSD to complete this model and roll out direct delivery to the remaining 11 regions (out of 30) that are still using an indirect delivery system. Using transportation guru, the project is helping MSD build internal capacity with a wide range of analysis techniques, enabling users to identify optimal delivery center-to-customer assignments, determine the ideal mode mix, create optimal multi-stop delivery or pick-up routes, determine the best utilization of assets, or evaluate driver work schedules. Currently, the project is working through the contractual processes to supply MSD with two, year-long software licenses; we are leveraging technical resources to provide MSD with continuous modeling and analysis support.

## **Zambia**

In collaboration with the Government of the Republic of Zambia (GRZ) and Medical Stores Limited (MSL), the project continues to roll out the EMLIP for essential medicines, including anti-malarial commodities used to treat of uncomplicated/complicated malaria and to prevent malaria in pregnancy; and RDTs, across the country. During the past six months, the EMLIP was rolled out to three districts, bringing the total number of districts trained in EMLIP to 27 out of 72 total districts. A total of 104 health staff were trained, bringing the total number of health staff trained in EMLIP to 1,814. At the request of the MOH, the project halted the roll-out of EMLIP until sufficient quantities of the EMLIP products arrive in Zambia.

## **Zimbabwe**

The project provides ongoing technical and operational support to the Zimbabwe Informed Push/Primary Health Care Packages (ZIP/PHCP) distribution system, which includes malaria commodities. Support includes providing LMIS forms, hardware and software, delivery trucks, monitoring vehicles, and driver support. ZIP/PHCP teams conducted deliveries of malaria, TB, and selected essential medicines and medical supplies to health facilities in every province in the country in December 2012 and in January and March 2013.

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

## **Core-Funded Activities**

### **End-Use Verification**

The End-Use verification (EUV) activity is a routine monitoring survey implemented by TO7 in PMI-focus countries with a project office. The activity obtains valuable information about the functioning of the malaria supply chain and the diagnosis and treatment of malaria, by way of site visits to public health facilities, especially those at the lower levels of the supply chain. Site visits are typically done once a quarter, conducted by teams comprised of staff from the project, MOH, and other in-country partners. Data are analyzed and shared with the USAID Mission,

USAID/Washington, the MOH and other in-country partners using a short, graphical report of 10 key indicators. Core funding supports the establishment, country introduction, and monitoring of the EUV. Field support covers the routine data collection.

During the reporting period, routine data collection for the EUV continued in Ghana, Malawi, Mozambique, Tanzania, Zambia, and Zimbabwe. In addition, the activity was initiated in Nigeria, supported by an STTA visit from TO7 staff from headquarters. Arrangements were made for the biannual ongoing implementation of the EUV in Nigeria, partnering with eight state Ministries of Health, the NMCP, and in close collaboration with two other USAID-funded projects—the Malaria Action Program for States (MAPS) and the Targeted States High Impact Project (TSHIP).

### **Data Dashboards**

Building on and complementing the project's data analysis and synthesis activities (including EUV and PPMRm data analysis, as well as LMIS country profiles), the project will emphasize longitudinal analysis presented in a concise, user-friendly, largely graphical data dashboard. This reporting period, the project constructed a dashboard template to be used and updated for all countries; and, also, to provide an opportunity to triangulate and analyze each country's various data sources. The goal is to provide a more complete, nuanced profile of commodity availability and to provide a way to triangulate and improve the quality of various data sources.

### **Supporting PMI's impact evaluation**

In FY2012, the project contributed data and analysis to support the overall PMI impact evaluation. The project remains positioned to provide additional support, as requested, although no requests were received during the reporting period.

### **PPMRm**

The PPMRm is a complementary data collection activity to EUV, providing quarterly visibility of stock levels of ACTs, SP, and RDTs at the central level of the supply chain. The report covers all central level stock, regardless of the source of supply (e.g., Global Fund, PMI). Data are reported from 20 countries and Nigeria states, including from nine countries by project staff, as well as nine countries from staff on the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) project. Two countries report though USAID bilateral projects.

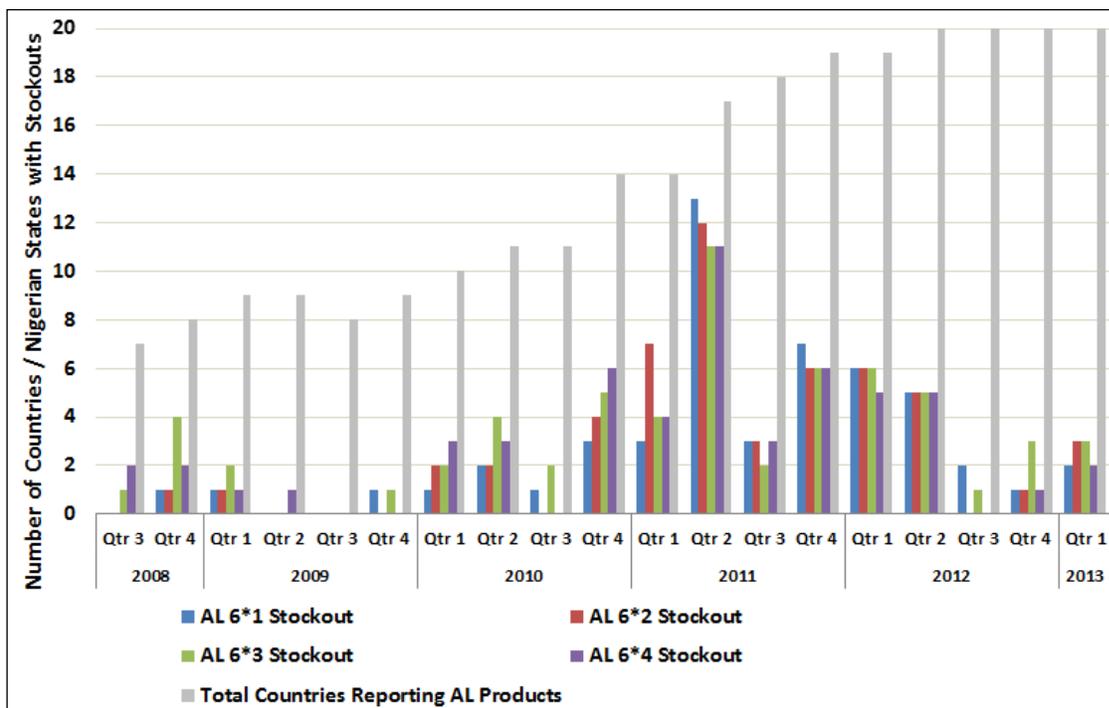
During the first half of FY2013, PMI used the PPMRm to work with other donors and host-country governments to address stockout situations in a number of countries by providing critical emergency shipments, and to highlight potential supply problems and address them before large-scale stockouts came to fruition.

In addition, this reporting period, staff are engaged with a development team in a major upgrade to the PPMRm. The number of products and number of countries reporting has been consistently expanding, significantly increasing the workload for managing the data and running PPMRm reports. The new PPMRm system was modeled after the successful PPMR system for reproductive health commodities, with features; such as more automated entry, making data entry easy whether online or offline; linking forms with the database; previously reported data can be seen in a variety of formats; and data available on-demand in multiple formats, including Excel, PDF, and online. Detailed user requirements for the new system were developed in close collaboration with USAID and WHO, and the development of Phase One requirements is in process. It is anticipated that the

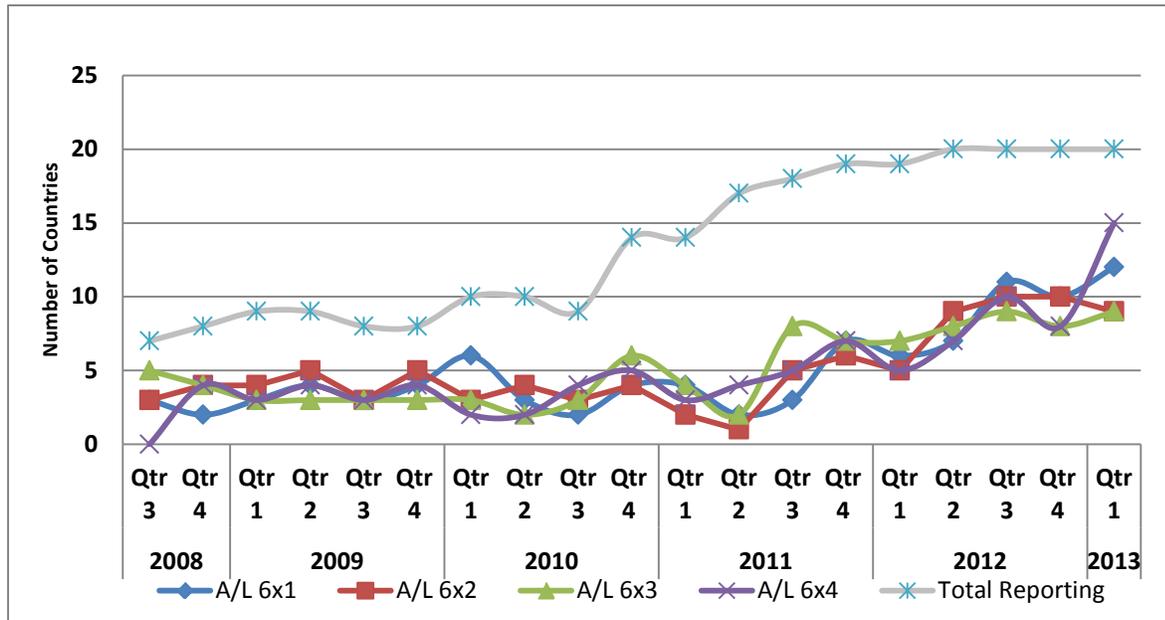
WHO ACT Supply Task Force will use this system and; eventually, the WHO ACT Task Force, which tracks progress in 10 high-burden countries.

Figures 7 and 8 show central-level stockouts of AL and FDC AS/AQ, by calendar year, as reported through the PPMRm. For AL, the percentage of countries (and Nigerian states) stocked out reached a high between April–June 2011, with significantly reduced central-level stockouts reported for July 2012–March 2013. Figures 9 and 10 show the number of countries with more than three months of stock at the central level for AL and FDC AS/AQ, by *calendar year*, as reported through the PPMRm. These figures illustrate a general upward trend because of the low point of April–June 2011 for AL. With the exception of a dip during the 4th quarter 2012, AS/AQ has also experienced a general increase overall since 2011.

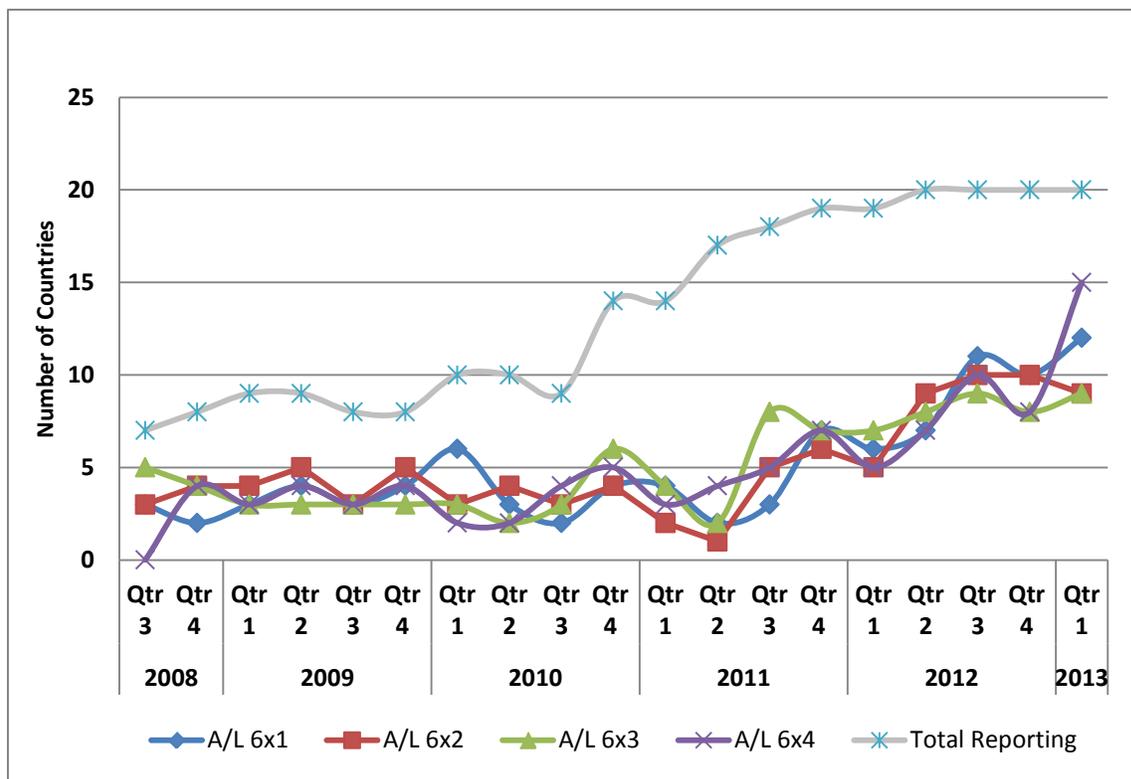
**Figure 7. Total Number of Countries/Nigerian States Reporting Stockouts of AL at the Central Level (source: PPMRm)**



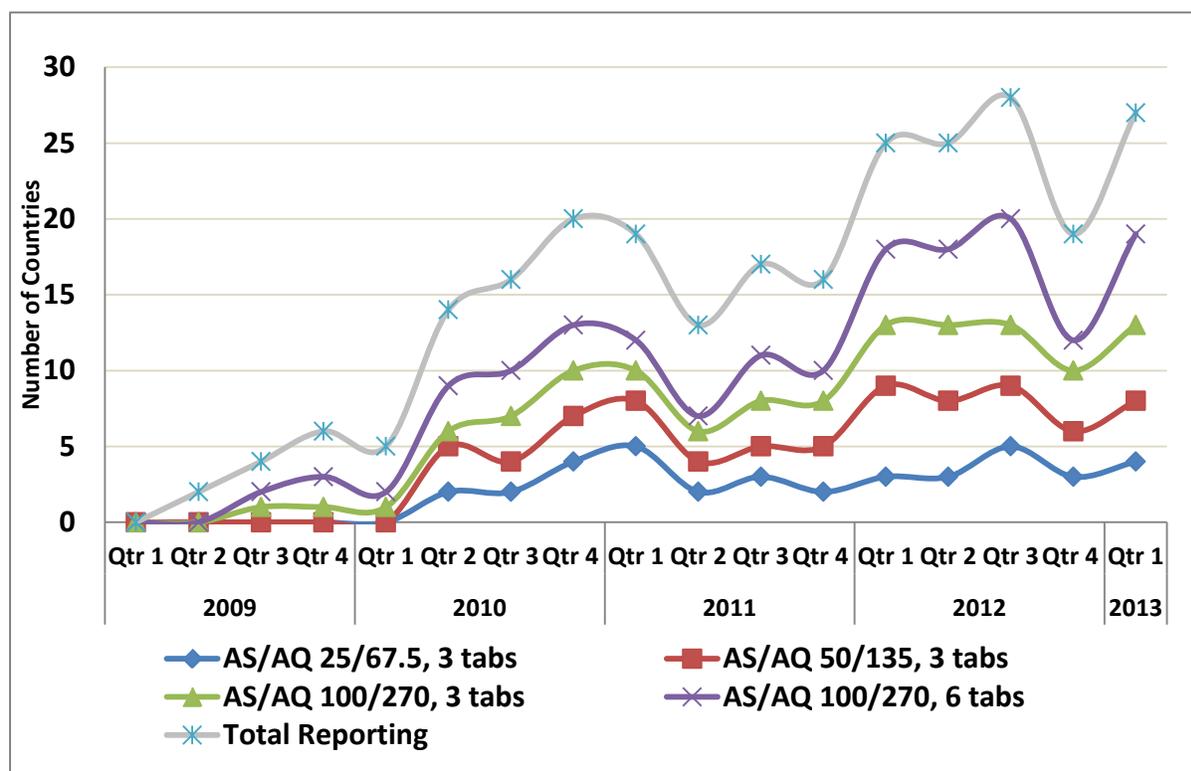
**Figure 8. Total Number of Countries Reporting Stockouts of AS/AQ at the Central Level (source: PPMRm)**



**Figure 9. Total Number of Countries/Nigerian States with More Than 3 Months of AL at the Central Level (source: PPMRm)**



**Figure 10. Total Number of Countries with More Than 3 Months of FDC AS/AQ at the Central Level (source: PPMRm)**



## Country Highlights

### Burkina Faso

The project, in collaboration with the NMCP, analyzed the quarterly data from the health districts using the malaria database. Data analyses show the following:

- The reporting rate has continued to increase, over time, up to 99 percent in the October–December 2012 quarter.
- RDTs were available at 77 percent of facilities during October–December 2012. Substantial facility level stockouts were experienced in the system in November and December.
- Seventy-four percent of health facilities had stock available for all four presentations of AS/AQ in October–December 2012. Gaps in availability may likely be due to overall low levels of stock of AS/AQ in the system during the quarter, particularly for FDC AS/AQ 50 mg/135 mg.

In November 2012, the project provided financial support to review the malaria database and to align it to the recent changes made to the health facility monthly reporting form to allow for the collection of new malaria indicators, such as number of ACTs distributed to the Community Health Workers (CHWs), quantity of ACTs ordered by the CHWs, quantity of ACTs received by the CHWs, quantity of ACTs distributed to the patients by CHWs, and number of days out of stock of ACTs at the community level. The project, in collaboration with NMCP and the consultant who revised the malaria database, trained 73 regional and district pharmacists, 74 regional and district data managers, and 12 hospital data managers on the updated malaria database.

## Liberia

In October, the Liberia team was able to advocate to NMCP to begin implementing a community-based logistics system, similar to the system previously implemented for contraceptives. This system will improve access to data for hard-to-reach communities in the country.

## Madagascar

The project contracted with Health Network International (HNI), a private company that specializes in submitting data through SMS, to develop a tool to help increase the speed and efficiency of data collection, as part of the LLIN distribution campaign. Data included (1) household census, (2) essential data for micro-planning, (3) number of LLINs received at distribution sites, (4) number of LLINs distributed and remaining stock, and, (5) hang-up visit data.

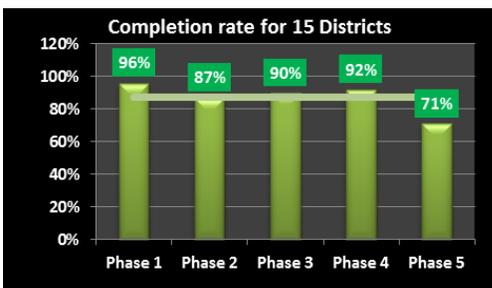
At the end of the reporting period, 15 of the 19 targeted districts had achieved a combined reporting rate of 85.81 percent. The rate was a

little low due to delays in the reporting for phase 5. Challenges included network coverage, motivating data senders, and insufficient training of data senders. In the end, the average completion rate for all phases of the activity was 78 percent.

## Early Warning System in Ghana

With numerous partners, including the National AIDS Control Program (NACP) and the NMCP, the USAID | DELIVER PROJECT expanded the Early Warning System (EWS) between October 2012 and March 2013. The EWS uses text messages to report product availability for tracer products. During the EWS pilot, between 79% and 92% of the 201 facilities participating reported on 27 tracer products weekly, providing significantly greater insight into facility-level stock status than the current paper-based system. Based on the lessons learned from implementing the EWS pilot, the project is working with GHS stakeholders to expand coverage of the EWS to include all antiretroviral therapy (ART) centers in-country and to add tracer malaria commodities. Consequently, the project has commenced the training of commodity managers in the selected facilities to enable them use the EWS. A total of 61 GHS staff from the Volta region, 61 GHS staff (commodity managers) from ART sites in Greater Accra, 105 health commodity managers from 33 selected facilities in the Western and Eastern regions, 23 commodity managers from facilities in Brong Ahafo region, 30 facilities in the Ashanti region, and 10 commodity managers in the Central Medical Stores have been trained on the EWS. This has improved the visibility of stock status for tracer HIV and malaria commodities at the facility level, regional medical stores (RMS), and the Central Medical Stores (CMS), in real time. The project, in collaboration with the Focus Regions Health Project (FRHP), disseminated the findings of the assessment of the EWS pilot at the senior managers' meeting of the GHS; they agreed on the need to scale up and develop a broad policy on mHealth for the GHS.

**Figure 11. Completion Rate for 15 Districts**



**Figure 12. Completion Rate for All Districts**

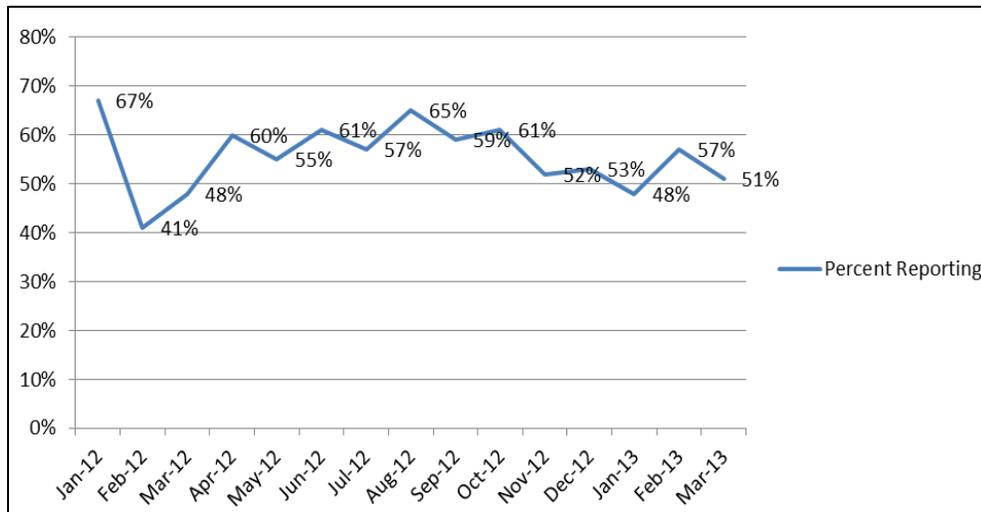


## Malawi

Public-sector facilities submit LMIS reports on medicines in the PSC once a month. Supply Chain Manager is the tool used at the central level for data aggregation and analysis; it is supported by the project. Since January 2012, the monthly LMIS reporting rate has been lower than 70 percent. Reporting rates from January 2012–March 2013 is shown in figure 13. In addition, the quality of data is sometimes poor and the project verifies the data with the reporting districts, when possible. The NMCP will often follow up with districts that have not reported.

The project is supporting the MOH/HTSS in the evaluation of the current LMIS system and discussion of options for modification and improvement of data quality. The assessment was conducted in February. The next step will be requirements gathering for the redesign. The integrated quarterly supportive supervision is also targeting the LMIS improvement by identifying immediate constraints and giving feedback at the facility level.

**Figure 13. Trend of LMIS Reporting Rate January 2012–March 2013**

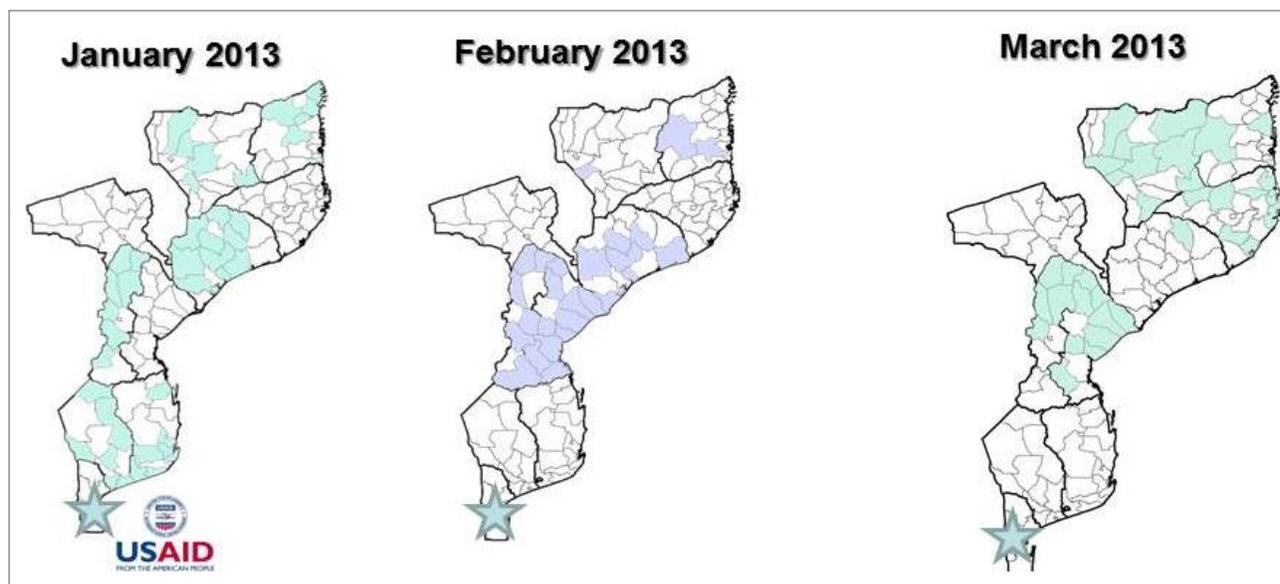


## Mozambique

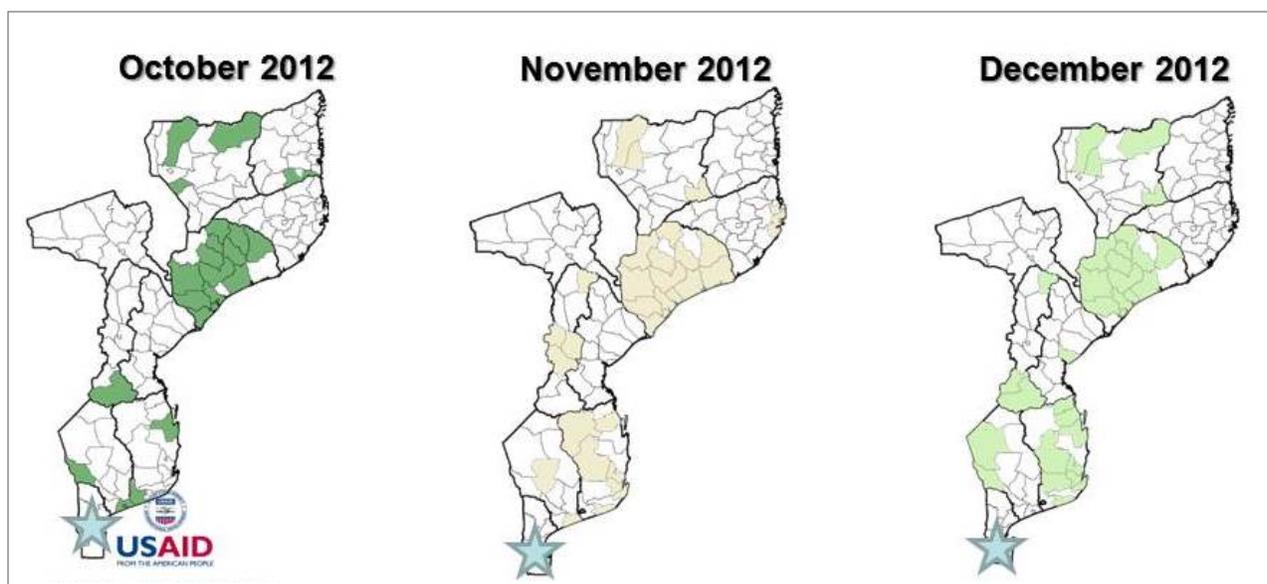
The project monitors district reporting rates on ACT consumption and stock on hand. For the past six months, district reporting rates have averaged 26 percent (see figures 14 and 15). The different colors in the figures represent the progressive number of districts reporting out.

To improve the reporting rate, the project introduced new forms during the training that took place in 2012. Since then, a specific module for the collection of this data has been included in a new version of the LMIS-SIMAM version 2.0, which is about to be rolled out nationwide. The project also printed the forms in booklets for distribution to all SDPs, instead of photocopies in the ACT/RDT kits.

**Figure 14. District Reporting Rates for ACTs, October–November 2012**



**Figure 15. District Reporting Rates for ACTs, January–March 2013**



### **Rwanda**

The project regularly collects malaria LMIS reports. The average reporting rates from August 2012 to January 2013 was 95.6 percent for health facilities and 100 percent for district pharmacies. Prior to this reporting period, the reporting rates were below 95 percent for health facilities and 87 percent for district pharmacies. The reports are computed, analyzed, and shared with MOPDD for decisionmaking.

The project conducted its second quarterly feedback in November, monitoring, training, and planning meeting for 30 district pharmacies. The objective of the meeting was to identify the cause of no reporting for some facilities, delays in reports' submission and data quality, and to agree on

practical solutions to ensure that health facilities are providing timely LMIS reports and accurate data for decisionmaking. Representatives from all district pharmacies and the LMO attended the workshop. During the meeting, participants developed and agreed on a template that the heads of district pharmacies will use to monitor the reporting timelines and reporting rate, and to check data quality once a month. More than 80 percent of the district pharmacies are using the tool to monitor the indicators above. Moreover, there have been significant improvements on reporting from health facilities to district pharmacies.

### **Tanzania**

On the mainland, the project continues to implement the ILS, and the ILSGateway reporting system. The ILSGateway, an SMS-based facility-level stock status data collection tool, was rolled out to half the 5,000 health facilities in Tanzania. The ILSGateway provides real-time stock status information on malaria commodities for decisionmakers throughout the supply chain. Results from the ILSGateway evaluation in November 2011 indicated that 97 percent of facilities improved their on-time submission rates for stock reports. A further 93 percent improved their stock counting exercises because of the routine mobile alerts they received. Importantly, 45 percent of facilities reported improved product availability, indicating the overall positive contribution the ILSGateway has made toward improving the medicine supply system in Tanzania.

### **Zambia/Tanzania**

In Zambia and Tanzania, the project supports the MOH to achieve a shared vision for an eLMIS. In October 2012, a kickoff meeting was held in Lusaka to mark the beginning of the development phase. The deputy ministers of health from both Tanzania and Zambia, as well as the development team from ThoughtWorks India, USAID Tanzania, Zambia, and DRC were in attendance. In March 2013, version 0.9 of the eLMIS was completed. This version could not be deployed in the field due to some of the missing functionality and, as a result, it was agreed that the project, in collaboration with SCMS, would assist with the development effort so as to fill the gap between version 0.9 and the minimum viable product (MVP) version 1.0. The current timeline for deployment of the MVP is September 2013. The country teams are working in tandem to develop a facility-based version of the eLMIS, which shall be integrated with the central-level module to form one system.

## **Strengthen the Accountability of In-Country Supply Chains That Manage Malaria Products**

### **Country Highlights**

#### **Burundi**

Routine supervision visits are made to both pilot districts and non-pilot districts (for LLIN continuous distribution) to verify the proper management of LLINs and the use of management tools in health centers, as well as to verify that the data reported from the National Bureau of Statistics is consistent with reports from the districts and health centers.

#### **Liberia**

In February, the project, with the MOH, SCMU, NMCP, FHD, and CHTs, facilitated a monitoring, supervision, and feedback exercise in two counties. The objective was to use LMIS data to assess system performance. The teams conducted physical inventories of tracer products and updated commodities bin cards at county depots. They also defined both electronic and manual filing

systems. At most health facilities, the teams also conducted inspections of the stores, did physical counts, and reviewed warehouse and transaction records.

### **Madagascar**

To address a lack of coordination and supply chain management skills among partners, the project was tasked with leading the National Committee of Acquisition, Supply and Stock Management (GAS Committee). As the lead facilitator for this group, the project has assisted with improving the accuracy of stock status data and, in turn, the ability of partners to place timely orders for sufficient numbers of commodities. These improved systems and skills have led to better availability of malaria products, especially at the community level.

Specifically, the project has assisted the GAS Committee develop tools to better track stock on hand, consumption, orders, and deliveries, which has greatly improved the coordination of supply chain management among the partners. This careful coordination has brought the group closer to their goal of strengthening the overall management of malaria commodities for the country, particularly procurement planning. With these new tools, the committee has been able to highlight unmet needs and has successfully forecasted ACT, RTD, and SP needs for the next three years.

### **Malawi**

The project has implemented quarterly monitoring visits, particularly to districts which were reporting difficulty with the Supply Chain Manager software; we visited 168 SDPs this year. During these visits, project staff offered solutions to various problems with logistics practices and Supply Chain Manager (SCMgr). Regular supervision of SDPs has allowed for continuous monitoring and targeted support for improvement.

### **Nigeria**

The project conducted assessments of five of the seven states where PMI malaria commodities are stored and distributed, including Cross River, Oyo, Kogi, Benue, and Nasarawa. The assessments enable the project to review the storage conditions and warehouse management of the state CMS and provide an opportunity to advise the state governments or directly introduce needed interventions. In Cross River state, the state government is funding the re-roofing of the store, with an estimated completion date sometime in the third quarter of FY2013. The materials being used in the roofing are of poor quality and the project is looking into replacing the sheet metal with a higher grade steel. In Oyo state, it was discovered that the fence around the Hungarian store, where PMI LLINs are held, had been pulled down by the state government in order to expand the road. A formal report has been submitted by the store officer; the state ministry of health has deployed private security agents to bridge the security gap around the warehouse. The LLINs were found in good condition in the warehouse.

### **Rwanda**

In collaboration with the MOH and SCMS, the project conducted the 2012 annual physical inventory of public health commodities from December 17–21, 2012. There were 90 data collectors—55 pharmacy students who benefited from the pre-service training in the Supply Chain Management Course from the National University of Rwanda; 10 teachers from six nursing schools, who attended the nursing school pre-service training TOT; and 25 laboratory technician. They visited 574 health facilities: 30 district pharmacies, 41 district hospitals, and 503 SDPs.

## **Zambia**

With MSL staff, project staff conduct monthly physical inventories at the MSL. Through these routine counts, stock on hand is compared to quantities recorded on stock cards and in the warehouse management information system, so that any discrepancies can be reconciled.

Staff also conduct regular monitoring and supervision activities in both EMLIP and non-EMLIP districts. These visits have helped contribute to a reduction in the number of clinically diagnosed malaria cases due to increase in RDT usage and training of health staff in malaria case management, along with reductions in malaria stockouts at the SDP level.

## **Bridge the Gap between NMCPs and Supply Chain Operators (e.g., Central Medical Stores) to Improve Core Supply Chain Functions**

### **Country Highlights**

#### **Burkina Faso**

The project assisted the malaria commodity quantification committee (comprising NMCP, the Pharmacy Department, and CAMEG) to analyze the ACT stock situation at the central level and to review the supply plan for the rest of 2012 and 2013. In collaboration with the NMCP, the project held a workshop for the malaria commodity quantification for 2014-2015.

The project has assisted the ACT committee for better coordination of donor and government funding to secure the availability of malaria commodities. The project worked with the malaria commodities quantification committee to prepare presentations on malaria commodities logistics issues: commodities needs and gap analysis, stock situation, and proposed recommendations. Through this coordination, the project also assisted the ACT committee to use the entire budget amount allocated by the Government of Burkina for malaria commodity procurement for 2013 because it has been difficult to do so in the past. This year, the project advised the ACT committee to place orders for malaria commodities totaling the entire amount allocated for 2013 as soon as the budget amount was approved by the Ministry of Health (MOH) Financial Department. In January 2013, the NMCP ordered 2 million RDTs and 145,000 severe malaria kits for children, plus 15,000 kits for pregnant women to be kitted locally, totaling the \$4.5 million allocated by the government for 2013.

#### **Burundi**

The project continues to routinely participate in the Medicine Working Group Meeting (*Groupe Thematique Medicament*), which is attended by a range of stakeholders. Supply chain challenges are discussed, along with LMIS development.

#### **Ghana**

The project has completed and submitted to the MOH the final draft of the Ghana Supply Chain Master Plan (SCMP). The document includes the Terms of Reference (TOR) for the Interim Management Team, the Cabinet Memo, Implementation Plan, and M&E Plan for the strategy.

The project continued to provide technical and logistical support to the technical working group of the MOH for the implementation of the 5-year SCMP. The minister of health has signed the 5-year SCMP document and approved the cabinet memo for onward submission to cabinet. As part of the advocacy process to obtain stakeholders buy-in for the SCMP, the project assisted the MOH to

make a presentation on the SCMP to a meeting of the Regional Directors of Health Services of the GHS and to a meeting of Health Supply Chain Practitioners in Ghana (HESSPAG). These forums provided avenues for the MOH to explain the SCMP to key stakeholders and correct misconceptions about the plan. Further advocacy and information sharing was conducted with the Global Fund Country Coordinating Mechanism (CCM); the project supported the MOH in presenting the SCMP to members of the CCM, during their quarterly meeting. The project has also completed and submitted a micro plan and budget to the MOH for using the \$2 million provided by the Global Fund for implementing the SCMP.

### **Liberia**

The project provided assistance in planning for the annual quantification exercise planned for the 3rd quarter of FY2013. This included supporting NMCP and the SCMU in collecting data from the last 12 months from clinics, health centers, hospitals, and county depots in 11 of the 15 counties. In addition, the project assisted the NMCP Commodity Security Team to facilitate meetings to discuss the quantification, malaria commodities stock status, and the community-based distribution system implementation.

### **Mozambique**

Project staff participated in the Medicines Working Group (GTM) to discuss the current stock situation of malaria commodities, in particular in relation to the transitioning from injectable quinine to injectable artesunate for severe malaria. As the program will continue to need small amounts of injectable quinine for women in their first trimester of pregnancy, project staff worked with staff from the project's field office in Harare, Zimbabwe, to transfer 200,000 vials of injectable quinine from excess stock in that country to replace soon-to-expire stocks in Mozambique. These vials will be received prior to the expiry of the current stock in Mozambique.

### **Nigeria**

In October 2012, following the National Quantification Training of Trainers that took place in Calabar in September, a state-specific quantification exercise was conducted for all the geo-political regions of the country. Four representatives from each state attended the meeting. Source data from each state and consumption data, where applicable, were used to build assumptions and quantify for ACT's needs of the states in FY2013. Thirty-six states, including the Federal Capital Territory (FCT), participated in the exercise.

Project staff provided technical assistance for the North-East zone at their state specific quantification exercise and gap analysis. The quantification and gap analysis exercise lasted from October 15–19, 2012. The quantification and gap analysis for each of the six states in the zone were concluded and reports compiled for the supply planning meeting in Abuja.

At the conclusion of the state-level quantification for malaria commodities meetings in October, the project completed the states' supply plans in November. Technical staff completed the finalization of the gap analysis of malaria commodities for states during December 2012. Supply plans for all states, and a report of the activities, were also completed, in conjunction with the quantification team.

### **Tanzania**

In November 2012, the Tanzania MOH and the USAID Tanzania requested the project (in collaboration with SCMS) undertake a strategic review of the national health commodity supply

chain systems, with a special focus on MSD. The focus of this assessment was to identify systemic strengths and weakness within MSD's operation, and at other levels of the national healthcare system, to identify practical and implementable interventions that address found gaps and improve efficiencies; this would ensure the increased availability of commodities within Tanzania's public health system. An assessment team of four senior advisors and project managers traveled to Tanzania to conduct the assessment February 18–March 15. Findings and recommendations were given to a large group of stakeholders at a half day workshop on March 14; the Deputy Minister of Health and USAID also received separate debriefings. Findings and recommendations were proposed in the following thematic areas: financing, human resources, data visibility, accountability, leadership and governance, operational processes, and the private sector.

### **Zimbabwe**

The project, in collaboration with SCMS, assisted the MOH CW to conduct the national quantification. The exercise generated a 24-month forecast and an 18-month supply plan for malaria products, as well as other selected essential medicines and medical supplies. The supply plans will inform orders to be placed by the MOH CW and all partners, including PMI and GFATM. Recommendations were also made to address funding gaps, improve forecast accuracy, and ensure commodity security.

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

### **Country Highlights**

#### **Ghana**

Following the success of the LLIN continuous distribution, the project collaborated with the USAID's NetWorks Project and the Focus Regions Health Project to train 564 health workers (district-level supervisors, nurses, disease control officers) in all districts of the Western region and 679 health personnel (district level supervisors, nurses, disease control officers) in all districts of the Central region; to support the future implementation of continuous distribution of LLINs through antenatal and child welfare clinics. The project's efforts focused on training the health personnel in logistics management to ensure a continuous availability of the LLINs for the program.

#### **Liberia**

The project assisted the NMCP to create a supply chain management team (SCM team) to support the 10-year Supply Chain Management Plan. Project staff met weekly with the SCM team to build their capacity in reviewing and revising LMIS malaria data and measuring selected supply chain performance indicators. This enabled the team to identify and act on issues that are affecting the performance of the malaria supply chain.

#### **Nigeria**

Project staff coordinated the roll out of the MCLS in Oyo and Cross River states. In total, 1,019 health personnel from 560 HFs were trained in malaria commodities management and data reporting.

## Rwanda

After introducing the logistics management pre-service training in the pharmacy department of the National University of Rwanda (NUR), the project, in collaboration with the NUR, provided orientation on supply chain management to 17 teachers from six schools of nursing/KHI faculty in October–November 2012. At the end of the TOT, participants developed an outline of SCM sessions to be integrated into the nursing curriculum. The primary goal of this initiative is to strengthen health logistics systems in Rwanda through a sustainable pre-service training program by building capacity in health commodity logistics management among health personnel in Rwanda. This approach ensures that health commodity logistics management is adequately included in the training curricula of health professional schools and for Rwandan professors and instructors in these schools to be fully capable of teaching health logistics.

## Tanzania

In collaboration with the MOH Zanzibar, the project continued with the roll out training of Zanzibar Integrated Logistics System (ZILS) for health facilities from Pemba and Unguja Islands for health-facility personnel, with the goal of improving commodity availability. A total of 105 of 140 facilities were trained in the first two quarters of FY2013. The training is spread over several months and the plan is to complete the trainings by the end of 2013.

**Table 3. PMP Indicators for Objective 2, October 1, 2012–March 31, 2013**

Support Area	Operational Area	Indicator	Status
Monitoring of in-country supply chain performance	Providing information about in-country supply chain performance	Facility stockout rate: the % 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 F
		Country stockout rate: the % of countries with a stockout at the central warehouse(s) at the time of reporting	See appendix F
		Functioning LMIS: % of countries where an LMIS routinely collects and reports stock status data (i.e., stock on hand and consumption data) from all service delivery points in the country	<b>5/11 = 45%</b>  For a full list of the countries and further explanation about the LMIS, see appendix F.
Short-term technical assistance (STTA)	Respond to STTA needs as per mission request to strengthen in-country supply chain management for antimalarial commodities	Timely response to ad hoc technical assistance (TA) needs: % of STTA trips per mission's/PMI   Washington ad hoc request conducted on time	<b>Total: 7/7 = 100%</b>

Support Area	Operational Area	Indicator	Status
Long-term technical assistance (LTTA)	In-country supply chain strengthened or improved	Quantity of antimalarial commodities (LLINs, SP tablets, ACT treatments, RDTs) distributed in-country using funds obligated to USAID   DELIVER PROJECT	<p>Angola:</p> <ul style="list-style-type: none"> <li>- 862,150 RDTs</li> <li>- 3,600,000 ACTs</li> </ul> <p>Benin:</p> <ul style="list-style-type: none"> <li>- 499,300 LLINs</li> </ul> <p>Burundi</p> <ul style="list-style-type: none"> <li>- 415,000 LLINs</li> </ul> <p>Burkina Faso: N/A</p> <p>DRC:</p> <ul style="list-style-type: none"> <li>- 4,465,000 ACTs</li> <li>- 3,500,000 RDTs</li> </ul> <p>Ghana:</p> <ul style="list-style-type: none"> <li>- 2,222,000 LLINs</li> </ul> <p>Kenya: N/A</p> <p>Laos:</p> <ul style="list-style-type: none"> <li>- 28,900 LLINs</li> <li>- 6,673 LLINs (hammock)</li> </ul> <p>Liberia: N/A</p> <p>Madagascar:</p> <ul style="list-style-type: none"> <li>- 631,608 ACTs</li> <li>- 560,2990 RDT kits</li> <li>- 1,115,222 gloves</li> <li>- 717 units of sharp container paperboard</li> <li>- 2,085,671 LLINs</li> </ul> <p>Mali:</p> <ul style="list-style-type: none"> <li>- 2,596,770 ACTs</li> <li>- 1,100,000 RDTs</li> <li>- 1,593,000 SP</li> </ul> <p>Malawi:</p> <ul style="list-style-type: none"> <li>- 3,456,841 ACTs</li> <li>- 535,900 RDTs</li> <li>- SP as part of the Essential Medicines Kits.</li> </ul> <p>Mozambique:</p> <ul style="list-style-type: none"> <li>- 1,512,320,ACTs</li> <li>- 3,113,600 RDTs</li> </ul> <p>-Nigeria:</p> <ul style="list-style-type: none"> <li>- 21,005 RDTs,</li> <li>- 51,513 ACTS</li> </ul> <p>Rwanda:</p> <p>500,000 LLINs</p> <p>South Sudan: N/A</p> <p>Tanzania: N/A</p> <p>Uganda: N/A</p>

Support Area	Operational Area	Indicator	Status
			Zimbabwe: (Oct–Dec 2012...Jan–Mar 2013 not yet avail) - 248,940 ACTs - 582,451 RDTs - 173,615 SP - 28,496 quinine tablets - 17,259 quinine ampoules - LLINs
		Percentage of countries receiving field support TA funds reporting on supply chain performance via the End-use verification activity	<b>7/9 = 77%</b> Burkina Faso: No Liberia: N/A Ghana: Yes Madagascar: No Malawi: Yes Mozambique: Yes Nigeria: Yes Rwanda: N/A Tanzania: Yes Zambia : Yes Zimbabwe: Yes  For further explanation, see appendix F.
		Number of individuals trained in the supply chain management of malaria commodities	<b>TOTAL: 7,916</b> Burkina Faso: 0 Ghana: 1,777 Liberia: 144 Madagascar: 11 Malawi: 1616 Mozambique: 0 Nigeria: 1,225 Rwanda: 36 Tanzania: 2,781 Zambia: 326 Zimbabwe: 0
		Percentage of countries with field support TA funds reporting central-level stock levels of select malaria products in quarterly stock monitoring reports (PPMRm)	<b>10/12 = 82%</b> Burkina Faso: yes Ghana: yes Liberia: yes Madagascar***: no Malawi: yes Mozambique: yes Nigeria: yes Regional Development Mission Asia (RDMA): yes

Support Area	Operational Area	Indicator	Status
			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)	<b>TOTAL: 10/11 = 90%</b> Burkina Faso: yes Ghana: no Liberia: yes Madagascar: yes Malawi: yes Mozambique: yes Nigeria: yes Rwanda: yes Tanzania: yes Zambia: yes Zimbabwe: yes
		Available supply plans: % of countries that have developed supply plans for PMI-funded commodities*	<b>TOTAL: 11/11 = 100%</b> Burkina Faso: yes Ghana: yes Liberia: yes Madagascar: yes Malawi: yes Mozambique: yes Nigeria: Yes Rwanda: yes Tanzania: yes Zambia: yes Zimbabwe: yes
		Number of technical reports or tools developed to support malaria supply chain performance	<b>TOTAL: 51</b> Core: 1 Burkina Faso: 20 Ghana: 2 Liberia: 2 Madagascar: 6 Malawi: 4 Mozambique: 2 Nigeria: 1 Rwanda: 1 Tanzania: 5 Zambia: 6 Zimbabwe: 1



# Objective 3: Improve the Global Supply of Malaria Commodities

## Strengthen International Collaboration

### Support to the Roll Back Malaria Procurement and Supply Management Working Group

TO Malaria is an active member of the PSM WG. The Task Order Director is the co-chair for the PSM bottleneck work stream. During the report period, TO7 participated in the PSM WG meeting in Geneva, November 19–21. We presented on the results of a Global Fund bottleneck assessment conducted in DRC and Tanzania. We also chaired a sub-group that focused on LMIS, sharing project experience from several countries. The subgroup recommended key areas to include in the PSM WG workplan, including a broad partner meeting to agree on key elements of LMIS and gather success stories around LMIS implementation, and an LMIS workshop for country delegations. These activities are in the workplan; but, currently, there is insufficient funding to implement them.

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

#### Support to the Interagency ACT Supply Task Force

In September 2011, WHO/GMP established an interagency task force whose mandate is to collect and analyze a holistic set of data to identify countries at risk of ACT shortfalls and to provide recommendations to mitigate the risk. Led by WHO/Global Malaria Program, task force members include PMI, Global Fund (Affordable Medicines Facility–malaria and Voluntary Pooled Procurement), United Nations Children’s Fund (UNICEF), Clinton Health Access Initiative, and ALMA. The task force was formed in response to concerns that peaks in demand might strain the existing production capacity and result in supply shortages at the country level.

Through its members, the task force collects data from countries, manufacturers and funders; they then analyze it, validate it, identify ACT supply shortage risks; and work to mitigate the risks. TO7 provides support in data collection, analysis, and management for the task force.

Task force members met in November to discuss its future mandate and operations. We agreed to move the data collection and analysis to the Situation Room, a WHO initiative focused on the top 10 high-burden countries. TO7 shared the plans for upgrading the PPMRm to a web-based tool. Task force members agreed that, with some modifications, it could also be a platform for task force data collection and analysis. Until the PPMRm upgrades are complete—currently estimated for September 2013—TO7 continues to support the task force in collecting country data for the 10 high-burden countries using the original template and providing the quarterly analysis.

## RDT Procurement Analysis

The task order analyzed its RDT procurement since 2008. The price analysis looked at variations over time, by quantity, by country, and by product, and compared competed and sole-source prices. The main findings were—

- The volume of procurement has almost doubled each year.
- The competed prices were between 30–48 percent lower than sole-source prices.
- Prices lowered for all RDTs, except two brands.
- There was significant variability in prices for the same test, across countries.

Based on this analysis, we are revising our RDT procurement approach to lock in low ceiling prices, while still competing where country protocol allows.

**Table 4. PMP Indicators for Supporting Global Supply and Availability Initiatives**

<b>Operational Area</b>	<b>Indicators</b>	<b>Status</b>
Support global and regional stakeholders/forums of supply chain management technical issues	Number of global and regional malaria initiatives with USAID   DELIVER PROJECT technical participation	3 (ACT task force, AMP meeting, and PSM WG)

\*There were four initiatives during the report period—the Interagency ACT Supply Task Force (weekly calls and a meeting in February), the Nairobi Workshop, the GF PSM bottlenecks mapping, and the PSM Bottleneck Resolution Workshop in Tunis.

# Performance Monitoring

TO7 monitors performance using a set of indicators outlined in the Performance Monitoring Plan (PMP) and detailed in the Quality Assurance Surveillance Plan (QASP) and Environmental Mitigation Monitoring Plan (EMMP). During the reporting period, an annex was added to the EMMP, which covers instances in which the project is involved with LLIN distribution. As part of this process, project offices were asked to complete a form that indicated the responsible parties for ensuring the dissemination of appropriate BCC information during LLIN distribution (see appendix H).

All indicators calculated for this reporting period are included in the relevant sections throughout this document. For additional information, see appendices A–H.

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

Other less formal methods for performance monitoring and management are also in place, such as weekly TO7/USAID meetings and the distribution of an updated Current Actions Table—which outlines the current status of all TO7 procurements. 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 any problems. The project conducts a country-by-country review of all ongoing procurement actions; their status is updated on the Current Actions Table, which is made available every week to all PMI and project managers.



# Implementation Challenges and Solutions

## Long Lead Times for LLINs

The country is experiencing long lead times for LLINs. Currently, lead times for LLINs are 9–11 months. There are several reasons for the long lead times. The first is around demand from the country level. Countries continue to implement universal LLIN coverage campaigns, which require significant quantities of LLINs; at the same time, many countries are implementing continuous distribution of LLINs. Vendors are operating at close to full capacity, as demonstrated by their responses to RFQs posted by the project. Second, each LLIN procurement is unique: the clients must carefully review all branding requirements, specifications, and packaging. There are often several different parties in-country that must review each specification. When requests for changes to logos, or specifications, come in late, this can significantly delay the lead time for an order. In response to these challenges, the project is engaging with vendors to verify their proposed lead times, and negotiating for better lead times, encouraging countries to submit their CPIRs as soon as possible, and providing feedback on realistic lead times for planning purposes.

## In-Country Registration

Products procured by the project must be registered in the countries where they are to be delivered. This is a challenge for some products, such as essential medicines and SP. Regulatory policy continues to evolve in many of the countries where we work, which makes it difficult for the project, suppliers, and the original manufacturers to routinely track and update registration information. Registration lead times can be very long (more than two years in some countries). Because the project primarily works through wholesalers, who typically (but not always) rely on a third party to advise them of current registration status, it adds another layer of complexity and often leads to supply delays or failure. Furthermore, the waiver process is often not clear, or conflicting information is given. The project continues to work closely with field offices in-country and drug regulatory boards and agencies in an effort to maintain accurate and up-to-date registration information; however, the changing landscape of both pharmaceuticals needed and available manufacturers/suppliers makes this process a consistent challenge. We are also mapping out registration by the main manufacturers for products like SP to determine if direct procurement from a few key manufacturers might help address access to registered products.

## Managing Expectations Around Lead Times

The project continues to receive CPIRs with desired receipt dates that are not feasible given the steps in the procurement and shipping processes. This applies to a range of products—from ACTs to RDTs, to LLINs, to essential medicines. To manage expectations and provide good service to missions and country programs, the project developed and disseminated a lead time table, which provides estimates of lead times, by commodity; as well as estimated shipping time, including both air and sea, for each country.

## **Customs Clearance and Arrival of Goods In-Country**

Clearing project-procured commodities through customs remains a challenge in certain countries. In Nigeria, demurrage costs were incurred due to a variety of challenges in communication. The vendor is paying a significant percentage of these costs. Challenges have also become apparent in DRC, where the clearance process is lengthy, with an estimated lead time of 129 days for delivery from the date the goods are available until the preclearance approval to ship is provided. Previously, the project had sent products directly into DRC, where they were held until clearing customs; however, this made products susceptible to pilferage. In response, the project now packs ACT orders for DRC by their ultimate delivery destination, and the goods are kept in secure warehousing in Europe while the customs clearance is being obtained. Mozambique is another country with lengthy clearance procedures. It took 95 days from the day ACTs were available to the time when the green light to ship was received from the country. In response, the project ships orders to Mozambique to South Africa; from there, once the green light is obtained, transit time for the goods is far less. In Angola, PMI requires that the transfer of custody of PMI commodities to the Angolan MOH only occur at the provincial level. As such, Angola continues to be one of the more difficult places for freight forwarding. The project continues to obtain exemptions from several Angolan government agencies, which allows consignments to bypass the customs warehouse and be delivered directly to the recipient. This process has been streamlined, and the amount of days required to coordinate this has been significantly reduced.

## **Data Quality and Availability**

Real data on consumption, stock on hand, and shipment information are necessary to effectively plan for the country's commodity needs. The project relies on central- and facility-level data from various sources, such as the PPMRm, EUV, and LMIS. Unfortunately, for a variety of reasons, the quantity, quality, and regularity of the data provided is sometimes questionable, which diminishes overall confidence in the system. Where LMISs are already in place, the project is focused on strengthening these existing systems to ensure that the data moving up and down the supply chain is reliable. In other countries, the project continues to work hand-in-hand with government counterparts to put practical and reliable information systems into place. There are still significant sensitivities around the sharing of MOH-*owned* data in multiple countries.

## **Governance Challenges to In-Country Activities**

Governance issues at the country level continue to present significant barriers to project implementation in a variety of countries. Both political and practical challenges result from these situations; they have a direct impact on TO Malaria's ability to both work with host country systems and support their supply chains. While support has resumed in Mali, following a recent coup, ongoing political and security challenges prevent the scale of operations originally planned for the country under the TO. In Madagascar, continuing prohibitions against working directly with the Government of Madagascar have posed significant challenges to commodity distribution, which cannot be organized or managed in collaboration with government-owned health facilities. High-value malaria commodities in-country are still at risk for pilferage. The project continues to develop and implement warning systems, both to prevent and identify leakage, as early as possible. For example, in Tanzania, the ACT monitoring activity tracks ACTs to the clinic level to ensure their safe arrival at the periphery of the health system.

## Appendix A

# Commodities Procured

Item Description	Country	PO Date	Sub Category	PO#	Quantity	Total Quantity	Total Value
Test, Rapid Diagnostic Malaria, Ag P.f/pv Device, [SD Bioline] 25 tests	Angola	22-Oct-12	RDTs	PO-PUP-1093	36000	11-Feb-4364	\$612,000.00
Artemether/lumefantrine, 20mg/120mg tablets, 6x2 Blister pack, 30 treatments	Benin	4-Oct-12	ALu Generic	PO-PUP-1089	4400	26-May-2261	\$110,880.00
FDC artesunate/amodiaquine, 25mg/67.5mg, tablet, 3 per blister, 25 blisters per pack	Burkina Faso	10-Dec-12	FDC AS/AQ	PO-PUP-1134	12760	10-Aug-6363	\$570,200.00
Bed net, Polyethylene, Permethrin, 150 dn, (160 x 180 x 170 cm), White, Rectangular, piece	Burkina Faso	18-Dec-12	RDTs	PO-PUP-1142	80000	23-Oct-7375	\$980,000.00
Test, Rapid Diagnostic Malaria, Ag Pf, Cassette,[SD Bioline] Kit 25 tests	Burkina Faso	14-Feb-13	LLINs	PO-PUP-1203	69100	06-Apr-2858	\$980,000.00
Test, Rapid Diagnostic Malaria, Ag Pf, Cassette,[SD Bioline] Kit 25 tests	Burkina Faso	15-Feb-13	RDTs	PO-PUP-1208	40000	26-Nov-4637	\$490,000.00
FDC artesunate/amodiaquine, 50mg/135mg, tablet, 3 per blister, 25 blisters per pack	Burundi	5-Dec-12	FDC AS/AQ	PO-PUP-1124	16020	11-Jul-2996	\$140,175.00
Bed net, Polyester, Deltamethrin, 100dn, (160x180x150), white, rectangular, piece	Burundi	5-Dec-12	LLINs	PO-PUP-1125	625000	10-Mar-3611	\$1,781,875.00
Mirror Unit for Microscope CX31, Each	Burundi	22-Feb-13	Lab Supplies	PO-PUP-1212	20	various	\$44,620.00
Microscope CX31 with Objectives W/4, 10, 40, 100 X Plan OB, each	Burundi	22-Feb-13	Microscopes	PO-PUP-1212	20	20-Jan-1900	\$30,930.00

Item Description	Country	PO Date	Sub Category	PO#	Quantity	Total Quantity	Total Value
FDC artesunate/amodiaquine, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	DRC	3-Oct-12	FDC AS/AQ	PO-PUP-1088	1900	17-Jan-2030	\$42,313.00
FDC artesunate/amodiaquine, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	DRC	17-Oct-12	FDC AS/AQ	PO-PUP-1092	1440	14-Feb-2097	\$46,935.00
FDC artesunate/amodiaquine, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	DRC	13-Dec-12	FDC AS/AQ	PO-PUP-1138	14400	##### #####	\$2,311,113.25
Bed net, Polyethylene, Permethrin, 150dn, (160x180x150), white, rectangular, piece	DRC	13-Mar-13	LLINs	PO-PUP-1223	140000	09-Nov-6006	\$3,626,800.00
Surgical forceps for microscope slides	Ethiopia	25-Oct-12	Lab Supplies	PO-PUP-1096	140	various	\$194,376.00
	Ghana	7-Mar-13	FDC AS/AQ			22-Feb-2710	\$145,262.00
	Ghana	7-Mar-13	Coartem			22-Oct-2593	\$326,799.60
Battery Supply Unit for PrimoStar ILED; charger included; country-specific adapter; each	Guinea	12-Nov-12	Quinine Inj	PO-PUP-1107	300	18-Feb-1982	\$10,200.00
Quinine di-hcl 300mg/ml 2ml	Guinea	30-Jan-13	SP	PO-PUP-1196	375	17-Sep-2926	\$10,447.50
Sulfadoxine/Pyrimethamine 500mg/25mg, Pill, Bottle, 1000 tablets	Guinea	30-Jan-13	Quinine Inj	PO-PUP-1196	400	06-Jul-2009	\$10,728.00
Quinine di-HCl (injectable) 600mg/2ml, pack of 100	Guinea	19-Feb-13	RDTs	PO-PUP-1210	40000	26-Nov-4637	\$590,000.00
Bed net, Polyethylene, Deltamethrin, 118dn, (190 L x 160 w x 150 h cm), white, rectangular, each	Guinea	11-Mar-13	LLINs	PO-PUP-1222	790000	10-Dec-4062	\$2,125,100.00
Microscope PrimoStar iLED, w/ Objectives W/10, 20, 40, and 100x (oil), each	Guinea	14-Mar-13	Lab Supplies	PO-PUP-1241	20	various	\$141,052.70
Test, Rapid Diagnostic, Malaria Ag P.f/Pan, [SD Bioline], 25 tests	Guinea	14-Mar-13	Microscopes	PO-PUP-1241	20	20-Jan-1900	\$30,780.00

Item Description	Country	PO Date	Sub Category	PO#	Quantity	Total Quantity	Total Value
Artemether/lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Kenya	20-Dec-12	Coartem	PO-PUP-1143	37344	##### #####	\$4,884,563.00
Test, Rapid Diagnostic Malaria, HRP2 (pf) [CareStart], 40 kits	Kenya	19-Feb-13	RDTs	PO-PUP-1211	48692	24-Jul-7232	\$1,168,608.00
	Laos	12-Dec-13	Coartem			21-Apr-1993	\$46,075.20
	Laos	5-Mar-13	Coartem			24-Jun-1918	\$3,865.50
FDC artesunate/amodiaquine, 100mg/270mg, tablet, 3 per blister, 25 blisters per pack	Liberia	13-Nov-12	Quinine Tabs	PO-PUP-1108	389	15-Jan-2965	\$18,423.04
Quinine sulphate (tablets) 200mg	Liberia	13-Nov-12	SP	PO-PUP-1109	239	10-May-2554	\$5,745.56
Sulfadoxine/pyrimethamine 500mg/25mg, Pill, Bottle, 1000 tablets	Liberia	13-Nov-12	Artesunate Inj	PO-PUP-1110	22640	05-Dec-2209	\$222,324.80
	Liberia	24-Nov-12				06-Feb-3003	\$113,988.00
1 vial artesunate injection + 1 sodium bicarbonate solvent + 1 sodium chloride solvent/box, 5vials/box	Liberia	30-Nov-12	FDC AS/AQ	PO-PUP-1119	18000	22-Oct-7234	\$1,514,961.00
Test, Rapid Diagnostic Malaria, Ag HRP2 [First Response Malaria] kit, 25 tests	Liberia	30-Nov-12	RDTs	PO-PUP-1120	60000	06-Oct-8744	\$1,850,000.00
Bed Net, Polyethylene, Deltamethrin, 118dn, (190Lx180Wx170 H cm), Blue, rectangular, each	Madagascar	25-Mar-13	LLINs	PO-PUP-1245	30000	25-Jun-9374	\$8,708,700.00
Bed Net, Polyethylene, Permethrin, [CHITETEO] 150dn, (190x180x150cm), green, rectangular, each	Malawi	9-Nov-12	RDTs	PO-PUP-1105	112360	11-Oct-9590	\$1,404,500.00
Artemether/lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Malawi	20-Dec-12	Coartem	PO-PUP-1145	26670	09-Dec-7385	\$1,665,394.00
Safety Box, Sharp, Disposable, 5 L volume, each	Malawi	14-Feb-13	LLINs	PO-PUP-1206	251864	23-Oct-3328	\$1,539,499.00
Test, Rapid Diagnostic Malaria, Pf HPRII [ParaCheck], Kit 25 tests	Malawi	14-Mar-13	Safety Boxes	PO-PUP-1238	60000	11-Jan-2119	\$45,600.00

Item Description	Country	PO Date	Sub Category	PO#	Quantity	Total Quantity	Total Value
Test, Rapid Diagnostic Malaria, Pf HPRII [ParaCheck], Kit 25 tests	Malawi	29-Mar-13	RDTs	PO-PUP-1253	68000	09-Jun-6554	\$850,000.00
Bed Net Polyester, Deltamethrin 100dn (170X190X180) white rectangular, each	Mali	27-Nov-12	SP	PO-PUP-1117	1000	26-Nov-4637	\$30,760.00
Artemether/lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Mali	21-Dec-12	Coartem	PO-PUP-1146	19600	14-Jun-5359	\$1,307,980.00
Sulfadoxine/Pyrimethamine 500mg/25mg, Pill, Bottle, 1000 tablets	Mali	28-Jan-13	LLINs	PO-PUP-1189	600000	28-Sep-3542	\$2,026,200.00
	Mali	14-Mar-13	Coartem			19-Jul-3544	\$442,454.40
Test, Rapid Diagnostic Malaria, Ag Pf, Cassette,[SD Bioline] Kit 25 tests	Mali	26-Mar-13	RDTs	PO-PUP-1248	40000	26-Nov-4637	\$510,000.00
Test, Rapid Diagnostic Malaria, Ag Pf, Cassette,[SD Bioline] Kit 25 tests	Mozambique	4-Dec-12	RDTs	PO-PUP-1122	90000	#####	\$1,305,000.00
Artemether/lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Mozambique	5-Dec-12	Coartem	PO-PUP-1127	21180	#####	\$5,138,147.00
	Mozambique	11-Mar-13	Coartem			09-May-2951	\$537,600.00
Test, Rapid Diagnostic Malaria, Ag HRP2 [First Response Malaria] kit, 25 tests	Mozambique	14-Mar-13	RDTs	PO-PUP-1240	98255	#####	\$1,527,785.00
Bed Net, Polyethylene, Permethrin, 150 dn, (190 x 180 x 160), white, piece	Nigeria	27-Dec-12	LLINs	PO-PUP-1150	300000	28-Jul-7033	\$5,587,500.00
Artesunate/Amodiaquine, FDC, 100mg/270mg, tablet, 6 per blister, 25 blisters per pack	Nigeria	28-Dec-12	FDC AS/AQ	PO-PUP-1171	2280	30-Dec-5901	\$785,204.00
Artemether/lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Nigeria	28-Dec-12	Coartem	PO-PUP-1161	1280	09-Jul-5892	\$1,279,435.00
Rapid Diagnostic Malaria, HRP2 pf (CareStart) K25	Nigeria	7-Feb-13	RDTs	PO-PUP-1201	40000	26-Nov-4637	\$290,000.00
Nylon String, 2 mm diameter, 1 meter length, each	Rwanda	23-Jan-13	Nylon	PO-PUP-1186	402800	29-Oct-3002	\$18,287.12
	Senegal	17-Nov-12	Coartem			06-Aug-2316	\$189,662.40

Item Description	Country	PO Date	Sub Category	PO#	Quantity	Total Quantity	Total Value
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Senegal	5-Dec-12	RDTs	PO-PUP-1126	12000	15-May-2721	\$147,000.00
	Senegal	25-Dec-12	Coartem			17-Feb-2005	\$53,760.00
Bed Net, Polyethylene, Permethrin, 150dn, (180x150x210), dark blue, rectangular, each	Tanzania	28-Jan-13	LLINs	PO-PUP-1190	510400	27-Apr-3434	\$2,130,356.00
	Uganda	17-Oct-12	Coartem			14-Apr-3551	\$660,910.08
Rapid Diagnostic Malaria, HRP2 pf (CareStart) K25	Uganda	8-Nov-12	RDTs	PO-PUP-1103	21000	25-May-3337	\$194,250.00
Artemether/lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	Zambia	2-Nov-12	Coartem	PO-PUC-968	7200	03-Jun-7055	\$1,333,209.00
	Zambia	25-Nov-12	Coartem			25-Jul-3640	\$340,801.44
Artemether/lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Zambia	6-Dec-12	LLINs	PO-PUP-1133	770925	19-Sep-4010	\$2,153,964.45
Artemether/lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Zambia	21-Dec-12	RDTs	PO-PUP-1147	80000	##### #####	\$1,313,700.00
Bed Net, Polyethylene, Deltamethrin, 100 dn (160 x 180 x 170 cm) Rectangular, White, Each	Zambia	23-Jan-13	Coartem	PO-PUP-1187	14535	22-Sep-4287	\$366,282.00
Bed Net, Polyethylene, Permethrin, 150 dn, (160 x 180 x 170 cm), White, Rectangular, piece	Zambia	29-Jan-13	LLINs	PO-PUP-1194	200000	30-Jul-2447	\$546,000.00
Cord, power for microscope CX31 with Plug, British 3-pin rectangular, Blade plug, Each	Zambia	30-Jan-13	Lab Supplies	PO-PUP-1197	40	various	\$1,800.00
Microscope CX31 with Objectives W/4, 10, 40, 100 X Plan OB, each	Zambia	30-Jan-13	Microscopes	PO-PUP-1197	40	09-Feb-1900	\$61,860.00
Benzylpenicillin 5mu/vial	Zambia	5-Feb-13	Coartem	PO-PUP-1199	10000	10-Apr-3666	\$944,582.00
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	Zambia	23-Feb-13	Coartem			02-Mar-2798	\$121,378.50
Test, Rapid Diagnostic Malaria, Ag HRP2 [First	Zambia	8-Mar-13	RDTs	PO-PUP-1220	40000	26-Nov-4637	\$270,000.00

Item Description	Country	PO Date	Sub Category	PO#	Quantity	Total Quantity	Total Value
Response Malaria] kit, 25 tests							
Artemether/lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Zimbabwe	4-Oct-12	Coartem	PO-PUP-1090	2613	15-Aug-2114	\$137,966.40
Artemether/lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	Zimbabwe	4-Jan-13	Coartem	PO-PUP-1181	7024	09-May-3277	\$546,845.00

## Appendix B

# DFID Funded Procurements

Item Description	Sub Category	PO#	RO	PO Date	Rate	Quantity (Packs)	Commodity Value	Delivery Status
Artemether/lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Coartem	PO- PUP- 1193	3684	5-Nov- 12	14.1	10005	\$141,070.50	Delivered.
Bed Net, Polyethylene, Deltamethrin, 100 dn (160 x 180 x 170 cm) Rectangular, White, Each	LLINs	PO- PUP- 1133	3724	6-Dec-12	2.794	770925	\$2,153,964.45	Delivered.
Test, Rapid Diagnostic Malaria, Ag Pf , Cassette,[SD Bioline] Kit 25 tests	RDTs	PO- PUP- 1147	3932	21-Dec- 12	7.25	80000	\$580,000.00	Delivered.
Artemether/lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Coartem	PO- PUP- 1187	3976	23-Jan-13	12.6	14535	\$183,141.00	Order placed for June 2013.
Artemether/lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	Coartem	PO- PUP- 1188	3976	23-Jan-13	12.6	14535	\$183,141.00	Order placed for June 2013.
Bed net, polyethylene, permethrin, 150 dn, (160 x 180 x 170 cm), White, Rectangular, piece	LLINs	PO- PUP- 1194	3915	29-Jan-13	2.73	200000	\$546,000.00	Deliveries in process.



## Appendix C

# Pre-Selected ACTs

Manufacturer/Vendor	Brand	Comments
Novartis Pharma AG	Coartem® FDC , Coartem Dispersible® FDC	Artemether/lumefantrine, Dispersible: 6x1+6x2 20mg/120mg Tablet: 6x3+6x4 20mg/120mg
Sanofi Aventis/Africasoins	Winthrop® FDC	Artesunate+amodiaquine, four dosage presentations
UNICEF Supply Division	Various products	
International Dispensary Association (IDA) Foundation	Various products	
Missionpharma A/S	Various products	
CIPLA Ltd	Generic ALU	Artemether/lumefantrine, 20mg/120mg
IPCA Laboratories Ltd	Generic ALU	Artemether/lumefantrine, 20mg/120mg

## Pre-Selected LLINs

Brand	Manufacturer	Polyester	Polyethylene	Polypropylene	Denier	Pesticide	WHOPES
							Status
Interceptor®	BASF	√			75 & 100	Alpha-cypermethrin	Interim
Netprotect®	Bestnet		√		115	Deltamethrin	Interim
DuraNet®	Clarke Mosquito Control		√		145+/-5% (138-152)	Alpha-cypermethrin	Interim
Olyset®	Sumitomo Chemical		√		150	Permethrin	Full
DawaPlus®2.0	Tana Netting	√			75 & 100	Deltamethrin	Interim
Permanet®2.0	Vestergaard Frandsen	√			75 & 100	Deltamethrin	Full
LifeNet®	Bayer			√	100	Deltamethrin	Interim

## Pre-Selected RDTs

Manufacturer	Test Name	Target Antigen	Species	Comments
<b>Access Bio</b>	CareStart	HRP2	Pf	
	CareStart	HRP2/pLDH	Pf	
	CareStart Combo	HRP2/pLDH	Pf/PAN	PAN = All Plasmodium species
	CareStart Combo	HRP2/pLDH	Pf/Pv	
	CareStart Combo	HRP2/pLDH	Pf/VOM	VOM = Vivax, Ovale, Malariae,
<b>Alere-Inverness</b>	Binax Now	HRP2	Pf/PAN	
<b>ICT</b>	Malaria Pf Cassette	HRP2	Pf	
	Malaria Combo Cassette	HRP2/pLDH	Pf/PAN	
<b>Orchid Biomedical</b>	Paracheck Pf Device	HRP2	Pf	
<b>Premier Medical</b>	First Response Mal Ag	HRP2	Pf	
	First Response Mal Ag Combo	HRP2/pLDH	Pf/PAN	
	First Response Mal Ag PAN	pLDH	PAN	
<b>Span Diagnostics</b>	ParaHit Dipstick	HRP2	Pf	Dipstick only
<b>Standard Diagnostics</b>	Bioline Malaria Ag	HRP2	Pf	
	Bioline Malaria Ag Pf/PAN	HRP2/pLDH	Pf/PAN	
	Bioline Malaria Ag Pf/Pv	HRP2/pLDH	Pf/Pv	
	Bioline Malaria Ag Pv	pLDH	Pv	

## Appendix D

# TO7 Funded Short-Term Technical Assistance

Name	Destination	Date
Neil Mendieta	Tanzania	10/08/12-11/02/12
Kelsy Horton	Nigeria	11/05/12-11/16/12
Kmoses Kiema	Nigeria	11/05/12-11/16/12
Jennifer Chavez	Rwanda	11/11/12-11/17/12
Chris Guy	Kenya	11/11/12-11/17/12
Eduardo Segatore	Kenya	11/11/12-11/17/12
Loren Bausell	Nigeria	11/12/12-11/30/12
Motomoke Eomba	Rwanda	11/12/12-11/16/12
Joy Kamunyori	Nigeria	11/12/12-11/23/12
Winna Shango	Rwanda	11/13/12-11/17/12
Chris Warren	Angola	11/17/12-12/13/12
Neil Mendieta	Tanzania	11/26/12-11/26/12
Joseph Ross	Nigeria	11/26/12-12/21/12
Quail Rogers-Bloch	Nigeria	12/03/12-12/07/12
Jeff Sanderson	Ghana	12/05/12-12/15/12
Johnnie Amenyah	Liberia	01/02/13-01/18/13
Lisa Hare	Liberia	01/02/13-01/18/13
Chris Warren	Nigeria	01/04/13-01/27/13
Janne Hicks	Zambia	01/07/13-01/20/13

<b>Name</b>	<b>Destination</b>	<b>Date</b>
<b>Louis Kajawu</b>	Nigeria	01/08/13- 01/23/13
<b>Simbaras Nyanyiwa</b>	Nigeria	01/08/13- 01/23/13
<b>Joy Kamunyori</b>	Ghana	01/19/13- 02/08/13
<b>Naomi Printz</b>	Uganda	01/21/13- 01/25/13
<b>David Papworth</b>	Malawi	02/01/13- 02/25/13
<b>Mattias Wiklund</b>	Malawi	02/01/13- 02/25/13
<b>Chris Wright</b>	Malawi	02/01/13- 02/25/13
<b>Heather Casciato</b>	Benin	02/04/13- 02/15/13
<b>Jaya Chimnani</b>	Ghana	02/04/13- 02/22/13
<b>Michael Healy</b>	Ghana	02/04/13- 02/22/13
<b>Kinsy Hood</b>	SE Asia	02/04/13- 02/04/13
<b>Joe McCord</b>	Ghana	02/04/13- 02/22/13
<b>Chris Warren</b>	SE Asia	02/04/13- 03/01/13
<b>Jennifer Westfall</b>	Burma	02/12/13- 02/15/13
<b>Saul Kiddie</b>	Rwanda	02/15/13- 02/15/13
<b>Kinsy Hood</b>	Laos	03/09/13- 03/20/13
<b>Juliana Mwensi Kiddie</b>	Rwanda	03/20/13- 03/20/13

## **Appendix E**

# **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
<b>Objective 1. Improve and expand USAID's provision of malaria commodities to programs (50-60 percent LOE)</b>							
<b>Direct procurement services</b>							
Monthly procurement scorecard implemented	Monthly scorecard available which includes the following the indicators: Orders available for shipping on time; Orders shipped on time; Orders received on time; Supplier fill rates; Right quantity received; Goods arrived in right condition	Number of scorecards with 80% of the indicators available / number of months	DelPHi, Management reports	Monthly		X	
Orders shipped on time	Percentage of orders available for shipping within 10 working days of contracted date with the vendors	Number of orders available for shipping within 10 working days of contracted date with the vendor / Total number of orders placed to the vendor	DelPHi	Semi-annual		X	X
Orders received on time	Percentage of orders received by consignee countries within a month of agreed date with the mission	Number of orders received by consignee countries within a month of agreed date with the mission / Total number of orders placed by consignee countries	DelPHi	Semi-annual	The CPIR has been received and the money is available for the order	X	X
Suppliers deliver ordered commodities to satisfy contractual requirements	Supplier fill rate (contracted quantity on time) (by products)	Number of on-time delivery of the agreed upon quantity / Total number of orders placed	DelPHi	Semi-annual	Full quantity means agreed upon quantity with mission at the time of order placement		X
Respond to emergency orders as per PMI/USAID requests	Percentage of emergency orders responded to during the previous 6 months	Number of emergency orders for which a purchase order was placed / number of emergency orders	DelPHi	Semi-annual	The PMI/USAID team must formally acknowledge a request as an "emergency," which signifies initiation of the request	X	
<b>Management information system</b>							
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	
<b>Quality assurance and quality control</b>							
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
	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					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					X

Outcome	Indicators	Numerator / Denominator	Source	Frequency	Comments	Measures project performance	Measures factors beyond project control
<b>Objective 2: Strengthen in-country supply systems and capacity for management of malaria commodities (30-40 percent LOE)</b>							
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 TO3 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 TO3 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 TO3 presence countries, number of countries with a functioning LMIS / Total number of TO3 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 TO3 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 TO3 presence countries providing data for the PPMRm/Number of TO3 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 TO3 presence countries with a functioning malaria logistics coordination committee / TO3 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 TO3 presence countries that have developed supply plans for PMI-funded commodities / TO3 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	
	<b>Objective 3: Improve global supply and availability of malaria commodities (5-7 percent LOE)</b>						
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 F

# Objective 2 PMP Indicators Supplemental Information

**INDICATOR 1: Facility Stockout Rate (the percentage of facilities that experienced a stockout of a product expected to be provided or issued by that site on the day of visit)**  
(Source: EUV)

Country	Date	% Stocked out of All ACTs	N	Comments
Ghana	Oct-Dec 2012	14%	49	
	Jan -Mar 2013	16.7%	42	
Malawi	Oct-Dec 2012	2%	56	
	Jan -Mar 2013			Results from this round of data collection are pending
Mozambique	Oct-Dec 2012	12.5%	8	
	Jan -Mar 2013	NA	NA	Data collection was initiated, but impeded by flooding and then unavailability of NMCP
Nigeria	Oct-Dec 2012	0%	61	MAPS supported states
	Oct-Dec 2012	45%	11	Sokoto state
	Oct-Dec 2012	42%	12	Bauchi state
	Jan-Mar 2012	NA	NA	Nigeria conducts EUV on a semiannual basis
Tanzania	Oct-Dec 2012	9%	219	
	Jan -Mar 2013			Results from this round of data collection are pending
Zambia	Oct-Dec 2012	6%	17	
	Jan -Mar 2013	4%	23	
Zimbabwe	Oct-Dec 2012	0%	40	
	Jan-Mar 2013	10%	39	

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

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

This indicator could not be calculated for the following TO7 presence countries, as the requisite data are not reported through 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 2012

Commodity	% stocked out	N	Countries/States stocked out
AL 6x1	9%	22	Ghana, Nigeria-Bauchi,
AL 6x2	0%	22	
AL 6x3	9%	22	Ghana, Nigeria-Oyo
AL 6x4	0%	22	
FDC AS/AQ 25/67.5mg	38%	8	Benin, Ghana, Guinea
FDC AS/AQ 50/135mg	12.5%	8	Guinea
FDC AS/AQ 100/270mg, 3 tabs	25%	8	Benin, Guinea
FDC AS/AQ 100/270mg, 6 tabs	12.5%	8	Guinea
SP	41%	22	Mali, Nigeria-Benue, Nigeria-Cross River, Nigeria-Ebonyi, Nigeria-Nassarawa, Nigeria- Oyo, Nigeria-Sokoto, Nigeria-Zamfara, Zambia
RDTs	0%	17	

Jan 2013

Commodity	% stocked out	N	Countries/States stocked out
AL 6x1	5%	20	Nigeria-Benue
AL 6x2	5%	20	Zambia
AL 6x3	15%	20	Ghana, Kenya, Mali
AL 6x4	5%	20	Mali
FDC AS/AQ 25/67.5mg	29%	7	Ghana, Guinea
FDC AS/AQ 50/135mg	29%	7	Ghana
FDC AS/AQ 100/270mg, 3 tabs	29%	7	Ghana
FDC AS/AQ 100/270mg, 6 tabs	29%	7	Ghana
SP	7%	14	Mali
RDTs	13%	15	Burkina Faso, Zambia

### 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 (service delivery points) in the country**

Country	Functioning LMIS	Note
Burkina Faso	Yes	<p>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 monthly basis from the health facilities (HF) and from the Community Health Workers (CHW). At the district level, the district data manager enters the HF monthly report data into a database designed for malaria activities reporting, and sends the quarterly report file to the central level through the region by internet. In November 2012, the project provided financial support to review the malaria database and to align it to the recent changes made to the health facility monthly reporting form. The health facility monthly reporting form was revised to allow for the collection of new malaria indicators related to ACT management at the community level. The project also funded a training for all data providers on the revised database.</p> <p>The development of the database was funded under Global Fund round 7 grants and implemented in all the districts since December 2010, with technical and financial support from the project.</p> <p>The project provided technical and financial support to the NMCP for monitoring the use of the database in the field.</p>
Ghana	No	Presently, the LMIS in Ghana cannot be described as functional. What data does arrive at the central level is too late to be used for decisionmaking.
Liberia	No	LMIS has been rolled out in Montserrado county. Health facilities are reporting LMIS data once every two months. The roll out to the rest of the counties is on-going and will end in November 2012.
Madagascar	No	<p>Because of restrictions on working directly with the GOM, the project doesn't directly support the LMIS.</p> <p>The project mainly works with NGOs and is training providers in completing the LMIS forms.</p>
Malawi	Yes	100% of health facilities in Malawi are integrated in LMIS reporting. While reporting has decreased recently, the average reporting from July 2012 to March 2013 is 56% and from October 2012 to March 2013 it is 54%.
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. 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, as is the percentage of districts not included in the provincial aggregations.

Country	Functioning LMIS	Note
		An automated system (SIMAM) has been implemented at the central and provincial levels. 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 provinces do not yet post complete data from the districts.
Nigeria	No	The Malaria Commodity Logistics System has established procedures for receiving and reporting on stock at the facility level.
Rwanda	Yes	Rwanda has continued having a functioning LMIS during the reporting period. The project collected, computed, and analyzed malaria commodity data from 30 district pharmacies and on average 555 health facilities. The average reporting rates were 100% for districts and 95.6% for health facilities.
Tanzania	No	The Integrated Logistics System (ILS) provides for paper-based reporting at all levels of the system. The ILSGateway is a complementary SMS-based data collection tool developed under the USAID   DELIVER PROJECT, which has been implemented in 1,000 of the 5,000 country's health facilities and is collecting stock-on-hand data. ILS Gateway will be rolled out to all remaining facilities this year.
Zambia	Yes	EMLIP: Currently active in 27 districts (out of 73) and 627 health facilities.
Zimbabwe	Yes	Automated (AutoDRV) system exists for routine collection of LMIS data from SDPs. Central LMIS (Top Up) exists for routine analysis and reporting stock status data. Top Up upgrade in Navision (NatPharm WMS) completed.

**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	No	Although a TO7 presence country, Burkina Faso was not considered a PMI focus country during this fiscal year, and the project has not been tasked with implementing the End-Use activity.
Ghana	Yes	Ghana has been carrying out the End-Use activity quarterly since July 2009.
Liberia	NA	Although Liberia does receive TO7 field support, and initially rolled out the End-Use activity for two quarters in FY10, responsibility for the End-Use activity in this country was transferred to the Strengthening Pharmaceutical Systems (SPS) project at the conclusion of FY10, as per the FY10 MOP. It is thus not included in the denominator for this activity.
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.
Mozambique	Yes	The project has completed End-Use verification data collection visits to Nampula, Maputo Province, and Maputo City thus far this year.
Nigeria	Yes	Nigeria's first EUV activity was conducted in November/December of 2012.
Rwanda	NA	Although Rwanda is a TO7 presence country, responsibility for the End-Use activity was transferred to the SPS project, as per the FY10 MOP; it is thus not included in the denominator for this indicator.
Tanzania	Yes	Tanzania has been carrying out the End-Use activity quarterly since January 2009. During the reporting period, plans were made for an STTA to support revisions to the activity in Tanzania to bring it in line with new requirements.
Zambia	Yes	Zambia has been carrying out the End-Use activity quarterly since November 2009.
Zimbabwe	Yes	No ad hoc STTA requests this period.

**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	Functioning Coordination Committee	Note
Burkina Faso	Yes	In Burkina, there is malaria commodities coordination body named “ACT committee” led by the Director General of the pharmacy department. During the first part of this fiscal year, the committee met monthly and as often as ACT issues arose. The ACTs and other malaria commodities logistics issues are presented, discussed during the meetings, and recommendations made to address them. USAID   DELIVER PROJECT provides technical and financial supports to the ACT committee to ensure donor and government coordination around malaria commodity supply. Central Medical Stores (CAMEG), NMCP, pharmacy department, and other partners involved in malaria activities are members of this committee.
Ghana	No	The Inter-Coordinating Committee for Contraceptive Security has subcommittees that are concerned with numerous commodities, including malaria.
Liberia	N/A	There is a supply chain technical working group that should meet regularly.
Madagascar	Yes	Three functioning coordination committees related to logistics: PMI/Malaria Acquisition, Supply and Stock management committee (GAS/PMI); Roll Back Malaria (RBM)/Malaria Acquisition, Supply and Stock management committee (GAS/ RBM); Logistics Subcommittee/ LLIN campaign National Coordination Committee (CNC).
Malawi	No/kind of/used to be?	In theory, these are meant to be quarterly meetings. However, that hasn’t worked in practice. HTSS initiated a broader SC coordination meeting covering all programs in December that was meant to replace the NMCP meeting. The first meeting was useful and promised to be a good forum for coordination. However, with Godfrey’s departure from HTSS and the effective dissolution of his department, this forum has also ceased to function. Once the new leadership is settled, it is hoped this will be revived.
Mozambique	Yes	The Malaria Commodities Working Group continues to meet regularly and reports quarterly on pipeline status and potential stock status issues.
Nigeria	Yes	Monthly Procurement and Supply Management meetings
Rwanda	Yes	The malaria and other parasites disease division facilitated a stakeholder meeting quarterly to review ongoing malaria-related programming activities and upcoming shipments.
Tanzania	Yes	The ‘ACT working group’ meets once a quarter to discuss all areas around malaria programming, procurements, and interventions.
Zambia	Yes	A logistics coordination committee headed by the Drugs and Logistics Officer from NMCC is in place.

Country	Functioning Coordination Committee	Note
Zimbabwe	Yes	The MMSCT Technical and Policy Committee meetings are held once a quarter.

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

Country	Available supply plans	Note
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 recipients of Global Funds, CAMEG, etc. A yearly supply plan is developed for each malaria commodity. The updated supply plan is always presented and discussed at the ACT committee meeting for validation, in the presence of all donors involved in funding malaria commodities.
Ghana	Yes	A supply plan will be developed during the malaria quantification in May 2013.
Liberia	Yes	There is a supply plan in place. It was recently reviewed against the current stock status and updated.
Madagascar	Yes	Newly reviewed supply plan by GAS/PMI, to be shared with RBM: From FY2014 on, PMI partners will request that the annual order for RDT and accessories be received in four staggered deliveries as follows: 1st delivery to be received in January (32% of the annual amount), 2nd delivery in April (28%), 3rd in July (14%), and 4th delivery in October (26%).
Malawi	Yes	The supply plan is developed taking into account the quantification and the donor commitment to supply the country in quantified commodities. PMI funding for ACT supply last FY was initially committed for community case management. Procurement planning by PMI for the coming year includes ACT for both CCM and health-facility level.
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 2012 to 2016; the corresponding supply plan was developed. Since then, the quantification and supply plan have been adjusted as additional consumption and shipping information becomes available—most recently in conjunction with a Global Fund PSM exercise in March.
Nigeria	Yes	PPMRm is updated quarterly and there is a PipeLine database for PMI commodities.
Rwanda	Yes	Yes, Rwanda has a national malaria supply plan that is prepared internally and submitted to PMI. Technical assistance, although

Country	Available supply plans	Note
		evidently needed given the output, has not been accepted from partners.
Tanzania	Yes	Yes, Tanzania has a national malaria supply plan. The PPMRm is updated regularly, product and funding are tracked, and gaps are identified.
Zambia	Yes	Following the 2013–2016 annual forecast and quantification review exercise for malaria commodities undertaken from 3–5 April 2013, a national supply plan for 2013/2014 was developed. The supply plans are for ACTs, RDTs, SP, and LLINs using PMI, DFID, GF, and MOH funds. It is important to note that Zambia also conducted the second formalized forecast and quantification for LLINs.
Zimbabwe	Yes	National supply plans that inform all MOH CW and partner-supported procurements (including PMI and GFATM) updated every trimester (last in February 2013).

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

Country	Number of technical tools	Note
Burkina Faso	20	<ul style="list-style-type: none"> <li>• Micro-plan forms for district and Health facility levels (2);</li> <li>• Household census data collection forms (5)</li> <li>• Voucher to give to the households during the household census (1);</li> <li>• LLIN distributions forms (5)</li> <li>• LLIN and voucher stock management forms (2)</li> <li>• Transaction forms and other management forms (5).</li> </ul>
Core	1	Development of LMIS tool
Ghana	2	<p>The Supply Chain Master Plan was finalized and signed by Ghana's Minister of Health.</p> <p>The Regional Warehouse assessment has been completed and the report will follow shortly.</p> <p>Early Warning System (EWS), a sustainability plan; conduct a landscape analysis of LMIS tools.</p>
Liberia	2	Warehousing SOP were developed and implemented by the National Drug Service.
Madagascar	6	GAS tracking tool; revised NGO/FBO supervision canvas; National gap analysis (semi-annual narrative section).
Malawi	4	The PSC was initially developed upon USAID mission request to ensure the reception, storage, and distribution of USG-funded commodities. Subsequently, Global Fund requested that its malaria commodities in Malawi should also be managed through the same flow. List of PSC standard reports are—

Country	Number of technical tools	Note
		<ul style="list-style-type: none"> <li>• PSC monthly stock status report</li> <li>• malaria commodities monthly distribution plan</li> <li>• malaria commodities follow-up distribution report (every two days during the delivery process)</li> <li>• Proof of delivery (POD)</li> <li>• POD reconciliation report</li> <li>• storage monitoring (internal only)</li> <li>• financial reports to Global Fund and USAID/Malawi.</li> </ul> <p>In addition, the project prepares a monthly stock status report for the MOH/HTSS, RHU, and NMCP, which includes a pipeline projection using both GFATM and PMI procurement plans.</p> <p>Furthermore, the project has supported an LMIS evaluation, which has a technical report; the pre-service trip report is also available.</p>
Mozambique	2	Annual report ( <i>Relatório Anual</i> ), quarterly EUV reports, report on first year of NMCP Supervision/End Use (2012) during which all 11 provinces were visited.
Nigeria	1	EUV Report
Rwanda	1	Revised the LMIS form
Tanzania	5	ACT Monitoring Reports (2), Quantification Review, End-Use verification reports (2), MSD strategic review,
Zambia	6	Tools: SCMgr, PipeLine, and Magpi. Reports: PPMRm, End-Use verification report and forecast and quantification reports
Zimbabwe	1	One tool developed to assess functioning of logistics system for malaria community case management. Two quarterly malaria End-Use verification reports compiled and disseminated to malaria stakeholders, including MOH CW, NMCP, and PMI.



## **Appendix G**

# **Deliverables Status for FY13**



Deliverable/ Publications (Output of activities)	Person Responsible	DUE DATE						Ready for internal interview	Submitted to PMI for review	Received back from PMI w/ comments	Ready for internal review	Final sent back to PMI	Final sent to KM team	Submitted to web	Comments
		Q1	Q2	Q3	Q4	Q5	Q6								

**Objective 1**

Procurement Excellence	Kate/ Chris G		X												Submitted to PMI, awaiting feedback.
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**Objective 2**

Pilot innovative approaches to malaria product distribution and data management at the community level in collaboration with TO4	Joe/ Naomi		X	X	X	X	X								Assesment to begin in June.
Managing LLIN Packaging – Procurement considerations	Chris W/ Chris G				X										Initial bricks have been created.
Malaria in Pregnancy	Kate/ Loren		X												Matrix submitted: <b>Deliverable Done.</b>
Seasonality and calculating resupply: country applications	Loren/ Kate				X										On track to complete by Q4.
EUV activity: continuing support to countries, and conducting quantitative analysis	Loren/ Mike	X	X	X	X	X	X								Continuing Support to countries being provided.
Data Dashboards	Loren		X	X											Scheduled to be completed by June 15.
Supporting PMI's Impact Evaluation	Loren	continuous/as asked													Available as needed, but received no requests.



## **Appendix H**

# **EMMP**

List each Mitigation Measure from column 3 in the EMMP Mitigation Plan (EMMP Part 2 of 3)	Indicator	Status	List any outstanding issues relating to required conditions	Remarks
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. In such instances, the project will seek confirmation of local USAID Mission IEE on file	1. Documented verification of Mission IEE on file	Complete	None	
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	2. Percentage of orders that included product-specific information documenting disposal requirements	100%	None	
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	3. Number of instances when DELIVER TO7 has been requested to provide guidelines or training.	1	LLINs will be procured in bulk-packaging for Burkina Faso in FY13, and any relevant mitigation	

with the environmental determinations and recommendations of the PIEE			measures will be included in the FY13 semi-annual report.	
If disposal of any pharmaceutical drugs under project control is required, due to expiration date or any other reason, the project will first pursue the preferred method of disposal of returning the product to the manufacturer. If this is not possible, the project will follow the guidelines in the WHO document <i>Guidelines for Safe Disposal of Unwanted Pharmaceuticals During and After Emergencies</i>	4. Percentage of disposed products under project control returned to supplier or dealt with according to WHO guidelines	100%	None	
The project will adhere to WHOPEP recommendations and established QA/QC policies when procuring LLINs <sup>1</sup> . 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.	5. Percentage of LLIN shipments with pre-shipment test reports available	100%	None	
In countries that required that LLINs are registered, all nets procured through TO7 will be registered in the country in which the nets are	6. Percentage of LLINs procured that are registered in accordance with	100%	None	

<sup>1</sup> This year the project was asked to update the EMMP to ensure that insecticide treated hammocks were included in the LLIN-specific indicators.

distributed.	country policies (if required by the country)			
The project will work with manufacturers 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.	7. Recorded instances of assistance provided for development/distribution of BCC materials	0		In consultation with PMI, the project created an EMMP annex specific to dissemination of BBC materials during LLIN distribution activities. This annex indicates per country who is responsible for implementing and monitoring dissemination of such BCC materials. These annexes are included in this report.
The project will adhere to the recommendations identified in the Programmatic Environmental Assessment for Malaria Vector control, dated January 2007, for: <ul style="list-style-type: none"> <li>○ Procurement</li> <li>○ Storage</li> <li>○ Inventory Control</li> <li>○ Use</li> <li>○ Waste Disposal</li> </ul>	8. Completion of EMMP Report on a semi-annual and annual basis	Complete as of this semi-annual report for FY2013	None	

For more information, please visit [deliver.jsi.com](http://deliver.jsi.com).

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