USAID | DELIVER PROJECT

Task Orders 3 and 7 (Malaria):

FY2011 Annual Report

October 2010–September 2011

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PRESIDENT'S MALARIA INITIATIVE

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FY2011 Annual Report

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The authors' views expressed in this publication do not necessarily reflect the views of the U.S. Agency for International Development or the United States Government.

USAID | DELIVER PROJECT, Task Order 3
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Abstract
This annual report documents the activities of Task Orders 3 /7 (Malaria) during FY2011 (October 1, 2010–September 30, 2011). Key sections highlight the major activities under each objective—the accomplishments, the implementation issues, and proposed solutions.

Cover photo: Offloading bales of LLINs at Itara, Nigeria, for the nationwide net distribution. 2011. USAID | DELIVER PROJECT

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Acronyms

ACT	artemisinin-based combination therapy
AMFm	affordable medicines for malaria
AMP	Alliance for Malaria Prevention
AutoDRV	automated system
CA	collaborating agency
CCB	Change Control Board
CDC	Centers for Disease Control and Prevention
cGMP	current good manufacturing practices
CHAI	Clinton Health Access Initiative
CMAM	Central de Medicamentos e Artigos Médicos
CMS	Central Medical Stores
COTR	Contracting Officer's Technical Representative
CPIR	commodity procurement information request
DFID	Department for International Development
DHO	District Health Office
DRC	Democratic Republic of Congo
EDI	Electronic Data Interchange
EMEA	European Medicines Agency
EMLIP	Essential Medicines Logistics Improvement Program
EMMP	Environmental Mitigation and Monitoring Plan
ENRI	Ethiopian Health and Nutrition Research Institute
EOI	expression of interest
EQA	external quality assurance
ERP	Enterprise Resource Planning
FDC AS/AQ	fixed-dose combination Artesunate amodiaquine
FCT	Federal Capital Territory
FIND	Foundation for Innovative Diagnostics
GFATM	The Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria
HCW	health care waste
HMIS	health management information system
IDA	International Dispensary Association

IIC	Intelligent Insect Control
ILS	integrated logistics system
IQC	Indefinite Quantity Contract
IRS	indoor residual spraying
IPTp	intermittent preventative treatment in pregnancy
IT	Information Technology
JSI	John Snow, Inc.
LGA	local government area
LLIN/LN	long-lasting insecticide-treated bed net
LMIS	logistics management information system
LOE	level of effort
MIS	management information system
MMV	Medicines for Malaria Ventures
MOH	Ministry of Health
MOHCW	Ministry of Health and Child Welfare
MOHSW	Ministry of Health and Social Welfare
MOP	Malaria Operational Plan
MSD	medical stores department
MSH	Management Sciences for Health
MSL	Medical Stores Limited
NDS	National Drugs Service
NIR	near-infrared
NMCP	National Malaria Control Program
NRI	Natural Resources Institute
OAA	Office of Acquisition and Assistance
PDA	personal digital assistant
PHCP	Primary Health Care Packages
PMI	President's Malaria Initiative
PMP	Performance Monitoring Plan
POD	proof of delivery
PPMRm	Procurement Planning and Monitoring Report for malaria
PSM WG	Procurement and Supply Chain Management Working Group
PSU	Pharmaceutical Supply Unit
QA	quality assurance
QASP	Quality Assurance Surveillance Plan

R4D	Result for Development
R&R	Report and Request forms
RBM	Roll Back Malaria
RDMA	Regional Development Mission Asia
RDT	rapid diagnostic test
RFP	Request for Proposal
RFQ	Request for Quote
SAICM	Strategic Approach to International Chemicals Management
SDLC	System Development Life Cycle
SDP	service delivery points
SCMU	Supply Chain Management Unit
SKU	stockkeeping unit
SLA	service level agreement
SOP	standard operating procedure
SOW	scope of work
SP	sulphadoxine-pyrimethamine
SPS	Strengthening Pharmaceutical Systems Project
SST	State Support Team
STTA	short-term technical assistance
TO	task order
TOM	Task Order Malaria
tx	treatments
UNICEF	United Nations Children's Fund
UPS	United Parcel Service
USAID	United States Agency for International Development
USAID/W	United States Agency for International Development Washington Office
USG	United States Government
USP	United States Pharmacopeia
WHO	World Health Organization

Executive Summary

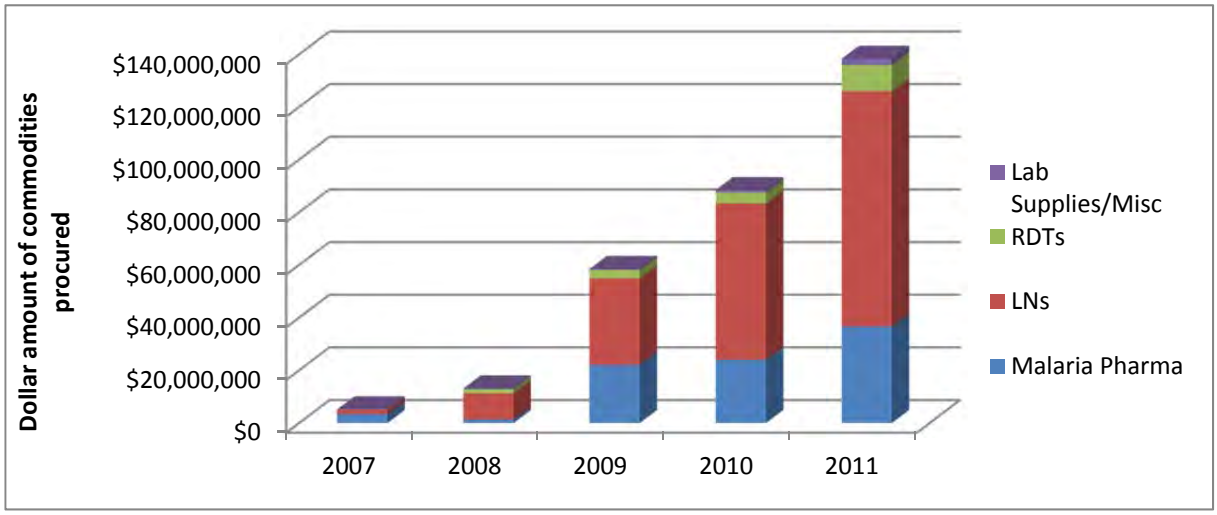
This annual report covers the period from October 1, 2010, to September 30, 2011; it describes the activities of Task Order 3 (TO3) and Task Order 7 (TO7), jointly called Task Order Malaria (TO Malaria), under the USAID | DELIVER PROJECT Indefinite Quantity Contract with John Snow, Inc. TO Malaria is 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 a total of 19 PMI-focus countries, three non-focus countries, and has recently expanded to six countries in the greater Mekong Sub-region of Asia (this is called the RDMA program–Regional Development Mission Asia). PMI is led by the U.S. Agency for International Development (USAID). TO Malaria has a long-term presence in ten of the PMI-focus countries, and in two USAID malaria countries.

TO Malaria has three main objectives, under which all of its activities are organized: (1) to improve 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, RTT./Pharmaceutical Healthcare Distributors (PHD), UPS Supply Chain Solutions, FHI 360, The Manoff Group, Inc., 3i Infotech, Population Services International (PSI), and Foundation for Innovative New Diagnostics (FIND). Under TO7, Logenix International, LLC; MEBS Global Reach, LLC; Social Sectors Development Strategies, Inc. (SSDS); and VillageReach joined the team.

Improve and Expand the Provision of Antimalarial Commodities to Country Programs

Each year, the project has significantly expanded the volume of products procured, as shown in figure 1. During FY2011, we received 123 procurement requests from 24 countries. A total of 162 orders were placed with vendors for a total value of U.S. $132.2 million (commodity cost only). The value of the products procured during this period is 37 percent higher than in FY 2010.

Figure 1. Total Commodities Procured, 2007–2011



Major procurement items included:

- 22.4 million long-lasting insecticide-treated bed nets (LLINs)
- 47.6 million artemisinin-based combination therapy (ACT) treatments—37.6 million treatments of artemether lumefantrine (AL) and 10 million treatments of fixed-dose combination artesunate/amodiaquine (FDC AS/AQ)
- 17.5 million rapid diagnostic tests (RDTs)
- 14.7 million sulphadoxine-pyrimethamine (SP) tablets for IPTp (intermittent preventative treatment in pregnancy)
- 3.3 million quinine-based tx (treatments) of tablets and injections for the treatment of severe malaria
- 724 microscopes and kits for malaria

Only vendors and manufacturers that pass internal requirements (good manufacturing practices [GMP], product stability data, previous supply record, etc.), and are included on the PMI preselected list, are invited to bid or quote. For RDTs, seven manufacturers were selected on the basis of meeting the technical criteria defined and the performance of the RDTs under Round 2 of the WHO/FIND product testing. An expression of interest (EOI) was extended to manufacturers of LLINs to expand the range of manufacturers from which the project can procure.

There are currently global ACT production constraints, and the project has initiated three approaches to deal with this:

1. Novartis agreed to offer significant discounts for orders placed 12 to 16 weeks in advance of demand.
2. TO3 decided that it would manage its own inventory of Coartem® at the UPS Roermond warehouse in the Netherlands to enable it to respond quickly to countries' emergency orders,

obtain better pricing, and mitigate supplier production risk. To date, this stock has been sent to countries in need immediately upon release so none has been held in Roermond.

3. The project has asked countries to submit 12-month supply plans so orders can be placed with manufacturers earlier.

During the reporting period, the project has continued to monitor system performance monthly using the scorecard to show results. Given the high level of system performance last year, we raised the target levels this year from 80 to 85 percent or higher (green), from 50 to 65 percent (yellow), and from 50 to 64 percent or lower (red). The overall indicator results were at or slightly below the target levels. These results are in spite of the increased level of procurement activity during this period, compared with the previous fiscal year. During this reporting period, the orders available for shipping rate was 78 percent, and the received in-country by desired receipt date was below the target performance level (66 percent). The two main reasons for the delays were production delays at the manufacturer level and country-specific preclearance requirements.

Under TO3, all freight forwarding was done by UPS Supply Chain Solutions. However, TO7 competes its freight needs between two freight forwarders: Logenix International, LLC, and MEBS Global Reach, LLC, which have handled all TO7 shipments to date.

TO3 continued to implement its rigorous quality assurance polices, including concurrent physical and chemical testing of LLINs, lot testing of RDTs at World Health Organization (WHO)-qualified laboratories, batch testing of pharmaceuticals, and near-infrared (NIR) scanning by the Centers for Disease Control and Prevention (CDC).

The MIS team supported the start-up operations of Task Order 7, which transitioned during the year from Task Order 3, 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, and the status of shipments. MIS reliability, availability, and ease of secure access are measured against an SLA (service level agreement). The project met or exceeded all standards in the reporting year.

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

Strengthening in-country supply systems and building greater capacity for improved management of malaria commodities at the local level are critical to the success of TO Malaria and to achieving PMI's goals. Specifically, the project focuses on improving system performance, improving visibility of stock data at all levels, strengthening accountability for the products managed, bridging the gap between key supply chain entities (NMCPs and CMSs), and building capacity to sustain performance.

Improving System Performance

- **Guidelines for Managing the Malaria Supply Chain.** The project completed and published a malaria-specific companion guide to the logistics handbook, focusing on those characteristics of the disease and products that affect supply chain design and implementation.

- **Regional Meeting in Ghana.** In April 2011, TO Malaria held a regional meeting in Accra, Ghana, for project country offices and field staff. The meeting was field-centered, rich in technical discussions, and in south-to-south exchanges.

Country highlights include—

- **Ghana:** In line with the current NMCP policy to achieve universal coverage of LLINs, the project has provided technical and logistics management support for the distribution and hang-up of LLINs in collaboration with other partners. The project, in particular, facilitated the transportation of 1,863,450 LLINS from the Central Medical Stores to districts in the Eastern and Volta regions for the distribution and hang-up campaigns. The project led a team of partners to carry out a post-LLIN hang-up campaign validation after each campaign exercise.
- **Madagascar:** The project procured 2,585,000 LNs and distributed 2,579,720 LNs. The project team took part in supervising the distribution in the north and in the south, and compiled observations on lessons learned, challenges, and areas for improvement. During the campaign, the project also supervised the collection of used LLINs in the six targeted districts for the LLIN recycling pilot project. A total of 22,559 used bed nets from 34 collection sites were retrieved.
- **Nigeria:** A total of 16,294,606 LLINs were distributed in over 18,000 distribution points across the states. Additionally, the project averted the potential wastage of several months' supply of medicines procured through Global Fund Primary Recipient YGC but "stranded" at the state capitals because of the lack of funds for last-mile distribution. The project supported the distribution of 311,100 doses of short-dated ACTs from state Central Medical Stores to 1,030 service providers in six states. This support informed deliberations by NMCP and its partners and facilitated the initiation of actions to remedy the situation.
- **Zambia:** Conducted a regular review of the Supply Chain Manager Software, PipeLine database, and MSL reports to confirm that approved facilities have ordered or received antimalarial medicines, LLINs, and/or RDTs, as appropriate. Instituted immediate follow-up action(s), as needed, to ensure that antimalarial drugs and RDTs are being distributed based on availability and need. Supplemented LMIS data with data collected at a select sample of sites at the lowest level of the system, and captured information on actual program implementation—in particular, connected diagnosis patterns with treatment patterns.

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

- **Analysis of HMIS and LMIS data.** TO Malaria conducted an analysis of HMIS and LMIS data in one province in Zambia. The analysis looked at differences between the data, investigated the root causes of discrepancies between the data, and proposed solutions for managing those discrepancies. Additionally, the report identified options to better link these data and use them for decision making.
- **End-Use Verification.** Over the last year, TO Malaria continued quarterly rounds of data collection and reporting in Ghana, Tanzania, and Zambia, and added two new countries—Malawi and Mozambique. Findings from the End-Use activity are routinely shared

with ministries of health and in-country stakeholders, and have also been used throughout this year to contribute to a number of presentations related to ACT availability at the country level.

- **Procurement Planning and Monitoring Report for Malaria (PPMRm)**. PPMRm is a tool that provides data on central level stock availability for malaria commodities, including ACTs, sulphadoxine-pyrimethamine (SP), and RDTs. The tool continues to play a critical role in identifying current or impending shortages, stockouts, and expiries. Data on RDTs and SP were added during the first quarter of FY11. One non-focus country—Burundi—was added, as were three focus countries—Democratic Republic of Congo (DRC), Nigeria, and Zimbabwe.

Country highlights include—

- **Burkina Faso:** During FY11, the NMCP developed a malaria database to improve the reporting of statistics and logistics data in the country. Analysis of the reported data helped to identify priority districts for action (i.e., to improve product availability, case management, data quality, and reporting). An important finding from analysis of the data is that there is a discrepancy among total number of cases of uncomplicated malaria, the number of cases treated, and the number of ACTs dispensed.
- **Liberia:** The project, in conjunction with the NMCP, the NDS, and SCMU, reviewed, revised, and printed LMIS forms for all health facilities in Liberia. As a first step in computerizing Liberia's LMIS, county-level personnel received the *Supply Chain Manager* software and training materials to assist in supply chain management; central level personnel received *PipeLine* and *Supply Chain Manager*.
- **Tanzania:** To improve visibility of the movement and availability of ACTs within the supply chain, the project, in coordination with the National Malaria Control Program (NMCP) performed ACT commodity tracking in the Dar zone where data were collected from 25 percent of the total number of health facilities in each district (approximately 107 facilities). It later conducted field visits to 30 districts within the Tabora, Tanga, and Mbeya regions under the same exercise.
- **Zimbabwe:** The project assisted the Ministry of Health and Child Welfare (MOHCW) in revising the ZIP/PHCP (Primary Health Care Packages) SOPs, and training curricula, in line with a change from the paper-based to automated system (AutoDRV) for collecting essential logistics data in the field (including on TB and malaria).

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

- **Malawi:** An augmented system was designed and rolled out, as per the request of the USAID Mission in October 2010, with an objective of achieving commodity security for U.S. Government (USG)-procured products, starting with malaria commodities (ACTs, SP, RDTs). As a result of the good performance of the augmented system during the first quarter of the past FY, Global Fund recommended that the malaria commodities it procures for Malawi should be also distributed through the same system. When commodities and fuel are available, the augmented system achieves countrywide distribution of commodities to all facilities within two weeks. When these conditions are met, there is a resulting reduction in stockouts. Along with malaria commodities, the augmented system also distributes USG-procured family planning commodities such as male condoms and implants (Jadelle). Commenced in December 2010, the

augmented system has successfully performed nine countrywide distributions. It has also successfully distributed 6.3 million AL treatments and more than 1 million RDTs.

- **Tanzania:** To ensure that malaria commodities are distributed to operational facilities, the project, in collaboration with the Ministry of Health and Social Welfare (MOHSW), has started consolidating and cross-checking the list of facilities operating in the Tanzania public sector that should be receiving commodities from MSD.

Bridge the Gap between NMCPs and Supply Chain Operators (e.g., Central Medical Stores) to Improve Core Supply Chain Functions (i.e., Quantification, Monitoring and Supervision, and Use)

- **Mozambique:** As a result of the temporary hold on the disbursement of Global Fund Round 9 funds, the project stepped in to provide technical assistance to the subgroups (for ACTs and RDTs) of the Medicines Technical Working Group, to conduct a complete data collection and pipeline analysis exercise, a revision of the assumptions upon which the quantification was based, and an update of the supply plan using PipeLine software. This group brings together the NMCP, CMAM, and other key stakeholders.
- **Tanzania:** The project, in collaboration with the medical stores department (MSD) and the National Malaria Control Program (NMCP), facilitated immediate distribution of antimalarials to the Mwanza zone and Kagera region, which had experienced a severe localized outbreak of malaria.

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

- **Tanzania:** The project successfully conducted the Zanzibar Integrated Logistics System (ILS) training in Pemba, where the pilot facilities are now switching from a kit system to an ILS to be rolled out using an iterative-phased approach to gauge and manage functionality.
- **Zambia:** The project conducted refresher in-service trainings in the Essential Medicines Logistics Improvement Program (EMLIP) for new staff or staff in new sites under districts already covered in the new and approved system. A total of 1,274 individuals were trained on the supply chain management of essential drugs, including antimalarial medications and RDTs.

Objective 3: Improve the Global Supply of Malaria Commodities

The project works to strengthen international collaboration with other global partners working in malaria. The project participated in the following international meetings and conferences:

- **Tropical Medicine Annual Conference (November 2010).** The project presented two posters—the first was on the essential medicines logistics system pilot in Zambia, and the other was on the 2010 Nigeria LLIN mass distribution campaign. The project also participated in one panel presentation on in-country distributions in Angola.

- **Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria Market Dynamics and Commodities Technical Meeting (February 2011).** TO3, on behalf of PMI, presented the summary findings of the project's detailed study of the LLIN procurements, to date.
- **Alliance for Malaria Prevention Activities (February 2011).** The project presented preliminary results from the Madagascar LLIN recycling pilot.
- **Roll Back Malaria Partnership and the Procurement and Supply Chain Management Working Group (February 2011 and September 2011).** As a result of the February meeting, TO Malaria was asked to co-chair the PSM Bottleneck work stream.
- **Health and Humanitarian Logistics 2011**. The project presented on supply chain management for malaria.
- **Global LLIN Market Analysis.** TO3 provided data and participated in an interview with Result for Development (R4D) as part of its LLIN Market Dynamics Project. R4D is assessing whether opportunities exist to enhance the LLIN marketplace. Based on its preliminary analysis, R4D found that TO3 was able to secure more competitive prices than the other major funding or procurement agencies.

Under this objective, tools were developed to address common supply chain bottlenecks. These include:

- **Quantification of ACTs and RDTs.** The project participated in the development of a manual for quantifying ACTs and RDTs. The effort was led by Management Sciences for Health (MSH), with input from the project, Roll-Back Malaria (RBM), Global Fund, PMI, the World Bank, Medicines for Malaria Ventures (MMV), and FIND.
- **Health Care Waste Management of RDTs.** TO3 prepared a guide on how to manage the waste from the RDTs after the test has been used.

Another major activity under this objective included:

- **Bed Net Recycling Pilot in Madagascar.** In November 2010, the task order conducted the second phase of its LLIN recycling pilot study in Madagascar. The purpose of the pilot was to determine whether recycling would be a feasible option for bed nets that are at their end-of life use. The second phase involved collecting retired bed nets from six districts in Madagascar. The final phase was determining whether the collected nets could be recycled and used by TO3's partner, Trex, to manufacture into biocomposite plastic-wood boards. Trex was able to recycle the polyethylene nets and use the plastic in its manufacturing process. While Trex's processing costs fell within its normal range, the cost of collecting and shipping the used nets made it prohibitive as a source of plastic.

Performance Monitoring

During FY11, the project worked with the TO3 COTR to revise and update the TO3 Performance Monitoring Plan (PMP) and accompanying Quality Assurance Surveillance Plan (QASP) to ensure that the best possible measures were used to assess project performance (see Appendix I for the PMP). This PMP also covers TO7. In addition, the project and the COTR agreed upon a new set of environmental verification indicators to satisfy Environmental Mitigation and Monitoring Plan (EMMP) requirements.

In addition to the PMP indicators, the project and the TO3 COTR agreed on a set of deliverables during the work plan process for the fiscal year, including the dates of submission.

Implementation Challenges

- **Global supply shortage of ACTs.** Increased global demand for ACTs has placed pressure on manufacturers and appears to have outstripped their capacity to meet the supply. The limited global supply of ACTs will continue to be a challenge for the foreseeable future, and the project is implementing a number of strategies to address this challenge. These are: establishing an emergency stockpile of ACTs, expanding procurement to generic manufacturers, and receiving and analyzing quarterly quantifications and supply plans from countries.
- **Visibility of data.** Supply chain managers need real data on consumption, stock on hand, and shipment information to make informed decisions. Unfortunately, these are rarely available on a national level. The project is focused on strengthening information systems to ensure the visibility of data up and down the supply chain.
- **Avoiding stockouts at the country level.** Stockouts remain a chronic problem at the country level. However, the project responds to the greatest extent possible. As an example, the outbreak in Kagera, Tanzania, was responded to quickly, and an ACT stockout was averted.
- **Strengthening CMSs and managing augmented systems.** CMSs must be accountable for the products they manage. In a few cases, this lack of accountability has led the project to run commodities through an augmented system outside the CMS. In the short term, this addresses problems of leakage. However, it is not yet known what the long-term effects will be on system sustainability.
- **Spending down TO3 funds.** Spending down TO3 funds as TO7 activities are launched is complicated by the fact that it is difficult to spend the TO3 funding allocated for commodity procurement, when orders are not able to be filled due to the global shortage of ACTs. We are working closely with our COTR team to develop strategies to address this.

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

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

Procurement

The principal activity of Task Order 3 (TO3) and Task Order 7 (TO7) is to support the President's Malaria Initiative (PMI) by procuring malaria commodities in response to requests placed by the U.S. Agency for International Development (USAID) Missions; the requests are based on the needs outlined in the yearly Malaria Operational Plans (MOPs). During FY11, we processed requests for procurement assistance from 24 countries: Angola, Benin, Burkina Faso, Burundi, the Democratic Republic of the Congo (DRC), Ethiopia, Ghana, Guinea, Kenya, Liberia, Madagascar, Malawi, Mali, Mozambique, Nigeria, Rwanda, Senegal, Somalia, South Sudan, Tanzania, Thailand, Uganda, Zambia, and Zimbabwe.

Review and Refine Procurement Systems and Procedures

To officially place an order, we must receive a commodity procurement information request (CPIR) form, which is included in the procurement guide and can also be accessed on the website. The CPIR contains the relevant information needed to initiate an order, including product specifications, requested delivery dates, consignee information, etc.

There are now seven CPIR forms in use, each designed to cover a specific commodity or commodity group, and these also accommodate new or revised product presentations, i.e., the Coartem Dispersible. The forms remain "live" documents that can be, and are being, completed to reflect the bespoke nature of our procurement business model with PMI.

Operational Scale

During FY2011, we received 123 procurement requests from 24 countries. A total of 162 orders were placed with vendors for a total value of U.S.$132.2 million (commodity cost only). The value of the products procured during this period is 37 percent higher than in FY 2010.

Major procurement items included:

- 22.4 million long-lasting insecticide-treated bed nets (LLINs)
- 47.6 million artemisinin-based combination therapy (ACT) treatments—37.6 million treatments of artemether lumefantrine (AL) and 10 million treatments of fixed-dose combination artesunate/amodiaquine (FDC AS/AQ)
- 17.5 million rapid diagnostic tests (RDTs)

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Dispatching 150,000 USAID/PMI-funded kits for severe malaria from customs directly to the districts' hospitals in Burkina Faso.

- 14.7 million sulphadoxine-pyrimethamine (SP) tablets for IPTp (Intermittent Preventative Treatment in Pregnancy)
- 3.3 million quinine based tx (treatments) of tablets and injections for the treatment of severe malaria
- 724 microscopes and kits for malaria-testing laboratory upgrades

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

Figure 2. Total Value of Commodities Procured, by Type, FY11

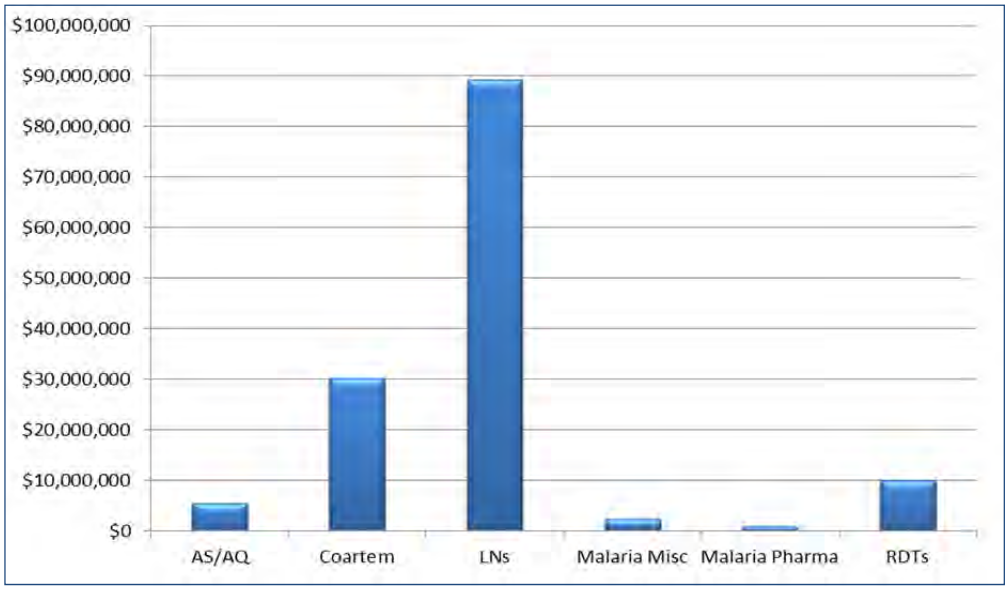
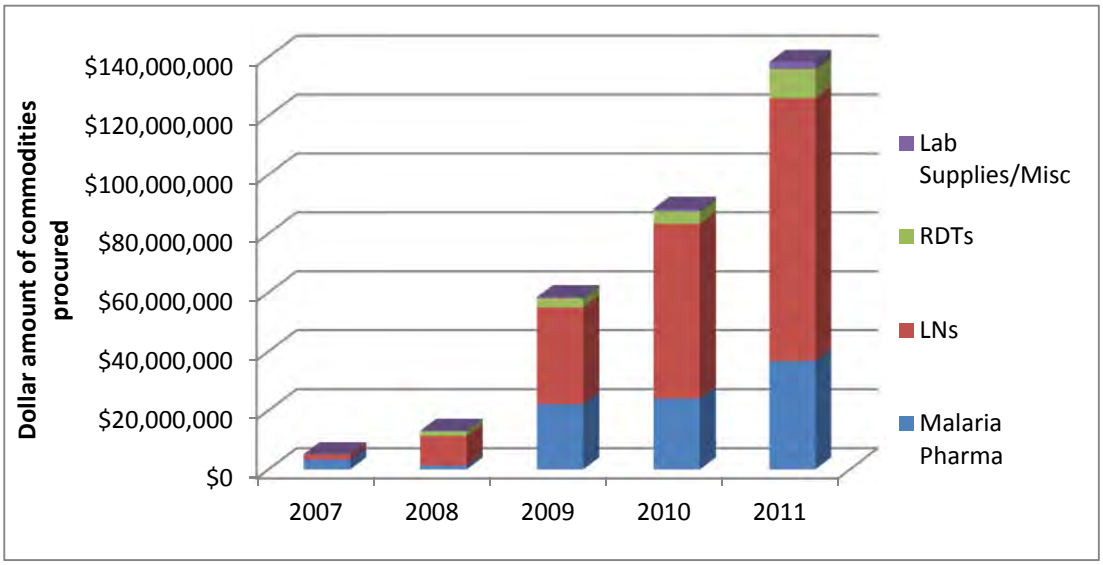


Figure 3. Total Commodities Procured, 2007–2011



During this period, we also continued procuring commodities for Zambia using funding from the U.K. Department for International Development (DFID). With DFID funding in FY11, we procured: 1 million LLINs, 3,805,560 ACTs, 6.8 million SP tablets, and 1,350,000 RDTs for a total value of U.S.$8.2 million (commodity cost only). These figures are included in the total procurement figures above. A complete report of DFID-funded procurement is included in Appendix B.

Sources and Suppliers of Commodities

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

- overall responsiveness
- conformance to product specifications
- conformance to quality certifications and standards
- conformance to packing and marking requirements
- product price
- timeliness of deliveries
- quality of product
- product registration in-country

Only vendors and manufacturers that pass internal requirements (good manufacturing practices [GMP], product stability data, previous supply record, etc.) and are included on the PMI preselected list, are invited to bid or quote.

Rapid Diagnostic Tests

The World Health Organization (WHO)/the Foundation for Innovative Diagnostics (FIND) issued a guidance paper detailing recommendations for the selection of RDTs based on the first two

rounds of the WHO/FIND Product Testing results. It was decided in consultation with PMI that the project would issue a new expression of interest (EOI) during the period of this report. The EOI was published in October 2010, and responses were evaluated by TO3, FHI 360, and PATH. Seven manufacturers were selected on the basis of meeting the technical criteria defined and the performance of the RDTs under Round 2 of the WHO/FIND product testing. The WHO/FIND lot testing report can be found in Appendix C, and the current list of selected manufacturers can be found in Appendix D.

Long-Lasting Insecticide-Treated Bed Nets

In accordance with our market review policy, we issued a call for expressions of interest from LLIN manufacturers in May 2011. We were interested in expanding our sourcing base following the entry of new manufacturers into the LLIN marketplace. The results of the EOI are summarized in the preselected LLIN manufacturers list in Appendix E.

Challenges and Innovations

The demand for ACTs, primarily Coartem® (AL), but also to an extent Winthrop® FDC AS/AQ has grown exponentially, particularly during the last four months of the financial year. PMI has been asked to fund an increasing number of "emergency" requirements where deliveries funded by other donors have been delayed for a variety of reasons. These factors have led to longer lead times, and discussions were held with Novartis during the first quarter of FY2011 to determine how we could be more responsive in meeting these demands.

A strategy was agreed upon that involves two tactical approaches. The first was that Novartis agreed to offer significant discounts for orders placed 12 to 16 weeks in advance of demand. This would assist in its production planning. The second was an agreement that TO3 would manage its own inventory of Coartem® at the UPS Roermond warehouse in the Netherlands to enable it to respond quickly to countries' emergency orders, obtain better pricing, and mitigate supplier production risk.

Zimbabwe

In April 2011, the project facilitated the procurement of a U.S.$1 million emergency shipment of ACTs to fill an identified funding gap and avert a central-level stockout of commodities.

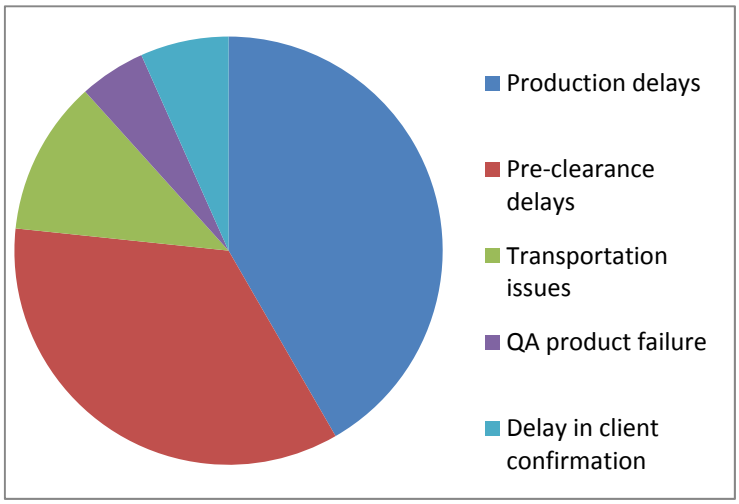
While it was originally envisioned that this stock would be held to respond to unforeseen emergency requirements, the tactical use of the stock has changed. In response to the huge increase in demand for ACTs during the second half of 2011, this has been operating as virtual stock and has been used to meet immediate country needs as it became available. Moving forward, we will continue to use the stock in this way (i.e., no product is actually warehoused) until the supply and demand patterns stabilize. We will continue to monitor the supply and demand situation in conjunction with other partners and donors.

In response to this challenging market dynamic, we continued to build upon our tactical approach of requesting countries to provide future ACT needs for six to 12 months in advance. This has enabled the project to further refine our demand planning tools and to provide manufacturers with as much advance notice as possible of future ACT needs. We are also working in close collaboration with other donors and procurement service agencies to coordinate the timing of orders and delivery needs. In this way we endeavor to avoid overloading production at any given time. It also has the benefit of phasing delivery arrivals in-country, thus further easing the burden on host-country supply and distribution facilities. (For a list of WHO prequalified vendors, see Appendix F.)

Procurement Scorecard and PMP Indicators

During the reporting period, the project has continued to monitor system performance monthly using the scorecard to show results. Given the high level of system performance last year, we raised the target levels this year from 80 to 85 percent or higher (green), from 50 to 65 percent (yellow), and from 50 to 64 percent or lower (red). During this reporting period, the orders available for shipping rate was 78 percent. The received in-country by desired receipt date was below the target performance level (66 percent).

Figure 4. Reasons Why Shipments were Delayed



The overall indicator results were at or slightly below the target levels, taking into account increased levels of procurement activity during this period. As shown in figure 4, a number of external factors affected the project's ability to meet target levels.

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

Table 1. PMP for the Procurement Process, October 1, 2010–September 31, 2011

Operational Area	Indicator	Status
Monthly system scorecard implemented	Monthly scorecard available	Available monthly
Orders shipped and received on time (data from October 2010 to September 2011)	% of orders available for shipping within 10 working days of contracted date with vendors	78%
	% of orders received by countries within a month of agreed date with the Mission	66%
Suppliers deliver ordered commodities to satisfy contractual requirements	Supplier fill rate (contracted quantity on time)	75.5%
Respond to emergency orders	Percentage of emergency orders responded to during the previous six months	11/11 = 100%

Efficient and Secure Delivery of Procured Commodities

Freight Forwarding

From October 2010 to September 2011, the task order successfully forwarded commodities to support malaria programs in 22 countries. Shipments included ACTs for Angola, Benin, Burkina Faso, Burundi, DRC, Ghana, Kenya, Liberia, Malawi, Mali, Mozambique, Senegal, Tanzania, Uganda, Zambia, and Zimbabwe. The freight team coordinated the in-country distribution of LLINs to several districts in Benin and for ACTs and RDTs in Angola.

Shipment execution tasks include freight estimate preparation, vendor door pickup, freight booking, shipment tracking, customs clearance, and final recipient delivery. The team will continue to update the country-specific shipping instructions in ORION, which is part of the project's management information system (MIS). The project continued to manually update shipment milestones in ORION. Shipment milestones provide shipment visibility to users of the MIS website.

To maintain cost effectiveness, avoid shipping delays due to obtaining insurance coverage, and ensure that TO3 shipments are adequately insured, the Indefinite Quantity Contract (IQC) and TO3 management teams worked with Zurich, John Snow, Inc.'s (JSI), insurance company, to continue our coverage for all TO shipments.

Angola

The project improved the integrity of the supply chain for the provincial delivery of PMI-funded commodities while decreasing costs and transport time. This was achieved through implementation of an innovative delivery approach in which commodities were consolidated in Europe to eliminate the need to contract a transit warehouse in Luanda. This lowered costs, minimized customs clearance efforts required on behalf of the embassy, and expedited the delivery of commodities.

Trucks being loaded directly from aircraft for immediate distribution to provinces, Angola.
USAID | DELIVER PROJECT. 2011.

Additionally, the project, for the first time, assumed responsibility for the distribution of project-procured LLINs to the household level in eight provinces.

LLIN distribution in Nigeria: arrival of the truck to the LGA, where smaller vehicles were already waiting to load the nets for delivery to the storage points in various villages.

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. Angola continues to be one of the most challenging countries for freight forwarding, however; during FY2011, the project continued its practice of obtaining exemptions from several Angolan government agencies, which

allowed the order to bypass the customs warehouse and be delivered directly to the recipient (also see inset above).

Shipment security continues to be a concern. The freight team worked with the task order management and in-country contacts to provide security escorts, when necessary.

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

Quality Assurance

Long-lasting insecticide-treated nets

From October 2010 to September 2011, the quality assurance team managed preshipment inspection and testing for 35 orders from three different suppliers. Crown Agents performed sampling and inspection of all consignments at the manufacturing sites, and FHI360 reviewed the inspection results and released the orders for shipment, concurrently with the chemical analysis.

Complete test reports were available within 90 days of sampling (median 20 days, ranging from 10 to 34 days, not including one order that required additional quality assurance information and discussion with the vendor). Certificates of Conformance for each consignment were made available shortly after. No product complaints were reported during this period.

Rapid Diagnostic Tests

There were 28 new orders for RDTs from five different suppliers during this reporting period. Test results were available within three to 19 days of sampling (median nine days), and all results were compliant.

During the reporting period, TO3 contracted with the Foundation for Innovative New Diagnostics (FIND) to support all lot testing of RDTs through the WHO laboratories. The contract went into effect at the end of January 2011. Lot testing for PMI included initial testing for 139 batches of RDTs and six-month stability testing of 239 batches, and was conducted by the WHO/FIND laboratories, Research Institute for Tropical Medicine (Philippines), and Institut Pasteur (Cambodia).

WHO-FIND has decided to reduce stability testing to one interval at 18 months after receipt of the samples (or 12 months for products with less than 18 months' remaining shelf-life, rather than testing every six months.

In Liberia, several cases of RDTs suffered water damage during storage. The local team took samples from the damaged cases to ensure that the RDTs still met specifications.

The team in Madagascar reported issues with the detection rate of low concentrations (< 200 parasites/microliter) of non *P. falciparum* species. The lots involved had all passed the preshipment testing. However, recent findings from the WHO/FIND/CDC product review discovered detection problems for *p-vivax* concentrations with acceptable performance for the *p-falcipurum* for the RDT product used in Madagascar. As a result, a different product was selected for the next procurement following recent WHO/FIND/CDC recommendations.

Pharmaceuticals

Coartem®

FHI360 reviewed the manufacturer's Certificates of Analysis for all batches of Coartem procured by TO3 (274 batches over 36 orders). Coartem does not require routine preshipment analytical testing because the product is regulated by the U.S. Food and Drug Administration (FDA). FHI360

continued to perform identity testing using Near-Infrared Spectroscopy and chemical testing for the amount of active ingredients.

Fixed-dosed artesunate/amodiaquine
During the reported period, a PMI policy change for the procurement of all subsequent orders of FDC AS/AQ, went into effect; specifically, all lots were to be tested at *preshipment*, and non-concurrent and confirmatory results were to be obtained prior to product release.

Six orders were tested using this policy. Test results were available between 15 and 50 days after sampling. The time depended strongly on the number of lots in a consignment. Sometimes delays occurred when testing for a previous large consignment had not yet been completed. All test results from these orders met pharmacopeial specifications.

Paracetamol injections
The severe malaria kits that were shipped to Burkina Faso contained Perfalgan® (paracetamol injections), manufactured by Bristol-Myers Squibb. This product is approved and regulated by EMEA (a Stringent Regulatory Authority).

Other pharmaceuticals
Other pharmaceuticals procured by TO3 include sulphadoxine-pyrimethamine, artesunate suppositories, quinine sulfate tablets, quinine and quinine resorcin injectables, artemether injectables, and glucose IV solutions. These products are not WHO prequalified and were tested preshipment, non-concurrent with shipping. All lots met compendial standards and were available between 15 and 58 days after sampling. The longest delay was caused by a longer-than-usual customs clearance.

Table 2. Performance Monitoring Plan Indicators for the Quality Assurance Process, October 1, 2010–September 30, 2011

Support Area	Operational Area	Indicator	Status
Quality assurance and quality control	Quality assurance and quality control procedures established and implemented	% of LN shipments with preshipment test reports available	100%
		Median time (in days from sampling) and range of days required for preshipment LN test reports to be available	20 days Range: 10–34 days
		% of RDT shipments with up-to-date stability test reports available	100%
		Median time (in days) and range required from sampling date for preshipment RDT test reports	9 days Range: 3–19 days
		% of pharmaceutical shipments with preshipment certificates of conformance	100%
		Median time (in days) and range required from sampling date for preshipment pharmaceutical test reports	28 days Range: 15–75 days

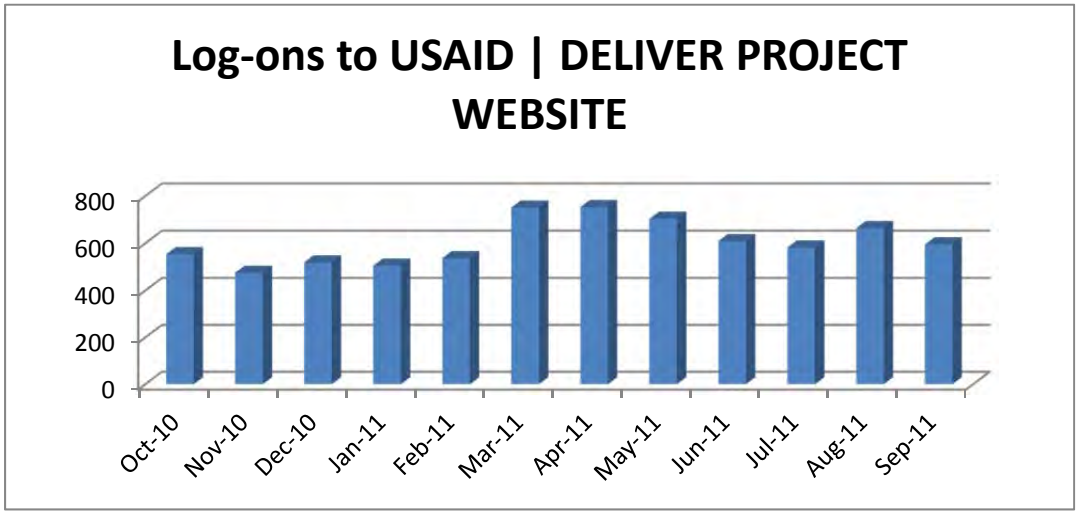
Supporting Commodity Procurement, Ordering, Reporting, Financial Accounts, Deliveries, and Management and Providing Commodity-Specific Information through the MIS System

The MIS team supported the start-up operations of Task Order 7, which transitioned during the year from Task Order 3, 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, and the status of shipments. The MIS is designed to be continuously accessible to authorized users from JSI, the USG, and partners, both centrally and in the field via a secure web-based user interface known as the USAID | DELIVER PROJECT WEBSITE.

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

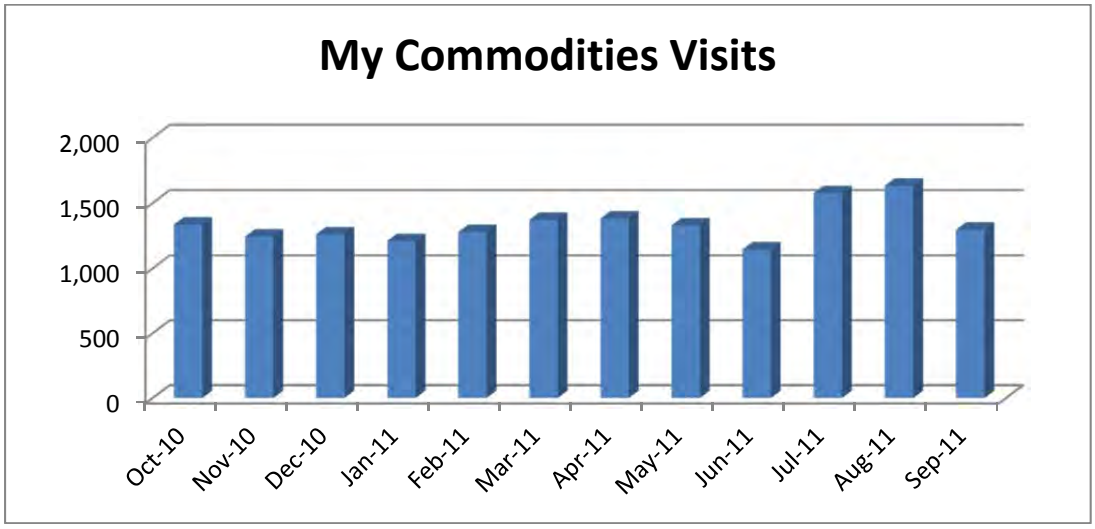
MIS reliability, availability, and ease of secure access are measured against an SLA (Service Level Agreement). The project met or exceeded all standards in the reporting year. Figures 5 through 7 show key MIS measurements from the past year.

Figure 5. Log-ons to Project Website



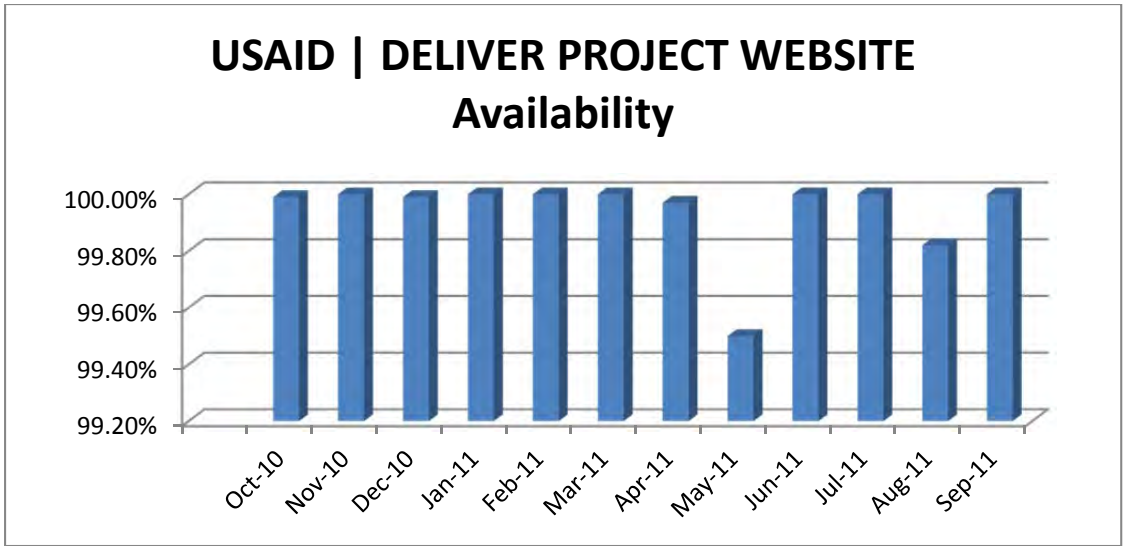
The USAID | DELIVER PROJECT WEBSITE is accessed by an average of about 600 unique log-on sessions per month. Each successful log-on and data access by an authorized user increases the count.

Figure 6. Website Visits to "My Commodities"



The "My Commodities Visits" shows the number of times per month authorized users have accessed the USAID | DELIVER PROJECT WEBSITE "My Commodities" web page to ascertain shipment or financial information. Average monthly visits total about 1,350, but the trend over the year is generally an increase in use. Shipment data are updated three times during each business day to provide the most current status.

Figure 7. Availability of Website



This figure measures the amount of time per month that the USAID | DELIVER PROJECT WEBSITE is available for access, excluding scheduled maintenance on the weekends. The standard, 99.5 percent availability, was met or exceeded each month during the reporting period, with only May (99.5 percent) at the standard.

Maintenance Work Completed

Task Order Set-up

The MIS team enabled the ORION ERP (Enterprise Resource Planning) system and the USAID | DELIVER PROJECT WEBSITE to support the transition to the new task order. This was

complicated by the need to transition over an extended period of time, while providing a combined view of orders and shipments, which meant that the systems for both task orders had to run simultaneously.

A new report was developed and implemented as part of the new task order initiation. This report provides detailed information on which countries will need future loans based on their current loan status, their estimated future funding and planned commodity use.

My Commodity Web Page

The "My Commodity" web page on the USAID | DELIVER PROJECT WEBSITE was redesigned to improve ease of use and display in real time the commodities shipped by country during the past year. This upgrade also included updating the "Job Aids" in place to assist web users navigate through the available reports.

Purchase Order History Report

A new report was added to the USAID | DELIVER PROJECT WEBSITE to show orders that are not yet shipped but do have a Purchase Order approved.

Shipment Status Code Additions

The "View Shipment" report on the USAID | DELIVER PROJECT WEBSITE was modified with two new status codes available for shipments to further define shipment status. The new shipment codes are "Requested," which denotes that an order has been entered into the ORION ERP system, but no Sales Order has yet been approved. The status, "Booked," reflects that a shipment is ready but has not shipped yet—and that the BOL (Bill of Lading) with planned route and legs is in place.

Project Work Completed

EDI Implementation Completed

JSI, in partnership with UPS and Logenix, implemented the EDI (Electronic Data Interchange) production software and operational processes to electronically transmit/receive data for warehouse goods receipt notification, warehouse packaging of shipments, pickup and delivery from third-party shipments, and shipment tracking legs. The implementation of the EDI's automated transmission of data has resulted in improved accuracy and has shortened freight-forwarder response times. Perhaps the most visible manifestation of this implementation is that the freight-forwarders will now provide interim shipment legs that will be displayed on the USAID | DELIVER PROJECT WEBSITE in the View Shipments area of My Commodities. This automation provides a framework and positions us for rapid growth in shipments for freight-forwarders. These changes were made operational for the Malaria Task Orders at no additional cost.

Conclusion

The MIS is a key support element for Task Order Malaria in providing management information and detailed reports to aid in procurement, supply chain management, and all other aspects of ensuring that the correct commodity is in the correct place, at the correct time, at the lowest possible price.

Table 3. PMP Indicators for the MIS, October 1, 2010–September 31, 2011

Support Area	Operational Area	Indicator	Status
Management information system	Availability of USAID | DELIVER PROJECT WEBSITE	Percentage of time the USAID | DELIVER PROJECT WEBSITE is available.	99.5 %
	Total number of visits	Total number of visits to the USAID | DELIVER PROJECT WEBSITE	16,061
	Number of log-ins	Total number of logins to the USAID | DELIVER WEBSITE	7,242

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 PMI. These actions ensure that commodities procured and delivered under Objective 1 activities, and through other key malaria partners, reach those in need. This section focuses on the critical areas of supply chain assistance: improving system performance, improving visibility of stock data at all levels, strengthening accountability for the products managed, bridging the gap between key supply chain entities (NMCPs and CMSs), and building capacity to sustain performance. It also highlights core products and country achievements organized by these key areas.

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

Guidelines for Managing the Malaria Supply Chain

The project completed and published a malaria-specific companion guide to the logistics handbook, focusing on those characteristics of the disease and products that affect supply chain design and implementation. The guidelines cover all components of the logistics cycle, including product selection, quantification, procurement, storage, distribution, inventory control, and end use. They are meant to be used by NMCP program managers, CMS managers, country offices, and technical assistance providers to help them better manage malaria supply chains through the development of PSM plans, system designs, and monitoring system performance. The guidelines are available on the project website.

Regional Meeting

In April 2011, TO Malaria held a regional meeting in Accra, Ghana, for project country offices and field staff. The meeting was field-centered, rich in technical discussions, and in south-to-south exchanges. It was an opportunity for the PMI COTR team to share its expectations and for the DELIVER field and DC-based staff to synchronize strategies. Participants found it to be extremely valuable and requested future opportunities to meet and learn from each other. In response, the project is likely to hold a second regional meeting in the upcoming fiscal year.

Country Highlights

Burkina Faso:

- The project provided technical and financial support to the NMCP and the Ministerial Committee for the countrywide bed net distribution for universal coverage. The project provided financial support to the central level for supervision visits during the LN distribution in five regions (Plateau Central, Sud Ouest, Cascades, Est, Centre Ouest) and participated in the supervision visits in six regions (Plateau Central, Est, Centre-Est, Centre, Centre-Sud, and Centre-Nord). The project was involved in all implementation activities during the national LN distribution campaign. The supervision team provided instructions to the LN distribution teams to implement the guidelines developed by the central level with technical support from the project for better organization of the distribution sites. Out of 8,105,634 LNs received from all the partners and Government of Burkina Faso, 7,621,088 LNs were distributed to 95.86 percent of the households in the country—representing approximately 15 million persons protected with LNs. The MOH/NMCP has decided to distribute the balance of the LNs through routine distribution to pregnant women.
- The project helped to mobilize funding to fill the gap of ACTs for 2011; although ACT provisions were not in the FY10 MOP, at the request of the NMCP, PMI agreed to reprogram commodity funds to purchase ACTs to fill the gap. The project responded by placing an emergency order for ACTs. Additionally, as per the project's recommendations, the NMCP is also advocating for a government budget line to support the procurement of malaria commodities in the future.

Ghana:

- In line with the current NMCP policy to achieve universal coverage of LLINs in Ghana, the project has provided technical and logistics management support for the distribution and hang-up of LLINs in collaboration with other partners. The project, in particular, facilitated the transportation of 1,863,450 LLINS from the Central Medical Stores to districts in the Eastern and Volta regions for the distribution and hang-up campaigns.

  The project led a team of partners to carry out a post-LLIN hang-up campaign validation after each campaign exercise. The validation exercise seeks to document the quantities of LLINs hung and to verify all documentation related to the management and distribution of the LLINs; a report on the validation is produced and shared with partners. Overall, the validation exercises have indicated that no net or other campaign supplies are diverted for other purposes.

USAID | DELIVER PROJECT. 2011.

USAID | DELIVER PROJECT's program officer, together with the NMCP, is checking the quantity of the USAID/PMI-funded ACTs delivered at CAMEG (Central Medical Stores) in August 2011.

Madagascar:

- The project worked with the NMCP to expand access to malaria services through NGOs. To encourage confirmed diagnoses, the NGOs received a refresher training and capacity-building support in malaria case management and in adult learning methodology. During the training, several topics were reviewed: malaria case management, LMIS, stock management of RDTs, and diagnosis quality assessment. In total, 150 out of 190 health agents from four partner NGOs received training and capacity-building support in these areas. The project drafted post-training tools for the NGOs, including a case management job aid, an RDT-use job aid, and the adapted RDT manual for Madagascar. The NMCP and other partners of the project made recommendations and gave feedback on these documents before they were published.

- The project supported the LLIN mass distribution campaign in Madagascar. It was completed on November 27, 2010, in all 71 districts of Madagascar. The project procured 2,585,000 LNs and distributed 2,579,720 LNs in 32 districts in seven regions. The project team took part in supervising distribution in the north and the south and compiled observations on lessons learned, challenges, and areas for improvement. During the campaign, the project also supervised the collection of used LLINs in the six targeted districts for the first-ever LLIN recycling pilot project. A total of 22,559 used bed nets from 34 collection sites were retrieved. As expected, most of these used LNs were from the 2007 campaign: 50 percent of them were made of polyethylene, and the other 50 percent were made of polyester. The bed nets were compacted and loaded into containers and shipped to Trex—a U.S.-based plastics recycling company—to determine the nets' material properties for manufacturing into a new product. Trex was able to use the polyester nets and recycled them into a biocomposite plastic-wood board.

Nigeria:

- The project provided logistics support to NMCP in supply chain functions related to the distribution of LLINs at the state and local government area (LGA) levels, including forecasting needs, training, warehouse assessment, and transport of supplies. The project, which was responsible for the Logistics Workstream of the Expert Technical and State Support Teams (SSTs) during LLIN universal coverage campaigns, conducted training at the state level for 872 logistics operators for campaigns in 28 states plus FCT. A total of 16,294,606 LLINs were distributed in over 18,000 distribution points across the states.

USAID | DELIVER PROJECT. 2011.

Distribution of LLINs to Itara in Cross River State, Nigeria. USAID | DELIVER PROJECT. 2011.

- The project averted the potential waste of several months' supply of medicines procured through YGC (Yakubu Gowon Centre for National Unity and International Cooperation) but "stranded" at the state capitals because of the lack of funds for last-mile distribution. The project supported the distribution of 311,100 doses of short-dated ACTs from state Central Medical

Stores to 1,030 service providers in six states. This support informed deliberations by NMCP and its partners and facilitated the initiation of actions to remedy the situation.

Zambia:

- The project implemented long- and short-term intervention strategies to improve product availability, such as:
  - Initiated discussions that will ultimately lead to the development, refinement, and installation of customized LMIS software with increased capacity to effectively manage data supporting the logistics systems for essential drugs, including antimalarial medicines and RDTs.
  - Conducted a regular review of the Supply Chain Manager Software, PipeLine database, and MSL reports to confirm that approved facilities have ordered or received antimalarial medicines, LLINs, and/or RDTs, as appropriate.
  - Conducted data collection at a select sample of sites at the lowest level of the system and captured information on actual program implementation—in particular, connected diagnosis patterns with treatment patterns.
  - Conducted routine monitoring and evaluation, in collaboration with MOH staff; provided routine updates to the M&E database, and analyzed data to improve monitoring of the logistics system.
  - Instituted immediate follow-up action(s), as needed, to ensure that antimalarial drugs and RDTs are being distributed based on availability and need.

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

HMIS/LMIS Data Analysis

In FY11, TO Malaria conducted an analysis of HMIS (health management information system) and LMIS data in one province in Zambia. As one set of data (HMIS) tracks patients treated, and the other tracks products used to treat those patients (LMIS), the two data sources should theoretically align—meaning that the number of cases of malaria treated should match the quantities of ACTs dispensed. However, as this study showed, there are often discrepancies between HMIS and LMIS data. The team found that the data almost never matched, either across facilities over time, within one facility over time, or across facilities during a single period. This misalignment is partially due to different procedures and guidance regarding how HMIS and LMIS data are collected. The final report produced on the HMIS/LMIS data analysis looked at differences between the data, investigated the root causes of discrepancies between the data, and proposed solutions for managing those discrepancies. Additionally, the report identified options to better link these data and use them for decisionmaking. The task order will continue to expand on this activity in the coming fiscal year, by using the methodology developed in the Zambia study and applying it to other countries.

End-Use Verification

TO Malaria implements the End-Use Verification activity in PMI countries with a project office. This activity provides improved visibility of malaria systems in-country, especially at the health facility level, by using survey methodology to capture and report data pertinent to the supply and

management of malaria products, as well as information about how malaria is being diagnosed and treated.

Over the last year, TO Malaria continued quarterly rounds of data collection and reporting in Ghana, Tanzania, and Zambia and added two new countries—Malawi and Mozambique. Malawi had previously carried out the End-Use activity under the MSH/SPS project, but in FY 2011, responsibility for this activity transitioned to the project. To bring efforts in Malawi in line with the activity in other PMI countries, the Malawi tool was revised and the report standardized, with data collection efforts beginning under the project in January 2011. For Mozambique, the project worked closely with NMCP and the Central Medical Stores (CMAM), to integrate the End-Use activity with MOH malaria supervision efforts, successfully initiating the activity for the first time in September and October 2011. These data collection efforts were the culmination of much preparation on the part of the country project office, as well as TO Malaria staff at headquarters (HQ), as the MOH in Mozambique had previously not allowed the activity to proceed.

Findings from the End-Use activity are routinely shared with ministries of health and in-country stakeholders, and have been used throughout this year to contribute to a number of presentations related to ACT availability at the country level. The project also investigated alternative and additional ways that the End-Use findings could be analyzed, carrying out a longitudinal analysis of the End-Use findings around ACT availability in Ghana using the data that have been collected there since 2009.

Ghana

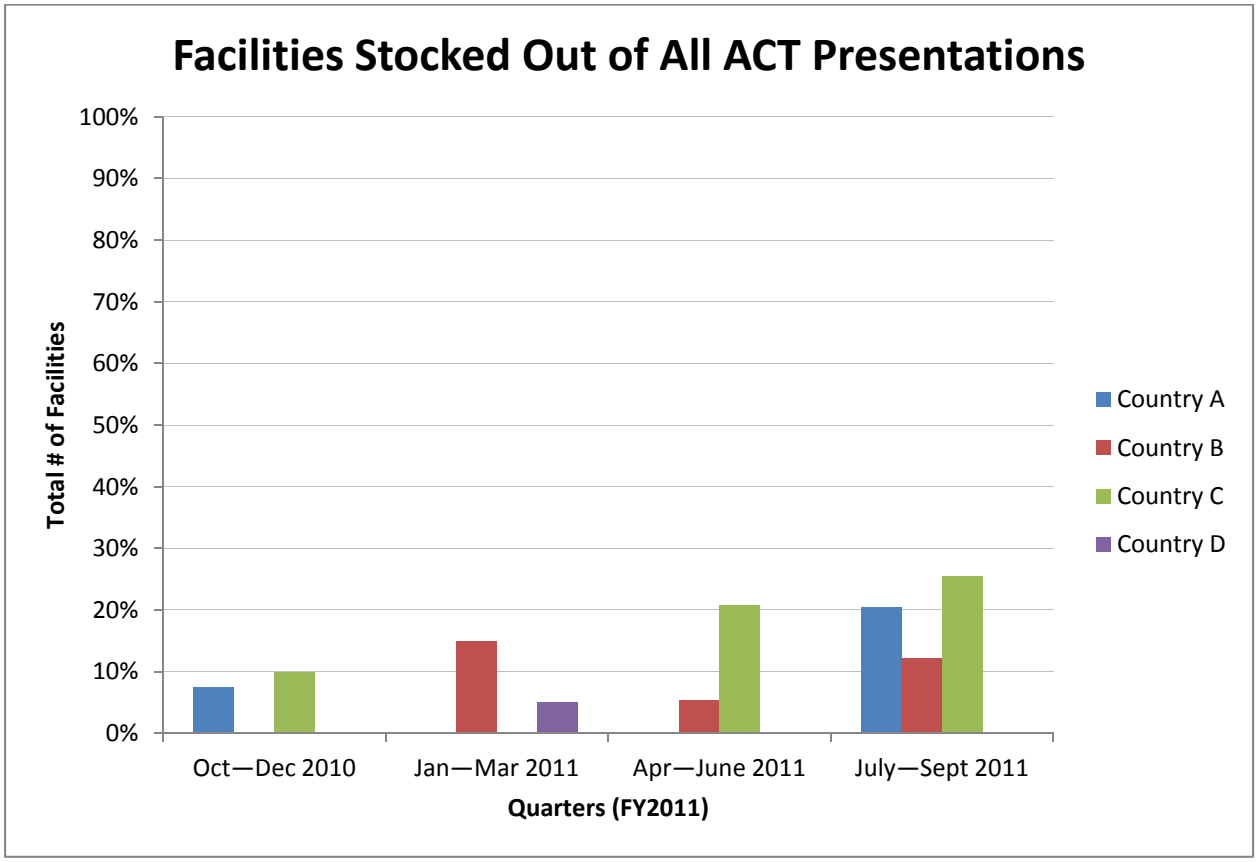
The End-Use activity has been ongoing in Ghana, where nine rounds have been conducted to date. Based on the results of the round eight data collection, it was indicated that in the Volta region, 95 percent of facilities had available stock of SP, 61 percent had available stock of RDTs, and 37.5 percent had at least one ACT (out of four presentations) in stock. In addition, it was found that 62 percent of personnel involved in the management of malaria commodities had received training in inventory management.

Findings from the End-Use activity have been presented at various forums, including peer review meetings of commodity managers. Some direct actions that have come about as a result of the tool include:

- Training of staff with low skill levels
- Rehabilitation of the medical stores in the Volta region
- Use of the tool to assess the impact of logistics training that is offered to commodity managers in health facilities

In March and May of this year, the project met with PMI and MSH/SPS to review the methodology for the activity, including sampling strategies, analysis, and reporting. Discussions are ongoing concerning revisions for the coming year, with a strategy for End-Use "reinvigoration," as outlined in the TO7 FY12 work plan.

Figure 8. Facility-level ACT Availability as Reported by the End-Use Tool



*Information about the total number of facilities stocked out for each quarter is located in Appendix G.

PPMRm

The Procurement Planning and Monitoring Report for Malaria (PPMRm) provides data on central-level stock availability for malaria commodities, including ACTs, SP, and RDTs. The PPMRm was first piloted in October 2008 in ten countries in sub-Saharan Africa. It has since expanded to 18 countries, including nine Nigerian states.

Initially the report captured data on ACTs only. However, during the first quarter of FY11, two new commodities were added to the PPMRm—RDTs and SP. Additionally, one non-focus country—Burundi—was added. The second quarter of FY11 saw the addition of two focus countries—Democratic Republic of the Congo (DRC) and Nigeria. As Nigeria does not hold central-level stock, it is providing data for each of the USAID-supported states. During the third quarter, Benin was omitted from the report due to the closure of the field office. In the fourth quarter, the report included the addition of PMI's newest focus country—Zimbabwe. Of the 18 countries reporting for the PPMRm, TO3 is responsible for collecting data in nine. The project is still unable to access data from Rwanda and Madagascar.

During the fiscal year, the project engaged in efforts to improve the effectiveness of the tool and to streamline the report to better respond to PMI's needs. This specifically included redesign of the data forms for all countries and creation of a new reporting format. The new report and data forms will be rolled out in the first quarter of FY12. It is likely that the PPMRm will continue to evolve in the foreseeable future, as more countries and products are added to the report, and as the need to

capture quality data on central-level stock status, procurement, LMIS, and other critical information on in-country supply chains grows increasingly more important.

The tool continues to play a critical role in identifying current or impending shortages, stockouts, and expiries. During FY11, PMI used the PPMRm to address stockout situations in a number of countries through the provision of critical emergency shipments.

Figure 9. Central-level Stockouts of AL as Reported in the PPMRm

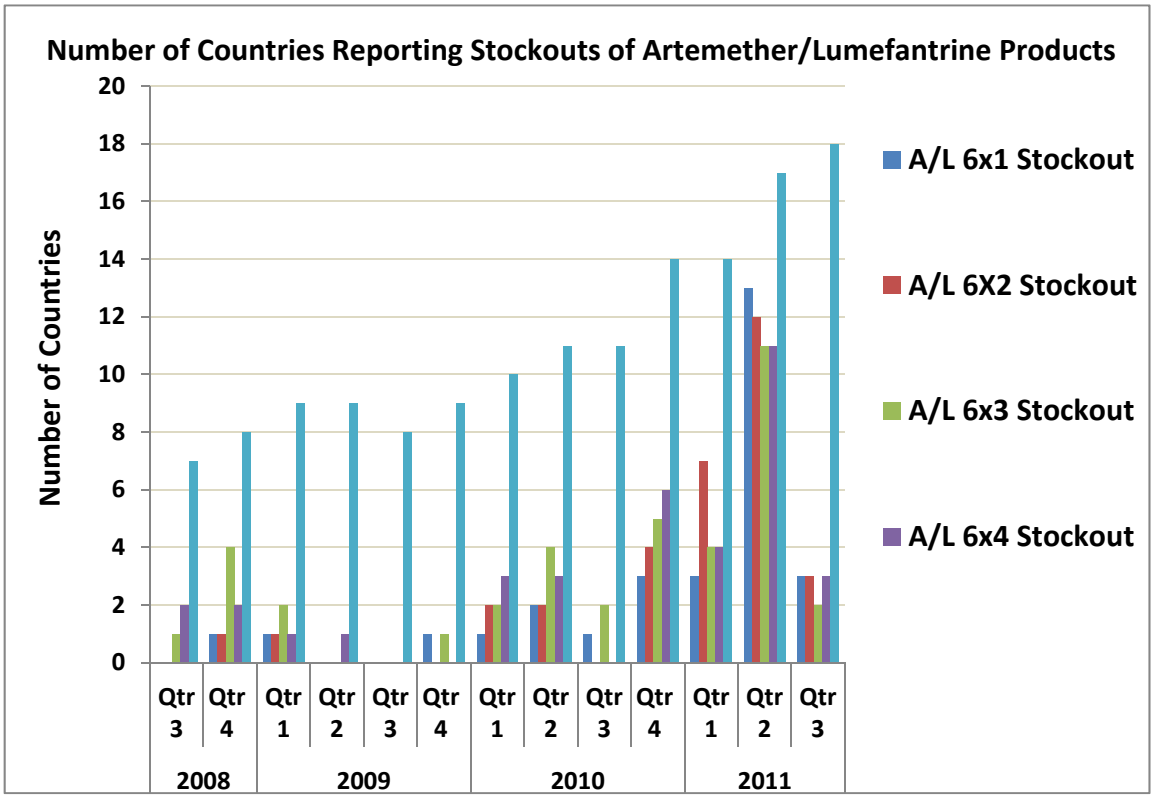
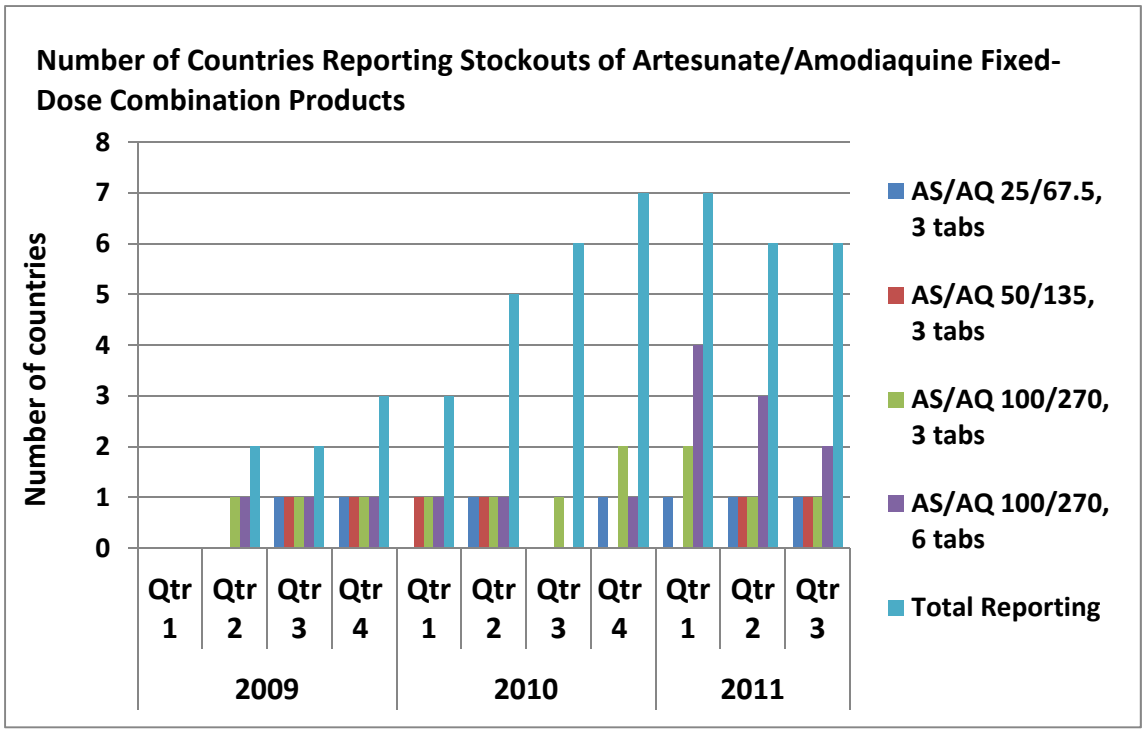


Figure 10. Central-level Stockouts of AL as Reported in the PPMRm



Country Highlights

Burkina Faso:

- During FY11, the NMCP developed a malaria database, with financial support from Global Fund Round 7. The database is designed to capture statistics/logistics data from health facilities, such as number of cases treated with an ACT, number of cases confirmed with an RDT, number of ACTs/SP doses dispensed, quantities of RDTs used, etc. With the nationwide roll-out of the database, there is a hope that true consumption data will become available that can be used for decisionmaking at the national level. The database will be an important tool during quantifications and for adjusting the forecast throughout the year to align with the quantities of ACTs being dispensed at the health facility level. It is also useful for determining whether treatment guidelines are being adhered to.

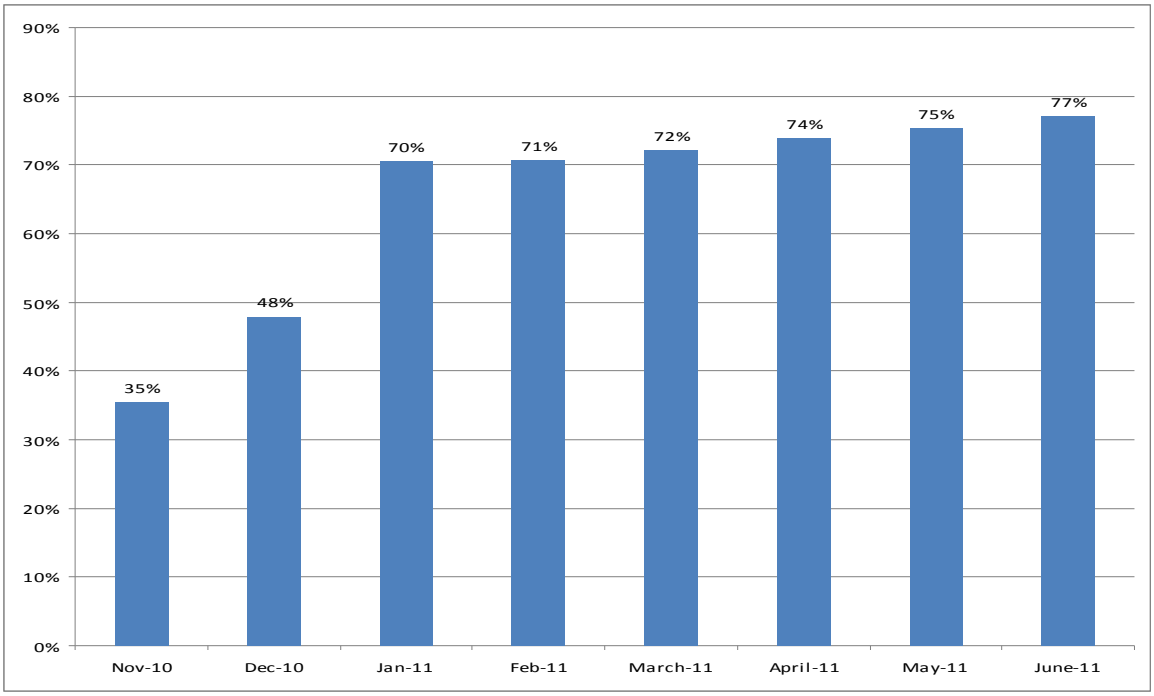
  With funding from the project, 63 district data managers, 13 regional data managers, 12 hospital data managers, 12 regional coordinators of local associations, and 13 regional pharmacists were initially trained in the use of the malaria database. Logistics and statistics data have started flowing through the supply chain. A data manager at the district level enters data sent from the health facilities and the district stores. Those data are entered into the malaria database and sent via Internet to the central level.

  The project provided support to the NMCP by leading a review of the malaria database and working with the malaria database designer to integrate data managers' observations that were collected during supervision and monitoring visits. Subsequently, the project provided financial and technical support to the NMCP to update all of the district, regional, and hospital data

managers on the revised version of the malaria database. A total of 100 people were trained in September 2011 on the revised version of the malaria database.

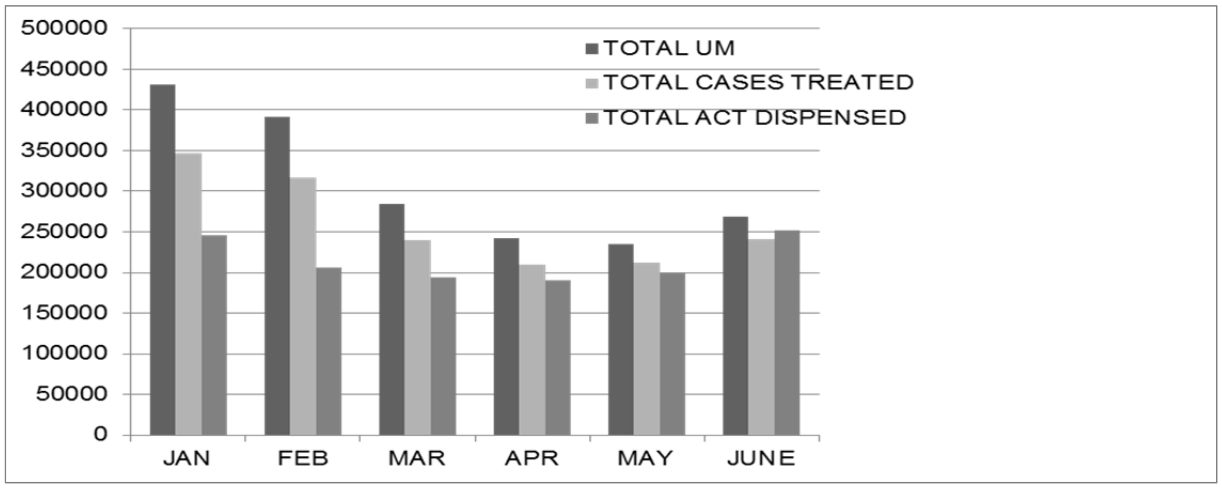
The project assisted the NMCP in analyzing reports from the facilities submitted through the malaria database (from October–December 2010, January–March 2011, and April–June 2011). The results of the analysis indicated that the reporting rate of facilities has improved since the database was implemented in December 2010 (see figure 10). Additionally, this analysis helped to identify priority districts for action (i.e., to improve product availability, case management, data quality, and reporting). The project shared the findings of the data analysis—such as facility reporting rates, commodity stockout rates, consumption data, number of malaria cases treated with an ACT versus the number of confirmed cases, districts with identified problems, etc.—with other partners involved in malaria activities in-country.

Figure 11. Facility Reporting Rates in Burkina Faso, October 2011–June 2011



An important finding from analysis of the data is that there is a discrepancy among total number of cases of uncomplicated malaria, the number of cases treated, and number of ACTs dispensed (see figure 11). The project recommended that the NMCP integrate those findings into routine supervision to better understand these imbalances and be able to address them.

Figure 12. Number of Uncomplicated Malaria Cases (UM), Number of UM Cases Treated, and Number of ACTs Dispensed in Burkina Faso, January 2011–June 2011



Liberia:

- The project, in conjunction with the NMCP, the NDS, and SCMU, reviewed, revised, and printed LMIS forms for all health facilities in Liberia. In Montserrado County, the forms were distributed to all health facilities, and personnel from each facility received on-the-job training on how to fill out the forms properly. During the first round of reporting, 79 percent of facilities reported. Montserrado contains approximately 40 percent of Liberia's population; therefore, facilities that serve over one million people are able to request treatment when needed. Plans to work with partners to roll out the remaining forms are in place and are being implemented.

  As a first step in computerizing Liberia's LMIS, county-level personnel received the *Supply Chain Manager* software and training materials to assist in supply chain management; central-level personnel received *PipeLine* and *Supply Chain Manager*. Use of this software will enable counties to send their commodity data to the central level, and enable personnel at the central level to consolidate all of the data. This will create a holistic perspective on the supply chain, allowing decisionmakers at the central level to divert supplies from overstocked counties to understocked counties.

Madagascar:

- The project and WHO each prepared separate assessments of the completed recycling project. From May 28 to June 17, 2011, Focus Development Association, the principal investigator, conducted a field visit in two target districts (Betioky and Tsihombe) and carried out 24 individual interviews, 11 group interviews, three focus groups, and eight informal group discussions. The interviews took place at the household level. It was concluded from the discussions and interviews that:

  – The population is ready for the collection of old LLINs, but the best time for collection is during the same time that new LLINs are distributed.

  – The cooperation of the local authorities—including Fokontany chiefs, community workers, and mayors—is crucial to the success of the distribution and collection campaign.

- Selecting the appropriate key messages is very important for the collection.
- The same transportation used for distribution can be used for collection.
- Local authorities should distribute messages prohibiting the use of LLINs for fishing and promote the use of LLINs for protection against mosquitoes only. The regional department of fishing is leading this activity, in collaboration with the health regional department and the environment department.
- In the Ambanja district, plastic waste is already collected and stored in a hangar for possible recycling. The environmental department is soliciting the team from WHO/SAICM for contact information about potential industries interested in these raw materials.

Nigeria:

- During the year, the project developed, in collaboration with other stakeholders, a logistics tracking tool for monitoring the delivery to states by first-line buyers of ACTs procured under the AMFm mechanism. The full-scale application of this tool will yield valuable logistics data that will give NMCP and other stakeholders a more complete picture of the overall supply and distribution of ACTs in Nigeria, as well as a means of monitoring the distribution of ACTs in the private sector.

  The project correctly identified pending severe, widespread, public sector stockouts of ACTs well in advance and advocated for action. This was done through the provision of technical and financial support to the NMCP twice in FY11 to analyze the stock status of ACTs. The data that were collected and analyzed helped to inform the development of supply plans, and to facilitate last-mile distribution of commodities in all states. The exercise also provided more visibility into the supply chain and enabled NMCP and other partners to see the stock status of antimalarials, which were virtually stocked out. The NMCP, the project, and other partners used the data to advocate for increased short-term support from the Government of Nigeria and donors, which are now looking into ways to fill the pipeline.

Tanzania:

- To improve visibility of the movement and availability of ACTs within the supply chain, the project, in coordination with the NMCP, performed ACT commodity tracking in the Dar zone where data were collected from 25 percent of the total number of health facilities in each district (approximately 107 facilities). This activity is part of a broader effort to enhance the monitoring efforts for PMI-funded ACTs, which include developing a comprehensive national list of facilities, conducting routine physical counts of malaria commodities in all zonal and central Medical Supplies Department (MSD) warehouses, assessing the Report & Requisition (R&R) forms, and analyzing the issues and receipts data to determine alignment.

  The project conducted field visits to 30 districts within the Tabora, Tanga, and Mbeya regions to perform a physical inventory count of all antimalarials, assess the Report & Requisition forms submitted to the Medical Supplies Department (MSD) for March 2011, and analyze the available stockkeeping records to improve data visibility regarding malaria-related commodities through the ILS.

Zimbabwe:

- The project assisted the Ministry of Health and Child Welfare (MOHCW) revise the ZIP/PHCP (Primary Health Care Packages) SOPs, and training curricula, in line with a change from the paper-based to AutoDRV for collecting essential logistics data in the field (including TB and malaria). The project conducted the AutoDRV roll-out training for MoHCW ZIP/PHCP delivery team leaders. Sixty-three ZIP/PHCP staff was trained during the period under review. The training will enable staff to use the upgraded AutoDRV as the main system for collecting quality logistics data for malaria, TB, and other essential medicines and medical supplies included in the PHCP.

USAID | DELIVER PROJECT. 2011.

Cruising along the river with LLINs to deliver to the communities in Nigeria. USAID | DELIVER PROJECT. 2011.

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

Country Highlights

Malawi:

- An augmented system was designed and rolled out, as per the request of the USAID Mission in October 2010, with the objective of achieving commodity security for U.S. Government (USG)-procured products, starting with malaria commodities (ACTs, SP, RDTs). As a result of the good performance of the augmented system during the first quarter of the past FY, Global Fund recommended that the malaria commodities it procures for Malawi should be distributed through the same system as well. When commodities and fuel are available, the augmented system achieves countrywide distribution of commodities to all facilities within two weeks. When these conditions are met, there is a resulting reduction in stockouts. Along with malaria commodities, the augmented system distributes USG-procured family planning commodities such as male condoms and implants (Jadelle). Commenced in December 2010, the augmented system has successfully performed nine countrywide distributions and has successfully distributed 6.3 million AL treatments and over 1 million RDTs.

Tanzania:

- To ensure that malaria commodities are distributed to operational facilities, the project, in collaboration with the Ministry of Health and Social Welfare (MOHSW), has started consolidating and cross-checking the list of facilities operating in the Tanzania public sector that should be receiving commodities from MSD, according to NMCP.

Bridge the Gap between NMCPs and Supply Chain Operators (e.g., Central Medical Stores) to Improve Core Supply Chain Functions (i.e., Quantification, Monitoring and Supervision, and Use)

Country Highlights

Mozambique:

- As a result of a temporary hold on the disbursement of Global Fund Round 9 funding, the project stepped in to provide technical assistance to the subgroups (for ACTs and RDTs) of the Medicines Technical Working Group to conduct a complete data collection and pipeline analysis exercise, a revision of the assumptions upon which the quantification was based, and an update of the supply plan using PipeLine software.

  It has been decided that the subgroups, with support from both DELIVER and SCMS, will become permanent mechanisms, reinforcing collaboration between the programs and the Central Medical Stores, and renewing credibility of the system's capacity to manage high-volume/high-value products to avoid such disruptions in the future.

Tanzania:

- The project, in collaboration with the Medical Stores Department (MSD) and the National Malaria Control Program (NMCP), facilitated immediate distribution of antimalarials to the Mwanza zone and Kagera region, which had experienced a severe localized outbreak of malaria. The project facilitated and financed the distribution of antimalarials to several districts within these regions whose citizens were suffering from the malaria outbreak.

Once systems meet performance levels, build local capacity to sustain system performance

Country Highlights

Tanzania:

- The project successfully conducted the Zanzibar Integrated Logistics System (ILS) training in Pemba, where the pilot facilities are now switching from a kit system to an ILS to be rolled out using an iterative-phased approach to gauge and manage functionality. A technical assistance provider conducted training at CMS to train staff in the use of mSupply, a simplified warehouse management system. As a result of the training, the Zanzibar Ministry of Health has requested extended technical support; the project is responding accordingly.

Zambia:

- Collaborated with the Ministry of Health/National Malaria Control Centre (MOH/NMCC), Medical Stores Limited (MSL), USAID | DELIVER PROJECT Task Order 4, and other cooperating partners to implement the roll-out of the Essential Medicines Logistics Improvement Program (EMLIP) for essential drugs, a pilot undertaken and evaluated last year. Malaria commodities—such as ACTs and RDTs—are being managed through this system in the 16 districts in which it is currently operating. In this system, requirements for each individual health facility are prepacked at MSL and distributed through the districts as a cross-dock to the facilities. The project conducted refresher in-service trainings in the EMLIP for new staff or

staff in new sites under districts already covered in the new and approved system. A total of 1,274 individuals were trained in the supply chain management of essential drugs, including antimalarial medications and RDTs.

Table 4. PMP Indicators for Objective 2, October 1, 2010–September 31, 2011

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 percentage of facilities that experienced a stockout of a product expected to be provided or issued by that site on the day of the visit	See Appendix G
		Country stockout rate: the percentage of countries experiencing a stockout at the central warehouse(s) at the time of reporting	See Appendix G
		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 service delivery points (SDPs) in the country	**6/11 = 55%** For a full list of the countries and further explanation about the LMIS, see Appendix G.
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 TA needs: % of STTA trips per Mission's/PMI | Washington ad hoc request conducted on time	**Total: 3/3 = 100%** Liberia had one timely response, and Zimbabwe had two timely responses.
Long-term technical assistance (LTTA)	In-country supply chain strengthened or improved	Quantity of antimalarial commodities (LNs, SP tablets, ACT treatments, RDTs) distributed in-country using funds obligated to USAID | DELIVER PROJECT	Angola: - 1,637,500 RDTs - 630,000 LLINs - 3,770,010 ACTs Benin: - 500,000 LLINs Burkina Faso: - 35,000 LLINs DRC: - 3,780,000 ACTs - 500,000 RDTs

Support Area	Operational Area	Indicator	Status
			Ghana: - 1,863,450 LLINs Kenya: - 2,630,400 ACTs - 547,800 RDTs Liberia: N/A Madagascar: - 2,579,640 LLINs - 382,956 RDTs Malawi: - 5,570,040 AL treatments - 238,350 AS/AQ treatments - 551,175 RDT kits Mozambique: - 6,620,730 ACTs Nigeria: - 18,544,201 LLINs - 311,100 ACTs Rwanda: N/A Tanzania : N/A Uganda: - 1,290,000 ACTs Zambia : N/A Zimbabwe*: - 748,877 ACTs - 864,568 RDTs - 250,430 tablets of SP
		Percentage of countries receiving field support TA funds reporting on supply chain performance via the End-Use Verification activity	**5/9 = 55%** Burkina Faso: No Ghana: Yes Liberia: N/A Madagascar: No Malawi: Yes Mozambique: Yes Nigeria: No Rwanda: N/A Tanzania: Yes Zambia : Yes Zimbabwe: No For further explanation, see Appendix G.

Support Area	Operational Area	Indicator	Status
		Number of individuals trained in the supply chain management of malaria commodities	**TOTAL: 8,376** Burkina Faso: 4 Ghana: 2,422 Liberia: 133 Madagascar: 28 Malawi: 129 Mozambique: 30 Nigeria: 2,306 Rwanda: 1,556 Tanzania: 431 Zambia : 1,274 Zimbabwe: 63
		Percentage of countries with field support TA funds reporting central-level stock levels of select malaria products in quarterly stock monitoring reports	**8 /11 = 82%** Burkina Faso = yes Ghana: yes Liberia: yes Madagascar**: no Malawi: yes Mozambique: yes Nigeria: yes Rwanda**: no Tanzania: yes Zambia : yes Zimbabwe: yes
		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)	**TOTAL: 10/11 = 90%** 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: Percentage of countries that have developed supply plans for PMI funded commodities*	**TOTAL: 9/11 = 82%** Burkina Faso: yes Ghana: yes Liberia: yes Madagascar: no Malawi: yes Mozambique: yes Nigeria: yes

Support Area	Operational Area	Indicator	Status
			Rwanda: no Tanzania: yes Zambia: yes Zimbabwe: yes
		Number of technical reports or tools developed to support malaria supply chain performance	**TOTAL: 65** Core: 10 Burkina Faso: 2 Ghana: 1 Liberia: 12 Madagascar: 21 Malawi: 9 Mozambique: 1 Nigeria:4 Rwanda: 0 Tanzania: 3 Zambia: 0 Zimbabwe: 2

*In-country distribution is supported by a number of partners; it is challenging to ascertain what portion of these commodities distributed was funded by the project.

** TO3 is responsible for collecting PPMRm data in ten countries. As previously stated, the project cannot access data for Rwanda and Madagascar. As a non-malaria country, Zimbabwe has not yet been asked to report on the PPMRm.

Objective 3: Improve the Global Supply of Malaria Commodities

Strengthen International Collaboration

Participation in International Malaria Control Forums

Roll Back Malaria Partnership and the Procurement and Supply Chain Management Working Group

As a member of the Roll Back Malaria (RBM) Partnership and the Procurement and Supply Chain Management Working Group (PSM WG), TO3 participated in the PSM WG meeting in February 2011. Of particular interest and concern to TO3 and PMI were the discussions on RDT quantification; FDC AS/AQ quantification, especially for the lower two weight bands; and the impact of AMFm on production capacity and supply chain for AL and FDC AS/AQ. As a result of the meeting, TO Malaria was asked to co-chair the PSM Bottleneck work stream.

TO3 participated in a second PSM WG meeting on September 27–28, 2011. The task order presented on plans for the PSM Bottleneck work stream and solicited input for future activities.

Global Fund to Fight AIDS, Tuberculosis and Malaria Market Dynamics and Commodities Technical Meeting

TO3, on behalf of PMI, presented the summary findings of the project's detailed study of the LLIN procurements, to date, at the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) Market Dynamics and Commodities Technical meeting in Copenhagen in February 2011. The analysis explored the factors that affected the unit cost of LLINs and whether the project needed to consider a different procurement model from that used to date to ensure that TO3 is obtaining the best value for its money for LLIN purchases.

Alliance for Malaria Prevention Activities

Task Order 3 sent a participant to the Alliance for Malaria Prevention (AMP) partners meeting in Geneva in February 10–11, 2011. The theme of the meeting was "Expanding the ownership and use of mosquito nets." At the meeting, the project presented the preliminary results from the Madagascar LLIN recycling pilot.

Tropical Medicine Annual Conference

Task Order 3 also sent participants to the annual tropical medicine conference in November 2010. During this conference, the project presented two posters. One was on the essential medicines logistics system pilot in Zambia, and the other was on the 2010 Nigeria LLIN mass distribution campaign. The project also participated in one panel presentation on in-country distributions in Angola.

Health and Humanitarian Logistics 2011

The project presented on supply chain management for malaria at the Health and Humanitarian Logistics Conference held at the Georgia Institute of Technology. The conference included speakers from academia, UNICEF, WHO, World Food Program, Federal Emergency Management Agency (FEMA), American Red Cross, Oxfam, NGOs, and the commercial sector.

Conduct Analysis of Demand, Supply, and Pricing Issues Affecting The Global Market For Malaria Products

Participated in Global LLIN Market Analysis

TO3 provided data and participated in an interview with Result for Development (R4D) as part of its LLIN Market Dynamics Project. R4D is assessing whether opportunities exist to enhance the LLIN marketplace. In this project, R4D will seek to determine first if there are opportunities for greater efficiencies in the LLIN market and, if so, to develop a global road map for how those improvements can be achieved. R4D is currently exploring the three key levels of the marketplace—demand (countries), supply (manufacturers), and global intermediaries (global financiers, normative bodies, NGOs, etc). Based on its preliminary analysis, R4D found that TO3 was able to secure more competitive prices than other major funding or procurement agencies.

During this year, the project also updated its analysis of the LLIN market and key cost drivers.

Develop Tools to Address Common Supply Chain Bottlenecks

Quantification of ACTs and RDTs

The project participated in the development of a manual for quantifying ACTs and RDTs. MSH led the effort, with input from the project, RBM, Global Fund, PMI, the World Bank, MMV, and FIND. The project wrote the supply planning section of the manual, provided case examples, and reviewed and commented on multiple versions of the manual. In addition, MSH drew heavily from previous project quantification guidance. The final draft of the manual is currently ready for testing, and the project is working with its country teams to identify potential countries to pilot the manual.

Health Care Waste Management of RDTs

As countries begin implementing WHO's case management guidance that all malaria cases should be diagnosed using either microscopy or an RDT, the use of RDTs, especially at the peripheral level, will increase dramatically. To support the expanding use of RDTs, TO3 prepared a guide on how to manage the waste from the RDTs after the test has been used. Some waste generated from RDTs can be infectious—e.g., used sharps (lancets and needles) can cause serious injury or illness. If they are contaminated with blood or other body fluids, they can cause infection with hepatitis B, hepatitis C, HIV, and other infectious diseases. To protect health personnel, waste handlers, and the community against potential injury, all providers must establish safe, environmentally sound ways to handle and dispose of waste. Inappropriate handling and disposal will have serious implications for everyone's health. In resource-limited settings, it is often difficult to dispose of HCW correctly. This guide offers solutions based on actual experience in developing countries.

Other Activities

Bed Net Recycling Pilot in Madagascar

In November 2010, the task order conducted the second phase of its LLIN recycling pilot study in Madagascar. The purpose of the pilot was to determine whether recycling would be a feasible option for bed nets that are at their end-of-life use. The second phase involved collecting used bed nets from six districts in the southern part of the county. The project prepared an interim report on the pilot highlighting three things: (1) the feasibility of conducting a recycling campaign (considering an array of logistical and other challenges); (2) the extent to which the population is willing to participate in the campaign; and (3) the cost of implementing a recycling campaign.

The findings from the pilot demonstrated that:

1. Reverse logistics is possible.
2. Local infrastructure must be in place.
3. Logistics is easier when collection and distribution are combined.
4. Savings could occur if collection and and distribution are combined; however, collection is still more expensive than distribution.
5. The success of a campaign depends on the population's willingness to give back old LLINs.

USAID | DELIVER PROJECT. 2010.

A woman with LLINs during Madagascar net distribution.

6. Distance and limited access to roads inhibit collection efforts.
7. There is no correlation between population size, density, and area and number of LLINs collected.
8. Communication strategies may improve the success of a campaign.
9. Increasing local ownership may result in more nets being collected.
10. LLIN lifecycle is a key determinant in the number of nets collected

The final phase (phase three) of the pilot involved determining whether the collected nets could be recycled and used by TO3's partner, Trex, to manufacture into biocomposite plastic-wood boards. Trex was indeed able to recycle the polyethylene nets and use the plastic in its manufacturing process. While Trex's processing costs fell within its normal range, the cost of collecting and shipping the nets made it prohibitive as a source of plastic.

TO3 also sent samples of the used nets to the Natural Resources Institute, which WHO asked to lead the technical part of the pilot. NRI identified Intelligent Insect Control (IIC) as a contractor for conducting a pesticide retention study on the old LLINs collected from Madagascar. IIC analyzed the release of insecticide over time—from the netting material, as well as from samples of products made from recycled LLINs, in this case a biocomposite plastic-wood board developed by Trex. While the methods used were not able to determine the cause(s) of insecticide loss, analysis of the remaining active ingredient (insecticide used on the net) does indicate the range of losses that occurs

from real world use of nets. Six nets out of a sample of 12 nets contained 60 percent or more of the original pesticide, which indicates a good level of mosquito repellence for these nets.

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

Operational area	Indicators	Status
Support global and regional stakeholders/forums of SCM technical issues	Number of global and regional malaria initiatives with DELIVER technical participation	8

Performance Monitoring

During FY11, the project worked with the TO3 COTR to revise and update the TO3 PMP and accompanying Quality Assurance Surveillance Plan (QASP) to ensure that the best possible measures were being used to assess project performance. A number of new informational indicators were added to provide essential data for planning and programmatic decisionmaking purposes, but do not fall under the direct control of the project (e.g., Facility Stockout Rate, Percentage of Countries with a Functioning LMIS, etc.). The PMP indicators, calculated for this reporting period, are included in relevant sections throughout this document, and supplemental information can be found in Appendix G.

In addition, the project and the COTR agreed on a new set of environmental verification indicators to satisfy Environmental Mitigation and Monitoring Plan (EMMP) requirements. Data collection has begun with the start of TO7, and the EMMP indicators are focused on identifying and addressing any specific environmental threats of the project's activities (see Appendix H).

In addition to the PMP indicators, the project and the TO3 COTR agreed on a set of deliverables during the work plan process for the fiscal year, including the dates of submission. Care was taken to assess the status of these deliverables at routine TO3/USAID meetings. Several of the potential activities from the FY11 work plan had contingent deliverables to be required only if the activity was unable to proceed. All updates to the deliverables were undertaken with full consultation from USAID. A table of agreed-upon deliverables and their status for this reporting period is provided in Appendix J.

Other less formal methods for performance monitoring and management are also in place—such as weekly TO3/USAID meetings and distribution of an updated Current Actions Table. During weekly meetings with USAID personnel and principal project staff, the TO3 team discusses all issues related to upcoming procurement 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, and their status is updated on the Current Actions Table, which is then made available every week to all PMI and project managers.

Implementation Challenges and Solutions

Global Supply Shortage of ACTs

Increased global demand for ACTs has placed pressure on manufacturers and appears to have outstripped their capacity to meet the supply. This is due to a number of factors, including the rapid uptake in the use of ACTs as well as limited availability of artemisinin—the active pharmaceutical ingredient. The combination of these factors means that production cannot meet demand. This misalignment of supply and demand has resulted in extended lead times from ACT manufacturers, coupled with an increase in emergency orders. These emergency orders are not only due to the unavailability of product from the manufacturer, but a variety of other reasons as well, such as poor planning or delays in grant disbursement. The limited global supply of ACTs will continue to be a challenge for the foreseeable future, and the project is implementing a number of strategies to address this challenge.

Develop a Stockpile

The project established an emergency stockpile of AL in Roermand, the Netherlands. In consultation with PMI, a plan was developed with Novartis to produce 500,000 treatments of AL each month. In theory, the stockpile will enable the project to address immediate emergency requirements. At its inception, the project committed stock from its stockpile to two countries; since then, the project has not physically held stock in the stockpile because all stock has gone directly to fill countries' emergency orders.

Procure from Generic Manufacturers

Until 2011, the project had only procured AL from Novartis. Due to manufacturer constraints, however, the project decided to explore the possibility of procuring generic AL from other WHO-prequalified manufacturers. The necessary approvals were obtained, and the procurement team held discussions with each country to determine whether generic AL, in lieu of Coartem, would be acceptable to in-country stakeholders. After consultations with the local Ministry of Health and NMCP, several countries responded that generic formulations would be acceptable. Orders for generic AL have been placed for Malawi, Nigeria, Zambia, and Zimbabwe.

Conduct Robust Supply Planning

The value of forward planning to improve PMI's ability to support countries with ACT donations consistent with MOPs and other requests cannot be overemphasized. The project needs to place supply contracts with manufacturers early enough to ensure that country needs will be integrated into their tight production schedules. In an effort to do this, the project asked all field offices to update their ACT quantifications for a rolling 24 months. Updated quarterly quantifications (including detailed supply plans, with all expected orders and required quantities) will be submitted to the DC office, through either a PipeLine database or an Excel template. Each quarter, the project

will receive, review, analyze, and consolidate supply plans from countries. This consolidation will enable the project to plan orders with manufacturers to best meet country needs for ACTs.

Visibility of Data

To develop the supply plans mentioned above, real data on consumption, stock on hand, and shipment information are necessary. Ideally, these data are available up and down the supply chain so that program and supply chain managers can make informed decisions to improve product availability and customer service. In most countries where the project works, however, national-level consumption and stock on hand data are not available. There are a number of reasons why information does not flow up to the central level or within and across countries, or why information flows up to intermediary levels, but not to the central level. Some of these reasons include an unsound system design where the right data are not being captured, lack of forms or resources for facility staff to complete the forms, no reliable mechanism to move the data from one level to another, and lack of systems at the central level to aggregate and analyze the data, to name a few.

One consideration is that in most countries the LMIS for malaria products is part of the same system that manages essential medicines. This presents a challenge in terms of improving the flow of information specifically for malaria products. In-country program managers must determine strategies for improving collection and reporting of data on malaria products while considering the investments required for improving data on essential medicines. In addition, since malaria products are used down to the community level, a huge number and range of facilities must report data; this presents challenges for complete reporting. Countries are undertaking interventions to design and improve LMISs for malaria products.

Avoiding Stockouts at the Country Level

Stockouts remain a chronic problem at the country level. The global shortages of ACTs, combined with the limited visibility of data down the supply chain, are significant contributing factors. The project is expected to avoid stockouts down to the facility or even community level. If the information is not flowing up the system, in-country staff may not know that a potential stockout should be averted, or addressed, before it is too late. Depending on the country, the project may not have access to the commodities or the mandate to deal with emergency orders. However, project staff work to address and avert stockouts as best as possible. In Tanzania, the project responded to a malaria outbreak in Kagera in less than 24 hours.

Strengthening CMSs and Managing Augmented Systems

One of the specific objectives of TO3 is "to strengthen in-country supply systems and their capacity for managing malaria commodities." In most countries, the CMS is integral to the in-country supply system, responsible for storage, distribution, order management, and other logistics functions for the public sector. CMSs face many challenges—such as weak management, poor infrastructure, insufficient human resources, low capacity, or poor policies or procedures. CMSs must be accountable for the products they manage, including PMI commodities—by reporting on commodities delivered, providing proofs of delivery, etc. In a couple of cases (Malawi and Angola), the project has opted to run commodities through an augmented system outside the CMS. In both of these cases, both accountability of products delivered and availability of information on products managed through the system were improved.

However, there are drawbacks to moving to an augmented system, which must be carefully considered. In many cases, CMS may be part of the MOH, or could be a parastatal entity. When products are moved out of the established public sector supply chain, this could be perceived as an undermining of the MOH. Fostering good relationships with counterparts, including the MOH, is fundamental to improving public sector supply chains. In the short term, this addresses problems of leakage. However, it is not yet known what the long-term effects will be on system sustainability.

Spending Down TO3 Funds

The project is currently in the process of spending down TO3 funding while initiating implementation of TO7 funding, including procurements. This transition is complicated by the fact that it is difficult to spend the TO3 funding allocated for commodity procurement when orders cannot able be placed due to the global shortage of ACTs. The project is working closely with country teams to ensure that TO3 funding is spent effectively and in a timely manner, while scaling up TO7 activities.

Appendices

Appendix A

Commodities Procured October 1, 2010–September 30, 2011

Country	Date	Item Description	Value (U.S.$)	Quantity
Angola	10/10/2010	Coartem	3,348,668.4	3,770,010
Angola	11/4/2010	RDTs	324,000	450,000
Angola	11/8/2010	LNs	231,0210	630,000
Angola	12/1/2010	Lab Supplies	81,539.5	400
Angola	12/14/2010	MMKs	202,298.33	80
Angola	5/31/2011	RDTs	831,250	1,187,500
Benin	12/21/2010	RDTs	360,000	600,000
Benin	1/11/2011	MMKs	50,959.03	20
Benin	2/1/2011	LNs	3,191,300	700,000
Benin	2/11/2011	Coartem	430,500	480,000
Benin	3/14/2011	SP Tablets	35,310.11	1,217,590
Benin	4/11/2011	FDC AS/AQ	17,802.48	29,100
Benin	7/8/2011	LNs	934,595	205,000
Burkina Faso	2/11/2011	FDC AS/AQ	861,550.1	1,699,250
Burundi	12/22/2010	LNs	1,591,940	415,000
Burundi	1/11/2011	RDTs	186,000	300,000
Burundi	2/11/2011	FDC AS/AQ	970,196	1,780,000
DRC	12/8/2010	SP Tablets	100,232.6	4,058,000
DRC	12/1/2010	Severe Malaria Pharma	248,500	Various
DRC	5/3/2011	LNs	7,200,000	2,000,000
Ethiopia	11/9/2010	Lab Supplies	7,551.2	Various
Ethiopia	6/20/2011	Microscopes	149,877	183
Ethiopia	6/11/2011	Lab Supplies	251,948.46	Various

Country	Date	Item Description	Value (U.S.$)	Quantity
Ghana	11/1/2010	Lab Supplies	140,916	Various
Ghana	11/22/2010	LNs	5,465,592	1474000
Ghana	12/1/2010	MMKs	194,258.04	80
Ghana	12/1/2010	Lab Supplies	11,409.6	Various
Ghana	12/3/2010	RDTs	464,384	725,600
Ghana	9/20/2011	LNs	1,705,600	520,000
Guinea	8/1/2011	FDC AS/AQ	756,349	1,450,000
Kenya	10/1/2010	Coartem	2,225,088	2,630,400
Kenya	11/11/2010	RDTs	72,996	110,600
Kenya	12/10/2010	RDTs	279,808	437,200
Kenya	2/9/2011	Microscopes	172,930	200
Kenya	2/1/2011	Lab Supplies	326,216	Various
Kenya	3/16/2011	LNs	9,602,250	2,212,500
Kenya	6/1/2011	Coartem	2,332,416	3,094,800
Kenya	8/1/2011	Coartem	1,091,712	1,238,400
Kenya	9/11/2011	Coartem	121,800	165,000
Liberia	10/1/2010	Lab Supplies	4,927	Various
Liberia	11/18/2010	RDTs	744,000	12,000,000
Liberia	11/1/2010	FDC AS/AQ	322,479.23	571,600
Liberia	11/22/2010	LNs	1,271,550	350,000
Liberia	12/1/2010	Severe Malaria	298,940	Various
Liberia	12/14/2010	SP Tablets	5,606.4	256,000
Liberia	2/1/2011	Lab Supplies	104,412.75	Various
Liberia	3/7/2011	Microscopes	36,504	39
Liberia	3/11/2011	Lab Supplies	595,084.14	Various
Liberia	3/11/2011	FDC AS/AQ	1,816,843.85	279,4075
Liberia	5/4/2011	LNs	1,199,900	300,000
Liberia	8/11/2011	FDC AS/AQ	724,321.6	1,079,200
Madagascar	4/5/2011	RDTs	1,110,000	1,500,000
Madagascar	6/28/2011	Lab Supplies	1,216.94	Various
Madagascar	8/11/2011	FDC AS/AQ	44,190.98	100,025
Malawi	11/17/2010	Coartem	116,121.6	215,040
Malawi	2/1/2011	LNs	6,057,905	1,659,700

Country	Date	Item Description	Value (U.S.$)	Quantity
Mali	11/11/2010	LNs	6,752,900	1,540,000
Mali	11/1/2010	Coartem	585,792	739,200
Mali	6/7/2011	LNs	6,347,916	1,497,150
Mali	7/11/2011	RDTs	306,000	500,000
Mali	9/6/2011	Coartem	316,788	549,990
Mozambique	10/1/2010	Coartem	2,019,571.2	2,021,760
Mozambique	11/1/2010	Coartem	447,897.6	783,360
Mozambique	3/1/2011	Coartem	2,833,703.04	3,809,640
Mozambique	3/29/2011	RDTs	2,300,000	200,000
Mozambique	4/6/2011	Coartem	525,657.6	449,280
Mozambique	5/1/2011	LNs	5,124,000	1,200,000
Nigeria	4/1/2011	LNs	3,601,000	1,000,000
Rwanda	12/6/2010	RDTs	210,010.5	200,010
Rwanda	2/24/2011	Lab Supplies	94,600	Various
Rwanda	3/1/2011	LNs	2,258,604	390,000
Senegal	12/14/2010	LNs	6,927,210	1,710,000
Senegal	12/1/2010	Coartem	57,360	60,000
Senegal	12/30/2010	Microscopes	44,737.5	50
Senegal	12/1/2010	Lab Supplies	27,752.7	Various
Senegal	1/1/2011	Lab Supplies	2,027	Various
Senegal	1/1/2011	Coartem	611,491.2	610,080
Senegal	5/3/2011	LNs	4,270,500	1,170,000
South Sudan	11/12/2010	RDTs	64,350	117,000
Tanzania	10/1/2010	Coartem	3811512	5102820
Tanzania	12/9/2010	RDTs	91260	117000
Tanzania	4/18/2011	Microscopes	28989.9	27
Tanzania	4/1/2011	Lab Supplies	51064.72	Various
Tanzania	4/1/2011	Coartem	3417448.8	5032800
Uganda	10/1/2010	Coartem	1,938,470.4	2,085,120

Country	Date	Item Description	Value (U.S.$)	Quantity
Uganda	12/6/2010	RDTs	726,750	1,275,000
Uganda	12/20/2010	LNs	3,474,100	709,000
Zambia	10/20/2010	LNs	3,744,000	1,000,000
Zambia	11/8/2010	RDTs	1,724,386.5	3,381,150
Zambia	11/9/2010	Microscopes	23,568	15
Zambia	11/1/2010	Lab Supplies	5,536.95	Various
Zambia	11/9/2010	Coartem	181,612.8	504,480
Zambia	11/18/2010	LNs	5,091,200	1,400,000
Zambia	12/1/2010	Coartem	987,494.4	1,731,840
Zambia	1/10/2011	SP Tablets	357,612.57	9,924,900
Zambia	3/8/2011	RDTs	688,500	1,620,000
Zambia	3/21/2011	Coartem	975,000	750,000
Zambia	6/7/2011	LNs	1,205,408.66	360,146
Zambia	6/8/2011	Coartem	207,360	192,000
Zambia	6/22/2011	RDTs	3,8341	83,350
Zambia	7/1/2011	Coartem	2,598,633.6	2,315,400
Zambia	9/12/2011	Lab Supplies	7,096.25	Various
Zimbabwe	2/1/2011	Coartem	762,122.4	74,4120

Appendix B

DFID-Funded Procurement

Procurement for Zambia, October 1, 2010–March 31, 2011
U.K. Department for International Development (DFID)

USAID | DELIVER PROJECT, Task Order Malaria procured malaria commodities for Zambia using funding from the U.K. Department for International Development (DFID). With DFID funding, we procured 1 million LNs; 3,805,560 ACT treatments; 7 million SP tablets; and 1,350,000 RDTs for a total value of U.S.$8.16 million (includes commodity, freight, insurance, and quality assurance costs).

Item Description	PO#	Vendor Name	Quantity	Total Value (U.S.$)	Delivery Status
Bed Net, Polyester, Deltamethrin, 75dn, (160x180x170), white, rectangular, each	PO-PUP - 461	VESTERGAARD FRANDSEN	1,000,000	3,744,000.00	Delivered
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	PO-PUP - 517	NOVARTIS PHARMA AG	5,760	186,624.00	Delivered
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	PO-PUP - 521	NOVARTIS PHARMA AG	1,728	67,392.00	Delivered
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	PO-PUP - 521	NOVARTIS PHARMA AG	6,144	132,710.40	Delivered
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x1 Blister Pack, 30 Treatments	PO-PUP - 521	NOVARTIS PHARMA AG	39,680	428,544.00	Delivered
Sulfadoxine/Pyrimethamine 500mg/25mg, Pill, Bottle, 1000 tablets	PO-PUP - 537	IDA FOUNDATION	6,750	132,840	Delivered
Test, Rapid Diagnostic Malaria, pf Device, Cassette, Kit 25tests	PO-PUP - 556	ICT DIAGNOSTICS	54,000	688,500.00	Delivered
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister	PO-PUP - 561	NOVARTIS PHARMA AG	14,976	584,064.00	Delivered

Item Description	PO#	Vendor Name	Quantity	Total Value (U.S.$)	Delivery Status
Pack, 30 treatments					
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	PO-PUP - 562	NOVARTIS PHARMA AG	10,024	390,936.00	Delivered
Artemether/Lumefantrine 20mg/120mg, Pill, Dispersible, 6x2 Blister Pack, 30 Treatments	PO-PUP - 635	NOVARTIS PHARMA AG	4,860	104,976.00	Due in October
Artemether/Lumefantrine 20mg/120mg, tablets,6x3 Blister Pack, 30 treatments	PO-PUP - 635	NOVARTIS PHARMA AG	26,400	918,720.00	Due in October
Artemether/Lumefantrine 20mg/120mg, tablets, 6x4 Blister Pack, 30 treatments	PO-PUP - 635	NOVARTIS PHARMA AG	17,280	777,600.00	Due in October
			Total	**8,156,906.40**	

Appendix C

WHO/FIND Lot Testing Report

Document type: **report**	**LOT TESTING REPORT**
Confidentiality: confidential	

Purchase order number: 029217 Consignee of the report: JOHN SNOW, INC

Activity Manager: Steve Hamel Project activity#: 15483.0001.0001_20APR11

Author of the report: FIND Foundation For Innovative New Diagnostics

Description of the PO: To provide malaria rapid diagnostic test (RDT) quality assurance lot-testing services in two reference laboratories, at the Research Institute for Tropical Medicine (the Philippines) and the Pasteur Institute (Cambodia), as of January 26,2011 to January 25, 2012. This agreement for USD 250000 of estimated USD410000 costs of lot-testing therefore covers approximately 60% of total costs.

Date covered by the PO: as of January 26,2011 to January 25, 2012

Period of report: January 26,2011 to March 25, 2011

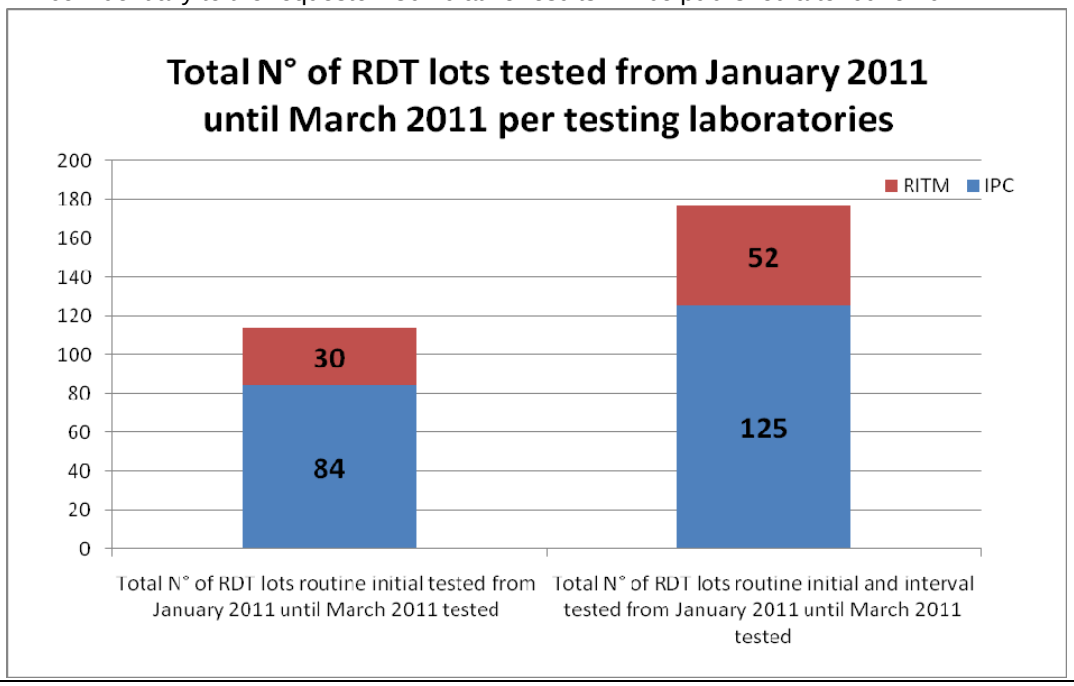
Date of report: April 18, 2011. Revised June 02, 2011.

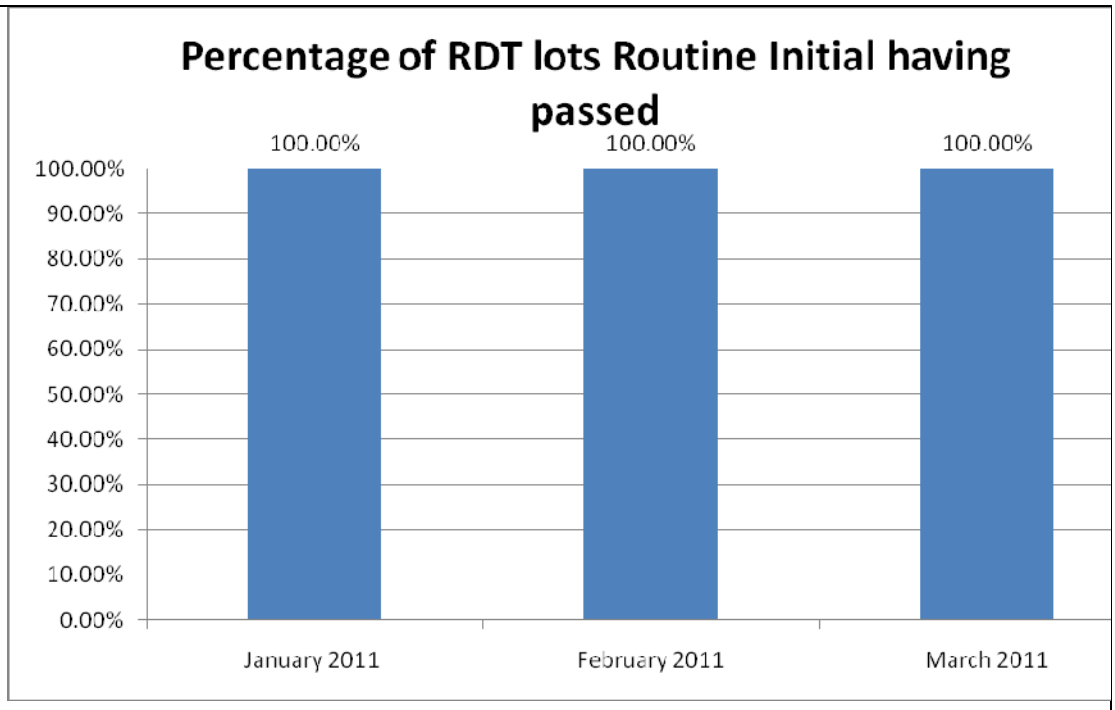
1. Lot testing summary per site as of January 26, 2011 to March 25, 2011

   114 RDT lots submitted to both testing laboratories for routine, initial testing, including 55 from PMI projects.

   177 RDT lots submitted to both testing laboratories for routine initial and interval testing, including 71 from PMI.

   1 RDT lot failed during the 18 month testing in January 2011 and results were passed confidentially to the requestor. Cumulative results will be published after June 2011.





N.B. Since a RDT lot is counted Pass or Failed the year when it was received by the testing laboratory for Quality Control testing, the Pass rate may vary when a failure is detected during the interval testing- i.e. 1 RDT lot failed during the 18 month testing in January 2011, since it was received in 2008, it is counted as a failed RDT lot in 2008 (the year when it was received) and not in 2011.

2. Lot testing database

For the time being the testing sites are entering all the Quality control testing details and results in a word report result form.

A Lot testing Access Data Base has been developed for a controlled entry of all lot testing data and issue of electronic lot testing reports at each testing laboratory. The database also facilitates the follow-up of the activities and workload at the central level.

After various rounds of trials and improvements, the database is now about to be launched.

3. EQA and follow-up visits

The annual EQA visits at each lot testing lab have been scheduled for last week of May and all arrangements are being done. The EQA assessment covers general items like safety, infrastructure and documents management, as well as the quality of all project specific activities (management of RDT lots, panel samples, testing, reporting, etc.).

Follow-up visits in each lab by FIND Geneva staff will also be done at each site, for on-site discussion of the workload, issues, and refresher trainings if needed.

4. Proficiency panels

The proficiency testing panels of RDT quality control samples and evaluation of malaria RDTs are under preparation at HTD (Hospital for Tropical Disease). An initial lot-testing screening of the tests is performed, then half of the tests are kept at 4°C and the other half is incubated at high temperature to degrade the RDTs to a point where they should fail routine lot-testing.

HTD is using the Carestart Malaria pLDH (Pf/PAN) 3-line test for this round of proficiency panel preparation so that the proficiency testing can be carried out with both *P. falciparum* and *P. vivax* QC samples at the two lot-testing laboratories. As of now, the RDTs incubated showed a very faint

test line band and will continue to be heated until sufficient degradation is noted. Degraded and non-degraded RDTs will then be sent as proficiency panels to the lot-testing laboratories for blinded testing.

5. Stock RDTs

The testing sites need a stock of reference RDTs of good quality, for monitoring of the panel samples in case of failure of lot RDTs. A replenishment of the stock RDTs was required in February at both sites. An initial testing was carried out on these lots upon receipt showed that the RDT lot received at IPC failed at Pv 200 parasites/µl. The manufacturer replaced them FOC.

6. Stocks of panel samples are running low at RITM, and will need replenishment later this year at IPC. RITM plans a specimen collection in June 2011, after which characterization will be performed at USCCD and HTD in London.

7. Equipment:

A new incubator will be purchased in the second quarter for IPOC, to manage the increasing workload. It is expected an additional incubator will be purchased for RITM later this year.

8. Workload issues:

Alternative protocols are being considered for interval testing to reduce space and personnel requirements, and these will be drafted and discussed with JSI and other major users at the Steering Committee meeting in 2011 to gain consensus with users on the best approach to manage increasing workloads whilst providing the needed information on tests and maintaining low overall costs.

9. Requesters

The major requestors of lot-testing continue to be US PMI, and country programs in SE Asia, but an increase in requests from other country programs recently reflects the recommendations of the Global Fund that lot-testing be performed, Most manufacturer requests arise from pre-procurement lot-testing requests from procurement agencies. This is now the common mode of lot-testing for USAID. In such cases, FIND is unable to track the intended user fo the lot unless the user makes prior arrangement with the requestor (the manufacturer) to be included in the request form. A small number of requests for non-routine testing are received from field programmes to test RDTs withdrawn from the field, and very few form manufacturers requesting to ensure products newly modified are of appropriate sensitivity. These latter are dealt with on a case by case basis, and accepted if the products are commercially available, less than 5 being received in 2011.

Requesters having submitted RDTs for routine and non routine lot testing January 2011 until March 2011	**% of RDT lots submitted**
Government Aid and Procurement Agencies (non endemic countries)	57.7%
Non-Governmental Organizations (NGOs) and Research Institutions	0.8%
National Malaria Control Programmes / WHO / UNICEF	8.1%
RDT manufacturers (for routine pre-shipment and non-routine testing)*	33.3%

More than half of the requests came from procurement agencies, followed by requests from RDT manufacturers.

10. Contract renewal

The Technical Services Agreements have been recently extended for both sites (RITM and IPC).

Document type: **report**	**LOT TESTING REPORT**
Confidentiality: confidential	

Purchase order number: 029217 Consignee of the report: JOHN SNOW, INC

Activity Manager: Steve Hamel Project activity#: 15483.0001.0001_25JUL11

Author of the report: FIND Foundation For Innovative New Diagnostics

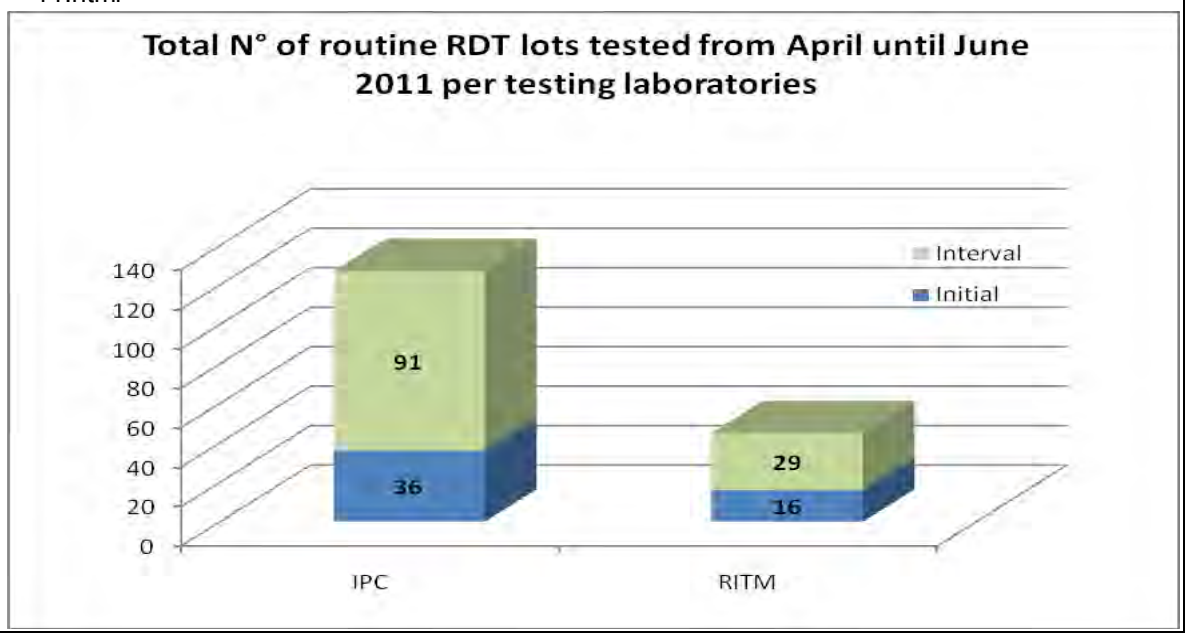
Description of the PO: To provide malaria rapid diagnostic test (RDT) quality assurance lot-testing services in two reference laboratories, at the Research Institute for Tropical Medicine (the Philippines) and the Pasteur Institute (Cambodia), as of January 26, 2011 to January 25, 2012. This agreement for USD 250000 of estimated USD410000 costs of lot-testing therefore covers approximately 60% of total costs.

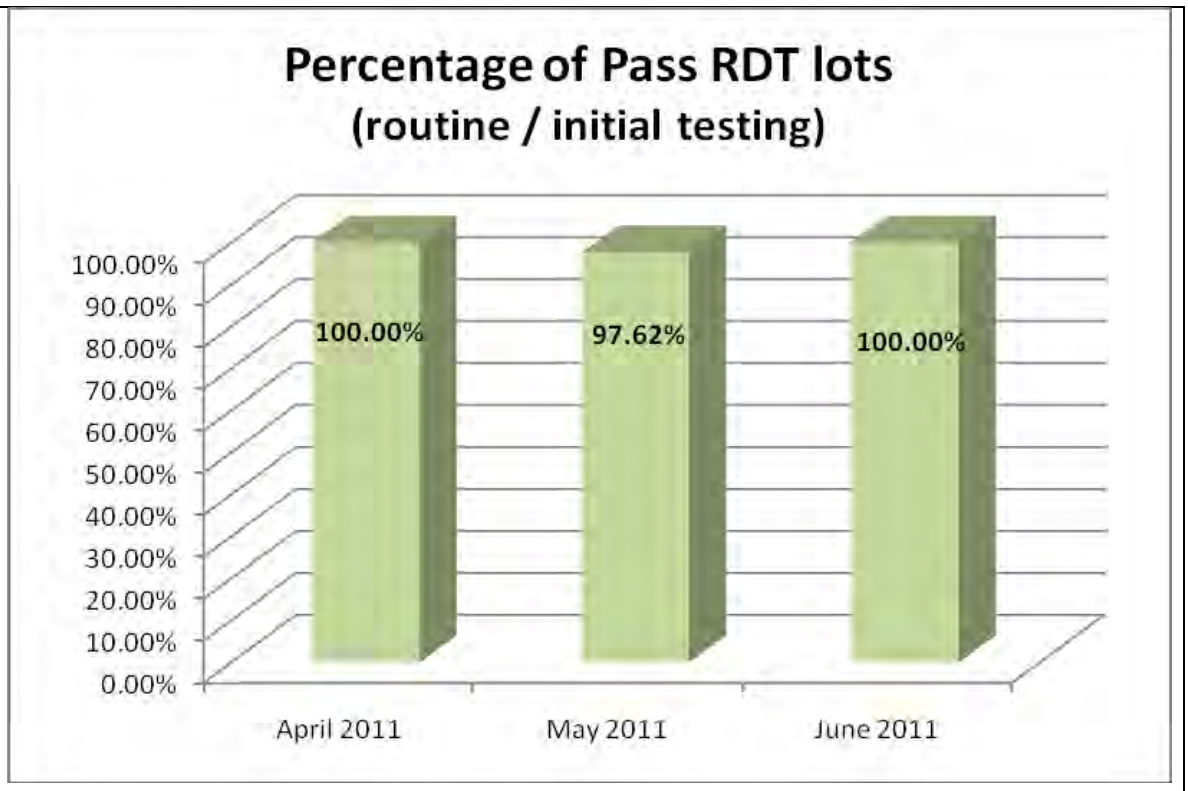
Date covered by the PO: as of January 26,2011 to January 25, 2012

Period of report: March 26, 2011 to June 25, 2011

Date of report: July 25, 2011

1. Lot testing summary per site as of March 26, 2011 to June 25, 2011
   90 RDT lots submitted to both testing laboratories for routine, initial testing, including 37 from PMI projects.
   254 RDT lots processed at both testing laboratories for routine initial and interval testing, including 105 from PMI.
   2 RDT lot failed during the initial testing in May 2011 and results were passed confidentially to the requestor. All results are not published for the first half of 2011 at http://www.finddiagnostics.org/about/what_we_do/successes/malaria_rdt_lot_testing_results/2011.html





N.B. Since a RDT lot is counted Pass or Failed the year when it was received by the testing laboratory for Quality Control testing, the Pass rate may vary when a failure is detected during the interval testing- i.e. 1 RDT lot failed during the 18 month testing in January 2011, since it was received in 2008, it is counted as a failed RDT lot in 2008 (the year when it was received) and not in 2011.

2. Specimen Bank Steering Committee – 21 May 2011 - Attended by Steve Hamel by telephone (see 9. Workload issue).

3. Lot testing database

   The Microsoft Access Lot testing database was launched in May 2011. Electronic lot testing reports are now sent to the requesters in pdf format on a routine basis.

   After a few weeks of use, the testing laboratories made some comments for improvement.
   A new version was released end of June in accordance with the changes requested by the testing sites and is now in operation. This database will simplify coordination and reporting, and enable easier expansion of the network in the future if required and transfer of coordination.

4. EQA and follow-up visits

   The annual EQA visits at each lot testing lab took place last week of May and all arrangements were done.
   The EQA assessment covers general items including safety, infrastructure and document management, as well as the quality of all project specific activities (management of RDT lots, panel samples, testing, reporting, etc.).
   Both laboratories achieved high scores in the assessment, 97% and 94% at RITM and IPC respectively, well above the 85% required.

5. Proficiency panels

   The proficiency testing panels of RDT quality control samples and evaluation of malaria RDTs were released beginning of June by HTD (Hospital for Tropical Disease).

An initial lot-testing screening of the tests was performed, then half of the tests are kept at 4°C ("good RDTs") and the other half was incubated at high temperature to degrade the RDTs to a point where they should fail routine lot-testing.

2 batches of Carestart Malaria pLDH (Pf/PAN) 3-line were received at FIND for labeling (blinded testing preparation) and sent to the testing laboratories.

Special instructions were given to RITM due to the shortage of *P. vivax* samples =>proficiency testing to be carried out on *Pf* detection only.
"Full testing" for IPC (*P. vivax* and *P. falciparum* detection).

The pre-alert shipping documents and RDT lots were received by both testing sites end of June => evaluation in progress.

6. Stock RDTs

The testing sites need a stock of reference RDTs of good quality, for monitoring of the panel samples in case of failure of lot RDTs. A replenishment of the stock RDTs was required in February at both sites. An initial testing was carried out on these lots upon receipt showed that the RDT lot received at IPC failed at *P. vivax* 200 parasites/µl. The manufacturer replaced them FOC.

The monthly stock inventory from RITM and IPC showed a replenishment need of Aldolase stock RDTs. 2 purchase orders of Malascan™ Device - Rapid test for Malaria Pf/Pan were placed and received by RITM and IPC in June.

7. Panels

Stocks of panel samples are running low at RITM, and will need replenishment later this year at IPC. RITM plans a specimen collection in July 2011 with the help of Sina Nhem from IPC, after which characterization will be performed at USCDC and HTD in London.

Some staff from the department for Tropical Disease at RITM were in Palawan beginning of July for other purposes, and carried out an assessment of case numbers in preparation for sample collection.

In the interim, all combination tests are being tested at IPC, explaining the higher relative workload at that site. As a contingency, IPC is preparing a large collection in Cambodia if RITM fails to sufficiently replenish the bank, with samples to then be transferred to RITM after characterization.

8. Equipment

The purchase of a new incubator was planned in the second quarter for IPC and RITM to manage the increasing workload.
IPC proposed an alternative solution: to have a dedicated, temperature controlled room to store the RDTs instead of purchasing a new incubator and shift an incubator to RITM (quotation for the equipment of such a room was received – to check feasibility of shifting the incubator to RITM with IPC and MOH). Decision to be made in August (depending on the new protocol as per the discussion on workload issue at the Steering Committee end of May).

9. Workload issues

Alternative protocols were considered for interval testing to reduce space and personnel requirements. These were discussed with JSI. PMI and other major users at the Steering Committee meeting in 2011 to gain consensus with users on the best approach to manage increasing workloads whilst providing the needed information on tests and maintaining low overall costs.
It was decided to reduce interval testing to one episode at 18 months after receipt of tests, thus continuing to provide real-time data at close to the full shelf-life of most products The decision is to be communicated to JSI and major users before the end of July (*communication sent* 18 July 2011). The letter is attached in Annex 1.A modified request form with fewer RDTs required for

submission is now in place.

10. Requesters

From January 2011 until end of June 2011, the testing sites received and evaluated 87% of the total number of RDT lots received and evaluated in 2010

The major requestors of lot-testing continue to be US PMI, and country programs in SE Asia, but an increase in requests from other country programs recently reflects the recommendations of the Global Fund that lot-testing be performed.

Most manufacturer requests arise from pre-procurement lot-testing requests from procurement agencies. This is now the common mode of lot-testing for USAID. In such cases, FIND is unable to track the intended user for the lot unless the user makes prior arrangement with the requestor (the manufacturer) to be included in the lot testing request form.

A small number of requests for non-routine testing are received from field programmes to test RDTs withdrawn from the field, and very few form manufacturers requesting to ensure products newly modified are of appropriate sensitivity. (A few non routine lots were received from Liberia as per Arno Hensen's request- These were watered RDTs from a warehouse in Liberia (results were good). These latter are dealt with on a case by case basis, and accepted if the products are commercially available, less than 20 being received in 2011.

Requesters having submitted RDTs for routine and non routine lot testing January 2011 until March 2011	**% of RDT lots submitted**
Government Aid and Procurement Agencies (non endemic countries)	37%
Non-Governmental Organizations (NGOs) and Research Institutions	7.5%
National Malaria Control Programmes / WHO / UNICEF	27%
RDT manufacturers (for routine pre-shipment and non-routine testing)*	28.5%

More than third of the requests came from Government Aid or procurement agencies, followed by requests from RDT manufacturers.

11. Contract renewal

The Technical Services Agreements have been recently extended for both sites (RITM and IPC) until the end of 2011.

Additional costs were recently included in the contract due to extra costs borne by IPC to release some RDT shipments from customs and have them delivered on site.

12. Future operation

Current funding will take the programme into early 2012, with no current prospect of funding for malaria RDT quality control activities beyond this time. FIND is actively working with WHO to address this situation, and assessing current resources to determine whether lot-testing can be extended beyond the current conclusion of USAID funding.

Annex 1: See attached pdf document

INFORMATION ON WHO-FIND MALARIA RDT EVALUATION PROGRAMME

Re: Changes to malaria rapid diagnostic tests (RDT) lot-testing protocol of the WHO-FIND malaria RDT evaluation programme – Reduction in frequency of interval testing

Requests for lot-testing of malaria RDTs at the laboratories supported for this purpose by WHO and FIND increased significantly during 2010 with a further rapid increase in requests in the first half of 2011. This is anticipated to continue. This is resulting in increasing strains on both the availability of panel samples used for testing, and space requirements at the laboratories for storage of RDTs. The current lot-testing protocol requires re-testing at 6-monthly intervals over the remaining shelf life of the lot *http://www.wpro.who.int/sites/rdt/who_rdt_evaluation/lot_testing.htm*).

During the last steering committee meeting in London in May, 2011, WHO and FIND reviewed the programme with a number of major users. The primary aim of the review was to maintain open access to lot-testing for public-sector procurers of malaria RDTs and ensure results are reliable, whilst keeping within current budgets. The programme has now accumulated considerable data on results of lot-testing.

It is noted that, while interval testing (testing of RDTs after storage at a temperature near the recommended maximum at 6-montly intervals) provided valuable independent data on real-time product stability valuable for long-term procurement decisions, the impact on the field use of individual lots under test was limited. Failures during interval testing have been few, and those that have occurred have not been early enough to impact on field use of the lot. However, this part of the testing regimen has high resource requirements.

After consultation with major users, it has been decided to restrict interval testing to one episode at 18 months after receipt of tests; reduced to 12 months for products with less than 18 months remaining shelf-life at time of receipt. The protocol for the 18 month interval testing will be the same as currently used for 6, 12 , 18 month testing (i.e. number of RDTs, number of samples).

Initial testing will remain unchanged.
This change in procedure will enable a reduction in the number of tests required for testing, as specified below, and a considerable reduction in the number required to be incubated, as requirements of additional tests for confirmatory testing of stored lots will be reduced.

Test type	Current requirement	New requirement
P falciparum only	125	100
Combination test (or pan-specific test with single test line)	175	150

Note: Explanation of revised numbers of RDTs to be submitted. The initial evaluation on receipt of RDTs required for more RDTs than subsequent interval testing, as it is more thorough (see SOPs in the Methods

1

Document type: **report**	**LOT TESTING REPORT**
Confidentiality: confidential	

Purchase order number: 029217 Consignee of the report: JOHN SNOW, INC

Activity Manager: Steve Hamel Project activity#: 15483.0001.0001_07OCT11

Author of the report: FIND (Foundation For Innovative New Diagnostics)

Description of the PO: To provide malaria rapid diagnostic test (RDT) quality assurance lot-testing services in two reference laboratories, at the Research Institute for Tropical Medicine (the Philippines) and the Pasteur Institute (Cambodia), as of January 26th, 2011 to January 25th, 2012. This agreement covers USD 250,000 of a total estimated cost of USD410000 costs for all lot-testing (approximately 60%).

Dates covered by the PO: January 26th,2011 to January 25th, 2012

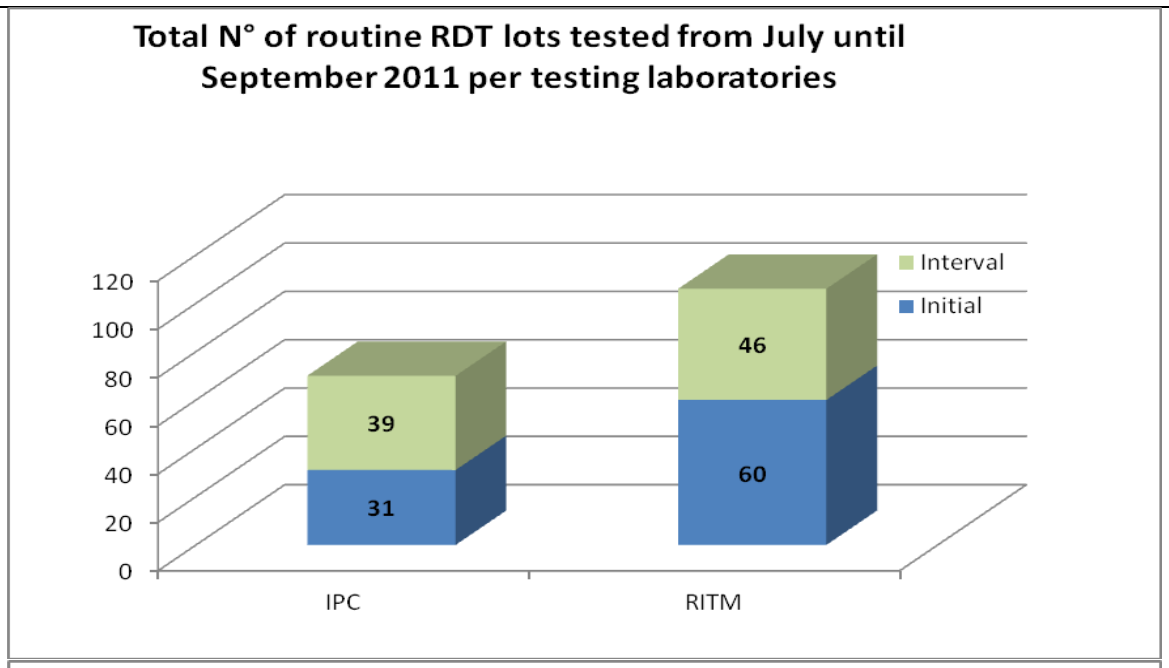
Period of report: June 26th, 2011 to September 25th, 2011

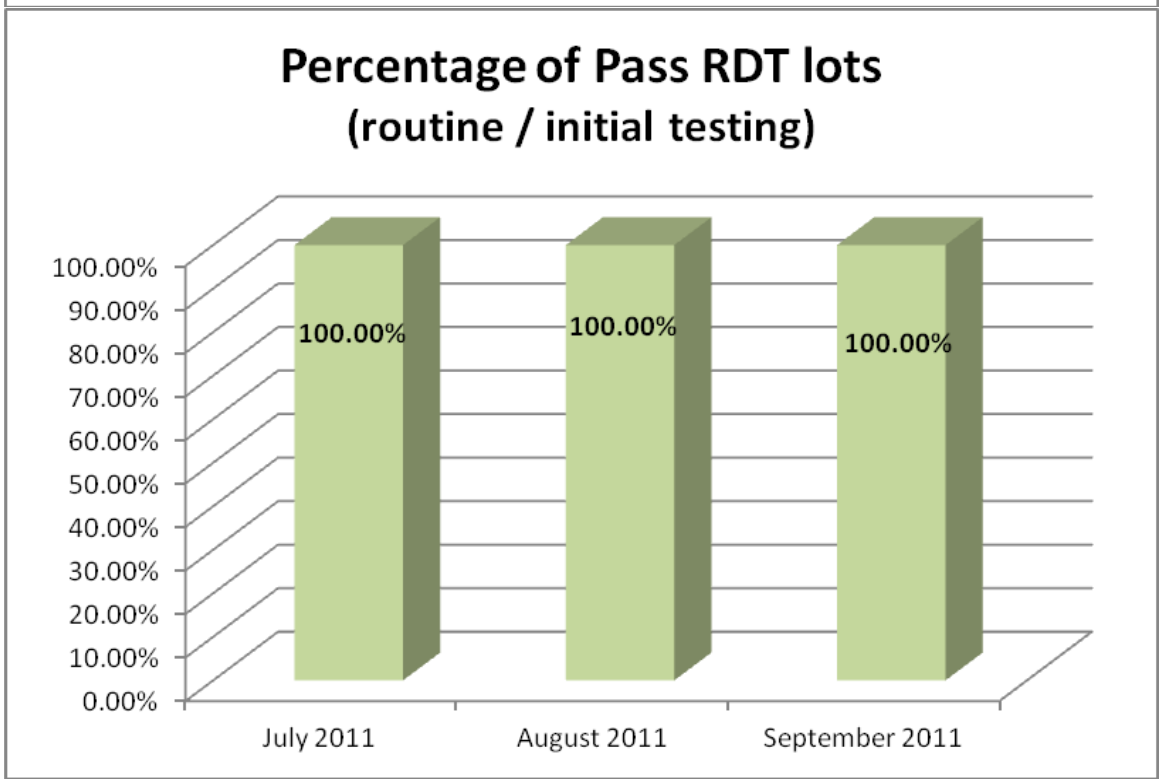
Date of report: October 07th, 2011

1. **Lot testing summary** per site from June 26th, 2011 to September 25th, 2011
   - 91 RDT lots submitted to both testing laboratories for routine initial testing, including 21 from PMI projects.
   - 176 RDT lots processed at both testing laboratories for routine initial and interval testing, including 48 from PMI.
   - No failure occurred during this period.

   From January 2011 until end of September 2011, the testing sites received and evaluated 87% of the total number of RDT lots received and evaluated in 2010, a substantial increase in the total workload compared to last year (See charts on following page).
2. **Change of the lot-testing protocol**

   The implementation of the new lot testing protocol started on August 8th (initial testing + 18 months testing). The interval testing was reduced to one episode at 18 months after receipt of the tests, thus continuing to provide real-time data close to the expiry date of most products.





N.B. Since an RDT lot is counted as a Pass or Fail the year t was received by the testing laboratory for Quality Control testing, the Pass rate may vary if a failure is detected during the interval testing. e.g. 1 RDT lot failed during the 18 month testing in January 2011, since it was received in 2008, it is counted as a failed RDT lot in 2008 (the year when it was received) and not in 2011.

3. Lot testing database

Both testing laboratories are now using it routinely.
The data entry from the two laboratories needs to be harmonized in order to avoid manual crosschecking of data and to allow reliable extraction of results.

4. QC sample stock monitoring system

RITM in-house system for monitoring QC samples stock level was shared with IPC. Forms such

as QC sample daily use log sheet and QC sample stock level monthly monitoring form (in excel) were imparted to IPC staff.

The QC sample daily use log sheet will be use during each testing, thus all the QC samples used are entered in this form and the numbers are summarized weekly and monthly from each QC sample. On the other hand, for the QC sample stock level monthly monitoring form, the monthly totals (per QC sample) are subtracted from the starting quantity at the beginning of each month.

5. Proficiency panels

The proficiency testing results were released in July.
They were good at both laboratories, but incomplete at RITM due to the shortage of *Pv* samples.

6. Stock RDTs

During the August monthly call, RITM requested 500 First Response Malaria Ag pLDH/HRP2 Combo Card Tests for the upcoming sample collection.
These were received by RITM at the beginning of September.

7. Sample collections

Annual collection and preparation of blood quality control (QC) panels using malaria parasites obtained from infected individuals is done regularly at regional lot-testing sites (RITM in the Philippines and IPC in Cambodia) to replenish the specimen bank used for the malaria RDT lot-testing and product testing.

IPC conducted a three-week long collection, from September 5th to 23rd, 2011. MA laboratory technician from RITM joined the team to help with the samples collection for the last 2 weeks. In this round of collection, a total of 107 individuals were screened for malaria. Of the 107, 28 were found positive (*Pf*=12 and *Pv*= 16).

Approximately 16,500 aliquots of QC samples were prepared from 24 wild type parasites (out of a total of 28 positive cases seen). Four positive samples were excluded as QC samples. The main reasons for exclusion include positive serology result for hepatitis, and low parasitaemia.

To meet the need for *Pv* sample at RITM, additional aliquots of *Pv* samples (50 aliquots for the 2000 p/µl dilution and 100 aliquots for the 200 p/µl dilutions) were also prepared and will be sent to RITM for Pv samples stock replenishment.

The number and volumes of aliquots required for the characterization of antigen contents at HTD have been re-discussed and the procedures will need to be updated accordingly.

RITM had to postpone the specimen collection to end of October due to low malaria cases in the field and availability of staff. Sina Nhem from IPC will also join the team to help with the samples collection in Palawan. RITM collected a new set of parasite-negative samples during the quarter, for local use and for transfer to the global specimen bank at US CDC.

8. Equipment

The evaluation carried out in accordance with the new lot testing protocol requires fewer RDTs than the previous protocol (25 less RDTs are needed for both HRP2 & combo evaluation).

IPC began removing excess RDTs from the incubators to release storage space.
With the implementation of the new lot-testing protocol (initial testing and a single test at 18 months), both lot-testing laboratories are now gaining more incubator storage space to accommodate RDTs for testing, which will probably avoid the need to purchase new incubators as had been planned previously (two incubators are now empty at IPC,).

A Cryotubes order (15000 Sarstedt tubes 0.5ml) was placed as per IPC's request for the sample

collection. Delivered end of August.

At IPC, the freezer dedicated to store the samples of the lot testing programme is now full; aliquots prepared from the recent collection were stored temporarily into a freezer of another project. An update from IPC will be needed once the samples will be shifted, so that a decision can be taken (purchase of another freezer?).

9. Workload issues

Due to a lack of *Pv* samples at RITM, all combination tests are being tested at IPC, thus creating an imbalance in the workload of the two lot-testing laboratories. This issue will be solved very soon, as newly collected Pv samples from Cambodia will be shifted to RITM and allow them to re-start testing combination tests.
The change in lot testing protocol has considerably reduced the workload at both testing laboratories (1 interval testing instead of 3).

10. Requesters

More than 40% of the requests came from RDT manufacturers, about a third (31.8%) from Government Aid or procurement agencies, followed by requests from National Control Programs.

Most manufacturer requests arise from pre-procurement lot-testing requests from procurement agencies. This is now the common mode of lot-testing for USAID. In such cases, FIND is unable to track the intended user for the lot unless the user makes prior arrangement with the requestor (the manufacturer) to be included in the lot testing request form.

Among the procurement agencies, the major requestor continues to be US PMI, while the majority of requests from National Programmes come from SE Asian countries. However, an increase in requests from other country programs reflects the recommendations of the Global Fund that lot-testing be performed.

A small number of requests for non-routine testing are received from field programmes to test RDTs withdrawn from the field, and very few form manufacturers requesting to ensure products newly modified are of appropriate sensitivity.

Requesters having submitted RDTs for routine and non routine lot testing January 2011 until September 2011	**% of RDT lots submitted**
Government Aid and Procurement Agencies (non endemic countries)	31.8%
Non-Governmental Organizations (NGOs) and Research Institutions	2.2%
National Malaria Control Programmes / WHO / UNICEF	23%
RDT manufacturers (for routine pre-shipment and non-routine testing)	43%

11. Contract renewal

The Technical Services Agreement with IPC has been extended for a further year, after confirmation of further funding for 2012 from JSI. A similar multi-year contract with annual review and escape clause is being prepared for RITM, and the contract there will thus be extended through 2012.

12. Future operation

Assurance of JSI funding for 2012 will allow the programme to continue for the next 12 months with close to the current level of service. More funds are required to ensure future operation, and bank replenishment. FIND is submitted a grant application to UNITAID, and is looking at other options to determine whether lot-testing can be extended beyond the current period of USAID funding, as well as actively working with WHO to address this situation.

Appendix D

Preselected RDT Manufacturers

Manufacturer	Test Name	Target Antigen	Species	Comments
Access Bio	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,
Alere-Inverness	Binax Now	HRP2	Pf/PAN	
ICT	Malaria Pf Cassette	HRP2	Pf	
	Malaria Combo Cassette	HRP2/pLDH	Pf/PAN	
Orchid Biomedical	Paracheck Pf Device	HRP2	Pf	
Premier Medical	First Response Mal Ag	HRP2	Pf	
	First Response Mal Ag Combo	HRP2/pLDH	Pf/PAN	
	First Response Mal Ag PAN	pLDH	PAN	
Span Diagnostics	ParaHit Dipstick	HRP2	Pf	Dipstick only

Manufacturer	Test Name	Target Antigen	Species	Comments
Standard Diagnostics	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 E

Preselected LLIN Manufacturers

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

Appendix F

WHO-Prequalified Manufacturers of ACTs

Manufacturer/Vendor	Brand	Comments
Novartis Pharma AG	Coartem® FDC , Coartem Dispersible® FDC	Artemether/Lumefantrine, Dispersible 20mg/120mg
Sanofi Aventis/Africasoins	Winthrop® FDC	Artesunate+Amodiaquine, four dosage presentations
UNICEF Supply Division	Various products	
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

Appendix G

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 the visit

Country	Quarter	% Stocked out of all ACTs	N	Source
Ghana	Oct–Dec 2010	8%	40	Quarterly End-Use Verification Report
	Jan–Mar 2011	0%	41	
	Apr–June 2011	0%	40	
	July–Sept 2011	21%	39	
Malawi	Oct–Dec 2010	NA	NA	End-Use was not conducted this quarter
	Jan–Mar 2011	15%	40	Quarterly End-Use Verification Report
	Apr–June 2011	5%	55	
	July–Sept 2011	12%	49	
Tanzania	Oct–Dec 2010	10%	20	Quarterly End-Use Verification Report
	Jan–Mar 2011	0%	20	
	Apr–June 2011	21%	312	

Country	Quarter	% Stocked out of all ACTs	N	Source
Ghana	Oct–Dec 2010	8%	40	Quarterly End-Use Verification Report
	Jan–Mar 2011	0%	41	
	Apr–June 2011	0%	40	
	July–Sept 2011	21%	39	
Malawi	Oct–Dec 2010	NA	NA	End-Use was not conducted this quarter
	Jan–Mar 2011	15%	40	Quarterly End-Use Verification Report
	Apr–June 2011	5%	55	
	July–Sept 2011	12%	49	
	July–Sept 2011	25%	306	
Zambia	Oct–Dec 2010	0%	28	Quarterly End-Use Verification Report
	Jan–Mar 2011	5%	20	
	Apr–June 2011	0%	28	
	July–Sept 2011	0%	30	

This indicator could not be calculated for the following TO3 presence countries, as the requisite data are not reported through an LMIS and/or these countries did not implement the End-Use Verification activity in FY 2011:

Burkina Faso

Burundi

Liberia: *The SPS project is responsible for End-Use Verification in Liberia.*

Madagascar

Malawi

Mozambique: *The first round of data collection for End-Use in Mozambique began in September 2011, but was not complete as of this reporting.*

Nigeria

Rwanda: *The SPS project is responsible for End-Use Verification in Rwanda.*

Zimbabwe

INDICATOR 2.

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

PPMRm—Quarter 1 of FY11 (October)

Product Name	**AL 6x 1**	**AL 6x 2**	**AL 6x 3**	**AL 6x 4**	**AS/AQ, FDC, 25/67.5mg**	**AS/AQ, FDC, 50/135 mg**	**AS/AQ, FDC, 100/270mg, 3 tabs**	**AS/AQ, FDC, 100/270mg, 6 tabs**	**AS+AQ 3+3**	**AS+AQ 6+6**	**AS+AQ 12+12**	**SP**	**RDTs**
Countries													
Angola													
Benin***			X										
Burkina Faso													
Burundi													
Ethiopia													
Ghana*						X							X
Kenya													X
Liberia*									X	X	X		
Madagascar**									X		X		
Malawi													
Mali ***	X												X

X

Product Name	AL 6x 1	AL 6x 2	AL 6x 3	AL 6x 4	AS/AQ, FDC, 25/67.5mg	AS/AQ, FDC, 50/135 mg	AS/AQ, FDC, 100/270mg, 3 tabs	AS/AQ, FDC, 100/270mg, 6 tabs	AS+AQ 3+3	AS+AQ 6+6	AS+AQ 12+12	SP	RDTs
Mozambique			X										
Senegal													
South Sudan													
Rwanda**													
Tanzania													X
Uganda													X
Zambia										X X			

*During this quarter, both Ghana and Liberia were intentionally stocking out of the AS+AS co-blistered presentations in an effort to transition to the co-formulated presentations of AS/AQ.

** For quarter 1 of FY11, TO3 was responsible for collecting PPMRm data in nine countries. As previously stated, the project cannot access data for Rwanda and Madagascar.

***AL 6x1 Dispersible is reported in Benin and Mali.

Stockout rates are summarized as follows:

AL 6x1 = 1/11 = 9 percent (Mali)

AL 6x2 = 0/10 = 0 percent

AL 6x3 = 2/10 = 20 percent (Benin, Mozambique)

AL 6x4 = 0/9 = 0 percent

AS/AQ FDC 25/67.5mg = 0/4 = 0 percent

AS/AQ FDC 50/135mg = 0/4 = 0 percent

AS/AQ FDC 100/270mg, 3 tabs = 1/6 = 17 percent (Burkina Faso)

AS/AQ FDC 100/270mg, 6 tabs = 0/6 = 0 percent

AS+AQ 3+3 = ¼= 25 percent (Liberia)

AS+AQ 6+6 = 2/4 = 50 percent (Ghana, Liberia)

AS+AQ 12 +12 = ¼= 25 percent (Liberia)

SP = 5/11 = 45 percent (Ghana, Senegal, Mali, Mozambique, Benin)
RDTs = 5/11= 45 percent (Ghana, Kenya, Mali, Tanzania, Uganda)

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

PPMRm—Quarter 2 of FY11 (January)

Product Name	AL 6x1	AL 6x2	AL 6x3	AL 6x4	AS/AQ, FDC 25/67.5mg	AS/AQ, FDC, 50/135 mg	AS/AQ, FDC, 100/270 mg, 3 tabs	AS/AQ, FDC, 100/270 mg, 6 tabs	AS+AQ 3+3	AS+AQ 6+6	AS+AQ 12+12	SP	RDTs
Country													
Angola	X	X	X	X									X
Benin**			X	X									
Burkina Faso							X	X					
Burundi													
DRC													
Ethiopia													X
Ghana**										X		X	X
Kenya													X
Liberia**													
Madagascar*													
Malawi	X		X							X			

Product Name	AL 6x1	AL 6x2	AL 6x3	AL 6x4	AS/AQ, FDC 25/67.5mg	AS/AQ, FDC, 50/135 mg	AS/AQ, FDC, 100/270 mg, 3 tabs	AS/AQ, FDC, 100/270 mg, 6 tabs	AS+AQ 3+3	AS+AQ 6+6	AS+AQ 12+12	SP	RDTs
Mali			X										X
Mozambique**									X	X		X	
Nigeria–Bauchi***	X		X	X									
Nigeria–Kano***	X	X	X	X					X		X		
Nigeria–Sokoto***					X								
Rwanda*													
Senegal		X		X					X				
South Sudan													
Tanzania													X
Uganda													X
Zambia		X											

*For quarter 2 of FY11, TO3 was responsible for collecting PPMRm data in ten countries. As previously stated, the project cannot access data for Rwanda and Madagascar.

**AL 6x1 Dispersible was reported in Benin and Mali.

*** Nigeria does not hold stock at the central level, so the USAID-supported states report on an individual basis.

X

X

For Quarter 2 of FY 2011 stockout rates were as follows:

AL 6x1 = 3/14 = 21 percent (Angola, Nigeria (Bauchi, Kano)

AL 6x2 = 4/13 = 31 percent (Angola, Nigeria (Kano), Senegal, Zambia)

AL 6x3 = 5/14 = 36 percent (Angola, Benin, Malawi, Nigeria [Bauchi, Kano])

AL 6x4 = 6/14 = 43 percent (Angola, Benin, Mali, Nigeria [Bauchi, Kano], Senegal)

AS/AQ FDC 25/67.5mg = 1/6 = 17 percent (Burkina Faso)

AS/AQ FDC 50/135mg = 0/6 = 0 percent

AS/AQ FDC 100/270mg, 3 tabs = 2/7= 29 percent (Burkina Faso, Mali)

AS/AQ FDC 100/270mg, 6 tabs = 1/7=14 percent (Burkina Faso)

AS+AQ 3+3 = 2/3= 66 percent (Mozambique, Nigeria [Kano])

AS+AQ 6+6 = 2/2 = 100 percent (Ghana, Mozambique)

AS+AQ 12+12 = 1/3= 33 percent (Nigeria [Kano])

SP = 7/16= 44 percent (DRC, Mali, Mozambique, Southern Sudan, Ghana, Nigeria [Bauchi], Tanzania)

RDTs = 8/13 = 62 percent (Angola, Ethiopia, Ghana, Kenya, Liberia, Mali, Tanzania, Uganda)

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

PPMRm—Quarter 3 of FY11 (April 2011)

Product Name	AL 6x1	AL 6x2	AL 6x3	AL 6x4	AS/AQ, FDC 25/67.5mg	AS/AQ, FDC, 50/135 mg	AS/AQ, FDC, 100/270 mg, 3 tabs	AS/AQ, FDC, 100/270 mg, 6 tabs	AS/AQ, FDC, 200/600mg, 3 tabs	AS+AQ 3+3	AS+AQ 6+6	AS+AQ 12+12	SP	RDTs
Country														
Angola	X	X	X	X										X
Benin														
Burkina Faso					X			X						X
Burundi														
DRC														X
Ethiopia						X								
Ghana							X	X	X		X	X		X
Kenya		X												
Liberia								X						
Madagascar														
Malawi														
Mali	X	X	X	X										
Mozambique										X				
Nigeria–Bauchi														
Nigeria–Kano														
Nigeria–Sokoto	X	X	X	X						X				

X

X

Product Name	AL 6x1	AL 6x2	AL 6x3	AL 6x4	AS/AQ, FDC 25/67.5mg	AS/AQ, FDC, 50/135 mg	AS/AQ, FDC, 100/270 mg, 3 tabs	AS/AQ, FDC, 100/270 mg, 6 tabs	AS/AQ, FDC, 200/600mg, 3 tabs	AS+AQ 3+3	AS+AQ 6+6	AS+AQ 12+12	SP	RDTs
Rwanda														
Senegal		X		X										
South Sudan														
Tanzania														X
Uganda	X	X	X											X
Zambia		X												

For Quarter 3 of FY 2011 stockout rates were as follows:

AL 6x1 = 4/12 = [Angola, Nigeria [Sokoto], Uganda, Mali)

*Note: 6x1 Dispersible is reported in Benin and Mali. X

AL 6x2 = 7/12 = 58 percent (Angola, Kenya, Mali, Nigeria [Sokoto], Senegal, Uganda, Zambia)

AL 6x3 = 4/14 = 29 percent (Angola, Mali, Nigeria [Sokoto], Uganda)

AL 6x4 = 4/14 = 29 percent (Angola, Mali, Nigeria [Sokoto], Senegal)

AS/AQ FDC 25/67.5mg = 1/7 = 14 percent (Burkina Faso)

AS/AQ FDC 50/135mg = 0/7 = 0 percent

AS/AQ FDC 100/270mg, 3 tabs = 2/7= 29 percent (Burkina Faso, Ghana)

AS/AQ FDC 100/270mg, 6 tabs = 3/7= 43 percent (Burkina Faso, Ghana, Liberia)

AS/AQ FDC 200/600mg, 6 tabs = 1/1=100 percent (Ghana)

AS+AQ 3+3 = 0/1= 0 percent

AS+AQ 6+6 = 0/1 = 100 percent (Ghana)

AS+AQ 12+12 = 0/1 = 100 percent (Ghana)

SP= 5/13 = 39 percent (Southern Sudan, Liberia, DRC, Mali, Mozambique)

RDTs = 6/13 = 46 percent (Angola, Burkina Faso, DRC, Ghana, Tanzania, Uganda)

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

PPMRm—Quarter 4 of FY11 (July)

Product Name	AL 6x1	AL 6x2	AL 6x3	AL 6x4	AS/AQ, FDC 25/67.5mg	AS/AQ, FDC, 50/135 mg	AS/AQ, FDC, 100/270 mg, 3 tabs	AS/AQ, FDC, 100/270 mg, 6 tabs	AS/AQ, FDC, 200/600mg, 3 tabs	AS+AQ 3+3	AS+AQ 6+6	AS+AQ 12+12	SP	RDTs
Country														X
Angola	X	X	X	X										
Benin														
Burkina Faso								X						X
Burundi														
DRC														
Ethiopia														
Ghana	X	X	X	X	X	X	X	X			X		X	
Kenya	X	X												X
Liberia								X						
Madagascar														
Malawi	X													
Mali	X	X	X	X										
Mozambique										X				

Product Name	AL 6x1	AL 6x2	AL 6x3	AL 6x4	AS/AQ, FDC 25/67.5mg	AS/AQ, FDC, 50/135 mg	AS/AQ, FDC, 100/270 mg, 3 tabs	AS/AQ, FDC, 100/270 mg, 6 tabs	AS/AQ, FDC, 200/600mg, 3 tabs	AS+AQ 3+3	AS+AQ 6+6	AS+AQ 12+12	SP	RDTs
Nigeria–Bauchi														
Nigeria–Benue	X	X	X	X						X	X	X	X	
Nigeria–Cross River	X	X	X	X						X	X	X	X	
Nigeria–Ebonyi	X	X	X	X						X	X	X	X	
Nigeria–Kano														
Nigeria–Nassarawa	X	X	X	X						X	X	X	X	
Nigeria–Oyo	X	X	X	X						X	X	X	X	
Nigeria–Zamfara	X	X	X	X						X	X	X	X	
Nigeria–Sokoto														
Rwanda														
Senegal														
South Sudan														
Tanzania	X		X	X										X
Uganda														X
Zambia	X		X	X										

X

For Quarter 4 of FY 2011 stockout rates were as follows:

AL 6x1 = 13/17 = 76 percent (Angola, Ghana, Kenya, Malawi, Mali, Nigeria [Benue, Cross River, Ebonyi, Nassarawa, Oyo, Zamfara], Tanzania, Zambia)

*Note: 6x1 Dispersible is reported in Mozambique.

AL 6x2 = 12/17 = 71 percent (Angola, Ghana, Kenya, Mali, Nigeria [Benue, Cross River, Ebonyi, Nassarawa, Oyo, Zamfara], Tanzania, Zambia)

*Note: 6x2 Dispersible is reported in Mozambique.

AL 6x3 = 11/17 = 65 percent = (Angola, Ghana, Mali, Nigeria [Benue, Cross River, Ebonyi, Nassarawa, Oya, Zamfara], Tanzania, Zambia)

AL 6x4 = 11/17 = 65 percent = (Angola, Ghana, Mali, Nigeria [Benue, Cross River, Ebonyi, Nassarawa, Oya, Zamfara], Tanzania, Zambia)

AS/AQ FDC 25/67.5mg = 1/6 = 17 percent = (Ghana)

AS/AQ FDC 50/135mg = 1/6 = 17 percent = (Ghana)

AS/AQ FDC 100/270mg, 3 tabs = 1/6 = 17 percent (Ghana)

AS/AQ FDC 100/270mg, 6 tabs = 3/6 = 50 percent (Burkina Faso, Liberia, Ghana)

AS+AQ 3+3 = 7/8 = 88 percent (Mozambique, Nigeria [Benue, Cross River, Ebonyi, Nassarawa, Oya, Zamfara])

AS+AQ 6+6 = 7/8 = 88 percent (Ghana, Nigeria [Benue, Cross River, Ebonyi, Nassarawa, Oya, Zamfara])

AS+AQ 12+12 = 6/8 = 75 percent (Nigeria [Benue, Cross River, Ebonyi, Nassarawa, Oya, Zamfara])

SP = 9/19 = 47 percent (Southern Sudan, Nigeria [Benue, Cross River, Ebonyi, Nassarawa, Oya, Zamfara], Mali, Ghana)

RDTs = 5/12 = 42 percent (Angola, Burkina Faso, Kenya, Tanzania, Uganda)

Indicator 3

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

Country	Functioning LMIS	Note
Burkina Faso	Yes	There is a combined Logistics and Statistics data reporting system for malaria activities in Burkina. Stock on hand and consumption data are reported monthly from health facilities and from community health workers. At the district level, the district data manager enters the health facility data into a database designed to report malaria activities, and the data are sent to the central level through the region via Internet. The database has been in use since December 2010 with technical and financial support from the project.
Ghana	Yes	There is a system in place that collects stock on hand and consumption data from all SDPs in the country. However, the reports are often incomplete and delayed. The SDPs report to their respective district health directorates, which in turn aggregate and report to the regions, which subsequently report to the central level and the programs.
Liberia	No	A total of 167 health facilities are using the new LMIS forms and the forms are being rolled out to other health facilities. There are a total of 550 health facilities in the country. Thirty percent of Liberia has a functioning LMIS and this number is growing.
Madagascar	No	NMCP conducts data collection but is hindered by a lack of capacity. A database also exists, but health facilities do not report consistently; for those that do, the forms are not always filled out properly. Additionally, due to the political context, assistance to the public sector has been restricted. Therefore, the project is unable to use its expertise to assist public health facilities with data collection and reporting.
Malawi	Yes	One hundred percent of health facilities in Malawi are integrated into the LMIS. On average, a 70% monthly reporting rate was recorded last FY. The LMIS provides an accurate update on consumption and stock on hand of each reporting health facility and the proportion of health facilities that report each month from each district countrywide. When the LMIS report is consistently filled out and transmitted, it provides an accurate source of data to calculate monthly resupply quantities and feeds into the country's quantification exercises.
Mozambique	No	Mozambique has an LMIS but it does not routinely provide data from all SDPs in the country.

Country	Functioning LMIS	Note
		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. An automated system (SIMAM) is being implemented at the provincial level. 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 Commodities Logistics System has been designed and is in the process of being implemented. Training at the service delivery point level has been done in six states (out of a total of 37) and bimonthly reporting has commenced in three of these six states.
Rwanda	Yes	There is an LMIS, but with 82.1% data collection from all SDPs. Results are obtained by dividing the number of reporting facilities by the total number of facilities dispensing malaria commodities
Tanzania	No	Tanzania does not currently have an LMIS that routinely collects and reports stock status data from all SDPs in the country. DELIVER currently has several mechanisms in place to collect stock status data from the SDPs (End Use, ACT monitoring, etc.); however, this is done on an integral basis, does not cover all SDPs, and is funded by the project.
Zambia	Yes	Zambia has a well-functioning LMIS that routinely collects and reports stock status data. However, the data are only reported from 16 districts where the Essential Medicines Logistics Improvement Program has been rolled out. The roll-out to the rest of the country is scheduled to start in the first quarter of 2012.
Zimbabwe	Yes	A manual system exists for routine collection of LMIS data from SDPs. The country is currently rolling out an AutoDRV. A central-level LMIS (TOP UP) exists to analyze and report stock status data. A TOP UP upgrade is in progress.

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 TO3 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 TO3 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 SPS project at the conclusion of FY10, as per the FY10 MOP, so it is 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 FY11 and carried out three rounds of data collection during this fiscal year, beginning in January.
Mozambique	Yes	The project successfully began the first round of End-Use Verification in Mozambique at the end of September.
Nigeria	No	Due to an overall lack of malaria commodities throughout the country, the decision was made to postpone implementation of End-Use Verification until it is programmatically feasible, potentially during FY12.
Rwanda	NA	Although Rwanda is a TO3 presence country, responsibility for the End-Use activity was transferred to the SPS project, as per the FY10 MOP, so it is not included in the denominator for this indicator.
Tanzania	Yes	Tanzania has been carrying out the End-Use activity quarterly since January 2009
Zambia	Yes	Zambia has been carrying out the End-Use activity quarterly since November 2009.
Zimbabwe	No	As a new PMI country, Zimbabwe has only recently been tasked with implementing the End-Use activity, which is expected to take place in the second quarter of FY2012.

Appendix H

Environmental Monitoring and Mitigation Plan (EMMP)

Indicators

The following indicators apply solely to the work done under Task Order 7, which implemented only procurement activities during the reporting period.

Indicator	
Number of instances when DELIVER TO7 has been requested to provide guidelines of training	0
Recipients receive product-specific information documenting disposal requirements	Yes
Percentage of disposed products under project control returned to supplier or dealt with according to WHO guidelines	N/A *There were no disposed products under project control.
Percentage of LLIN shipments with preshipment test reports available	100 percent
Percentage of LLINs procured that are registered in accordance with country policies (if required by the country)	100 percent
Recorded instances of assistance provided for development/distribution of BCC materials	0

Appendix I

Performance Monitoring Plan (PMP)

USAID | DELIVER PROJECT Task Order Malaria
Performance Monitoring Plan

Jan-11

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

Outcome	Indicators	Numerator / Denominator	Source	Frequency	Comments	Measures project performance	Measures factors beyond project control
Objective 2: Strengthen in-country supply systems and capacity for management of malaria commodities (30-40 percent LOE)							
Monitoring of in-country supply chain performance	Facility stockout rate: by product, the percentage of facilities that experienced a stockout on the day of the visit/report	In 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	
Objective 3: Improve global supply and availability of malaria commodities (5-7 percent LOE)							
Support global and regional stakeholders/forums of SCM technical issues	Number of global, regional and country level malaria initiatives with DELIVER technical contributions	N/A	Program reports	Semi-annual		X	

Appendix J

Deliverables Status for FY11

Proposed Deliverable	Person Responsible	Due	Status
Objective 1		**Budget: U.S.$3,709,988**	
Procurement scorecard	L. Todhunter	Reported in Semi-annual Report (May 15, 2011) and Annual Report (November 15, 2011)	
Updated list of pre-approved vendors for malaria commodities	M. Jaureguizar	RDTs: 1st quarter FY11	Completed
	M. Jaureguizar	LNs: 3rd quarter FY11	Completed
	M. Jaureguizar	Pharmaceuticals: as new pharmaceuticals become available/WHO prequalified	
Develop and maintain order plans for planned procurements	Order and Supply Coordinator	Provide updated copies in the annual report and upon request	Completed
Product Fact Sheets	T. Ndoye	As new products, product information, or packaging become available	Completed
Freight rate validation	E. Segtore	Reported in Annual Report (November 15, 2011)	
ACT freight and logistics analysis	G. Rebour	2nd Quarter FY2011	Completed
QA Report Card	S. Hamel	Reported in Semi-annual Report (May 15, 2011) and Annual Report (November 15, 2011)	
FIND RDT Lot-testing Update	S. Hamel	Reported in Semi-annual Report (May 15, 2011) and Annual Report	

Proposed Deliverable	Person Responsible	Due	Status
		(November 15, 2011)	
LLIN Analysis	G. Rebour	September 30 2011	Completed
DelPHi system is available according to service level agreement.	L. Oligar	Continuously. Uptime statistics for the system are reported monthly in the MIS Performance Metrics Report.	
MIS Maintenance status report showing completed and in-progress projects as directed by the Change Control Board	L. Oligar	Reporting on system modifications continues on a weekly basis.	Sent weekly
Objective 2		**Budget: $2,711,423**	**STATUS**
Timely mobilization and response to USAID requests for technical assistance	L. Hare	Periodic	N/A
Updated country work plans	L. Hare T. Ndoye N. Printz	October 31, 2010; October 31, 2011	Completed
End-Use Verification Reports	M. Frost	January 31, 2011; April 30, 2011; July 31, 2011; October 31, 2011	Completed
Two-page malaria logistics highlights	T. Ndoye	Two per year posted on website	Completed
Paper on Zambia malaria/essential medicines logistics system pilot results	N. Printz	3rd Quarter FY2011	Completed
Linking LMIS and HMIS data Report highlighting root cause of differences in data GIS maps with HMIS and LMIS data	N. Printz	September 2011	Completed

Proposed Deliverable	Person Responsible	Due	Status
Malaria section of JO course	T. Ndoye	January 2011 and June 2011	Completed
PMSS analysis and implementation	T. Ndoye	March 2011	Completed
PPMRm reports	M. Nelson	October 2010, January 2011, April 2011, July 2011, October 2011, January 2012, April 2012	October 2010, January 2011, April 2011, July 2011, and October 2011 reports were completed.
Analysis demonstrating link between product availability and malaria indicators	M. Frost	2nd Quarter FY2011	Completed
Malaria supply chain logistics guidelines Draft guidelines Published guidelines	T. Ndoye	1st Quarter FY2011 2nd Quarter FY2011	Completed
Review and field testing of RBM PSM-WG/MSH quantification guide Participation in review meeting	N. Printz	2nd Quarter FY2011 3rd Quarter FY2011	Completed
Regional meeting	L. Hare	3rd Quarter FY2011	Completed

Objective 3 **Budget: $458,365**

LN recycling pilot report	R. Rack	2nd Quarter FY2011	Completed
LN retire and reuse meeting	R. Rack	4th Quarter FY2011	Not Completed
RDT disposal pamphlet	R. Rack	2nd Quarter FY2011	Completed
Meeting briefing notes or presentations with recommendations	M. Nelson	TBD (depends on meeting/conference attendance)	Completed

Other **Budget: $104,014**

Proposed Deliverable	Person Responsible	Due	Status
Annual Report for FY2010	L. Hare	Draft due November 15, 2010	Submitted and approved
Semi-Annual Report for FY2011	L. Hare	Draft due May 15, 2011	Submitted and approved
Work plan for FY2012	L. Hare	Draft due October 30, 2011	Submitted to USAID for review
Annual Report for FY2011	L. Hare	Draft due November 15, 2011	Submitted to USAID for review
Project Completion Report	L. Hare	June 1, 2012	

Appendix K

TO3-Funded Short-Term Technical Assistance, October 1, 2010–September 30, 2011

Name	Destination	Travel Date
Rebour, Gilles	Belgium	10/10/10–10/15/10
Dia, Ousmane	Tanzania	10/10/10–10/23/10
Adoga, Christianah	USA	10/16/10–10/24/10
Ainsworth, Rich	Nigeria	10/18/10–11/19/10
Ouedraogo, Youssouf	Liberia	10/19/10–10/27/10
Clarke, Zac	Madagascar	10/30/10–11/14/10
Dowling, Paul	Malawi	10/31/10–11/20/10
Takang, Eric	Tanzania	11/02/10–11/21/10
Arturo, Sanabria	USA	11/03/10–11/09/10
Waweru, Jayne	Liberia	11/06/10–11/27/10
Kiema, Moses	Madagascar	11/06/10–11/13/10
Warren, Chris	Malawi	11/12/10–11/27/10
Dia, Ousmane	Tanzania	11/14/10–12/10/10
Jamu, Styn	Malawi	11/17/10–12/02/10
Rebour, Gilles	Madagascar	11/21/10–12/14/10
Rack, Ralph	Madagascar	11/21/10–12/14/10
Hudgins, Tony	Malawi	11/23/10–12/03/10
Larkin, John	Nigeria	11/29/10–12/17/10
Kagone, Meba	Burkina Faso	12/14/10–01/07/11
Kiema, Moses	Zambia	01/09/11–01/22/11
Kagone, Meba	Ghana	01/10/11–01/15/11
Ainsworth, Rich	Malawi	01/17/11–02/18/11
Rebour, Gilles	Angola	01/22/11–02/11/11
Warren, Chris	Belgium	01/28/11–02/03/11

Name	Destination	Travel Date
Printz, Naomi	Zimbabwe	01/30/11–03/20/11
McCord, Joe	Malawi	01/31/11–02/05/11
Stannard, Paul	Switzerland	02/01/11–02/05/11
Amenyah, Johnnie	Rwanda	02/07/11–02/18/11
Umaru, Farouk	Malawi	02/07/11–02/23/11
Rack, Ralph	Switzerland	02/08/11–02/12/11
Ndoye, Thidiane	Madagascar	02/14/11–02/25/11
Warren, Chris	Malawi	02/16/11–03/06/11
Stannard, Paul	Denmark	02/20/11–02/25/11
Felling, Bill	Zambia	02/20/11–03/05/11
Hendrix, Catherine	Burundi	02/25/11–03/13/11
Frost, Mike	Zimbabwe	02/28/11–03/18/11
Dia, Ousmane	Ghana	04/11/11 04/15/11
Durgavich, John	Ghana	04/11/11 04/15/11
Hare, Lisa	Ghana	04/11/11 04/15/11
Hauslohner, Peter	Ghana	04/11/11 04/15/11
Hudgins, Tony	Ghana	04/11/11 04/15/11
Kabuya, Willy	Ghana	04/11/11 04/15/11
Kagone, Meba	Ghana	04/11/11 04/15/11
Matoyo, Dorothy	Ghana	04/11/11 04/15/11
Melendez, Sarah	Ghana	04/11/11 04/15/11
Muhire, Gladys	Ghana	04/11/11 04/15/11
Ndahinyuka, Jovith	Ghana	04/11/11 04/15/11
Ogwuche, Emmanuel	Ghana	04/11/11 04/15/11
Ouedraogo, Youssouf	Ghana	04/11/11 04/15/11
Pehe, Norbert	Ghana	04/11/11 04/15/11
Printz, Naomi	Ghana	04/11/11 04/15/11
Rakotomanga, Avotiana	Ghana	04/11/11 04/15/11
Rosche, Tim	Ghana	04/11/11 04/15/11
Stannard, Paul	Ghana	04/11/11 04/15/11
Takang, Eric	Ghana	04/11/11 04/15/11
Amenyah, Johnnie	Ghana	04/11/11 04/16/11
Waweru, Jayne	Ghana	04/11/11 04/16/11
Dowling, Paul	Ghana	04/11/11 05/07/11
Patykewich, Leslie	Malawi	04/19/11 05/04/11
Rosen, Jim	Ghana	04/25/11 05/07/11

Name	Destination	Travel Date
Breese, Katie	Rwanda	05/20/11 05/28/11
Ferguson, Allen	Angola	05/23/11 06/09/11
Warren,Chris	Angola	05/25/11 06/17-11
Nyamupachitu, Theresa	Zimbabwe	05/25/11 06/21/11
Ainsworth, Rich	Malawi	05/30/11 06/17/11
Clark, Malcom	USA	06/01/11 06/10/11
Forson, Ivy	Tanzania	06/05/11 06/15/11
Frost, Mike	Mozambique	06/11/11 06/18/11
Baddoo, Reginald Laud	Kenya	06/12/11 06/18/11
Ravelojaona, Aina	Zambia	06/12/11 06/25/11
Rogosh, Alan	Zambia	06/12/11 06/25/11
Korkor Allotey, Naa	Liberia	06/15/11 06/25/11
Takang, Eric	Tanzania	06/19/11 06/29/11
Bizimana, Thomas	Switzerland	06/26/11 07/01/11
Coker, Babajide	Switzerland	06/26/11 07/01/11
Kamutenga, Philip	Malawi	06/27/11 06/27/11
Warren, Chris	Malawi	06/27/11 07/15/11
Clark, Malcom	Malawi	07/02/11 07/02/11
Slyvester, Glynis	Liberia	07/03/11 07/20/11
Waweru, Stanley	Liberia	07/04/11 07/04/11
Printz, Naomi	Zambia	07/11/11 07/11/11
Kearl, Rachel	Liberia	07/12/11 07/30/11
Paprocki, David	Liberia	07/12/11 07/30/11
Kwo, Victor	Nigeria	07/19/11 07/29/11
Ntakarutimana, Oscar	Kenya	07/25/11 07/28/11
Sinkenguburundi, G.	Kenya	07/25/11 07/28/11
Ginchereau, Paula	Malawi	07/25/11 08/12/11
Blankenship, Lisa	Liberia	07/30/11 08/12/11
Ahmed, Muhammed	Liberia	07/30/11 08/21/11
Gonter, Abbey	Zimbabwe	08/07/11 08/24/11
Ferguson, Allen	Benin	08/07/11 09/06/11
Tuddenham, Jennifer	Tanzania	08/15/11 08/19/11
Tuddenham, Jennifer	Tanzania	08/20/11 09/06/11
Bell, David	USA	09/11/11 09/14/11
Felling, Barbara	Zimbabwe	09/17/11 09/28/11
Hare, Lisa	Switzerland	09/26/11 09/28/11

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

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