



OFFICE OF INSPECTOR GENERAL

AUDIT OF USAID/BENIN'S IMPLEMENTATION OF THE PRESIDENT'S MALARIA INITIATIVE

AUDIT REPORT NO. 7-680-11-004-P
FEBRUARY 14, 2011

DAKAR, SENEGAL



Office of Inspector General

February 14, 2011

MEMORANDUM

TO: USAID/Benin Mission Director, Kevin Armstrong

FROM: Regional Inspector General/Dakar, Gerard Custer /s/

SUBJECT: Audit of USAID/Benin's Implementation of the President's Malaria Initiative
(Report Number 7-680-11-004-P)

This memorandum transmits our report on the subject audit. In finalizing the report, we carefully considered your comments on the draft report and have included the comments in their entirety in Appendix II.

The report includes 13 recommendations. Based on actions taken by the mission and supporting documentation provided, final action has been taken on Recommendations 8 and 9 and management decisions have been reached on Recommendations 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, and 13. Please provide the Audit Performance and Compliance Division in the USAID Office of the Chief Financial Officer with the necessary documentation to achieve final action.

I appreciate the cooperation and courtesy extended to my staff during the audit.

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Abbreviations	
The following abbreviations appear in this report:	
ACTs	Artemisinin-based Combination Therapy Treatments
ADS	Automated Directives System
COTR	Contracting Officer’s Technical Representative
FY	Fiscal Year
IRS	Indoor Residual Spraying with Insecticides
ITNs	Insecticide-Treated Bed Nets
IPTps	Intermittent Preventive Treatments for Malaria in Pregnancy
MOH	Ministry of Health
PMP	Performance Management Plan
PSI	Population Services International
PMI	President’s Malaria Initiative
RIG	Regional Inspector General
RTI	Research Triangle Institute International
SPS	Strengthening Pharmaceutical Systems
SP	Sulfadoxine-Pyrimethamine

SUMMARY OF RESULTS

Malaria is endemic in Benin and is a major cause of morbidity and mortality. The disease reportedly accounts for 40 percent of outpatient consultations, 25 percent of all hospital admissions, and about 32 percent of deaths of children under 5. With 30 percent of the population living in poverty and a per capita annual income of only \$530, Benin struggles to cope with the strain that malaria places on the country's economic development, as well as on public health. According to the World Bank, households in Benin spend approximately one quarter of their annual income on the treatment and prevention of malaria.

Benin is one of 15 countries¹ benefiting from the President's Malaria Initiative (PMI), a 5-year, \$1.2 billion U.S. Government initiative led by USAID and implemented with the Centers for Disease Control and Prevention. PMI aims to scale up malaria prevention and treatment interventions rapidly in high-burden countries in sub-Saharan Africa to reduce malaria-related mortality in each by 50 percent. This goal will be achieved by reaching 85 percent coverage of the most vulnerable groups—children under 5 and pregnant women—with proven preventive and therapeutic interventions, including artemisinin-based combination therapy treatments (ACTs), insecticide-treated bed nets (ITNs), intermittent preventive treatments for malaria in pregnancy (IPTps), and indoor residual spraying with insecticides (IRS).

USAID/Benin's fiscal year (FY) 2008, 2009, and 2010 funding for PMI totaled \$13.9 million, \$13.8 million, and \$21 million respectively, of which 44 percent was designated for the purchase of commodities. The mission expended \$9.6 million during FY 2009 and \$16.2 million during FY 2010 for PMI activities. During this period, the mission worked to implement these activities through cooperative agreements and task orders with about 13 prime partners and dozens of subpartners. USAID's Regional Inspector General (RIG)/Dakar selected for audit the four partners and programs shown in the table on the following page.

The objective of the audit was to determine whether USAID/Benin's President's Malaria Initiative program was achieving its main goals of preventing and treating malaria.

The audit determined that the program was partially achieving its goals of preventing and treating malaria through purchasing and distributing bed nets and performing indoor residual spraying.

USAID/Benin distributed 834,000 ACTs, all of which were purchased in a prior year, exceeding its target of distributing 479,000 treatments during FY 2009. The mission explained that although a large quantity of ACTs had been distributed to the Government of Benin's Ministry of Health (MOH) in FY 2008, the government failed to redistribute these ACTs, which remained in a warehouse, nearing expiration. Therefore, to ensure that ACTs at risk of expiration reached beneficiaries, the mission assisted the MOH in developing and implementing a distribution plan, including distributing treatments to the private sector and offering community outreach sessions on treating malaria.

¹Countries include Angola, Benin, Ethiopia, Ghana, Kenya, Liberia, Madagascar, Malawi, Mali, Mozambique, Rwanda, Senegal, Tanzania, Uganda, and Zambia.

Audited Programs

Implementing Partner	Program	Agreement/Task Order	
		Amount (\$ million)	Dates
John Snow Inc.	The DELIVER program procures bed nets, ACTs, sulfadoxine-pyrimethamine (SP) for pregnant women, rapid diagnostic tests, severe malaria treatment kits, microscopes and reagents and transports them to health facilities	9.8 (through 9/2010)	4/2008– 9/2015
Research Triangle Institute International (RTI)	The IRS program sprays households in selected areas	7.7 (through 9/2010)	1/2008– 9/2015
Population Services International (PSI)	The ITN program transports ITNs from health depots to health facilities; procures and distributes ITNs through the private sector; and provides malaria-related information, education, communication, and behavior-change communication services	3.2	7/2008– 12/2010
Management Sciences for Health	The Strengthening Pharmaceutical Systems (SPS) program trains and provides technical assistance to the National Malaria Control Program, health district commodity managers, and the Central Medical Store's staff on forecasting, managing supply, and tracking and storing commodities	1.6	9/2008– 1/2011

Concerning bed nets, the mission did not purchase or distribute as many bed nets as intended. The mission explained that only 835,000 of the planned 1,262,000 nets were purchased in FY 2009 because another donor purchased 475,000 bed nets for the MOH and the additional bed nets were not ordered to avoid a surplus larger than the storage capacity in the country.

As for indoor spraying, the mission reportedly sprayed 156,223 structures, exceeding its target of 142,184. However, the mechanics and timing of reporting and confusion over the definitions used for houses, structures, and family members raised questions concerning the reliability of reported data. Accordingly, the audit could not reach any conclusions on the spraying results.

Nonetheless, the activities contributed to the goals of the PMI program in ways not measured by the indicators. For example, the DELIVER program was effective in implementing the interim distribution plan that provided millions of dollars worth of commodities directly to health facilities with minimal delay after the commodities arrived at the port. The IRS program performed entomological monitoring to assess the distribution and seasonality of mosquitoes, as well as their susceptibility to insecticides. Finally, the SPS program completed the first end-user verification survey in the country and took the first steps toward making the pharmaceutical sector more effective and efficient with modern reporting and recording of data.

Notwithstanding the achievements highlighted above, the audit found that:

- A partner provided inconsistent, unreliable data on spraying (page 5).

- Health facilities did not distribute, store, or dispose of malaria commodities adequately (page 7).
- A partner did not track or manage inventory effectively (page 10).
- Bed nets were missing, diverted, and sold for profit (page 12).
- The Ministry of Health's disciplinary action against one hospital deprived beneficiaries of bed nets and drugs (page 14).
- Some important PMI indicators were not included in monitoring plans (page 15).

The mission has reported to the Office of Inspector General's Office of Investigations the potential acts of fraud related to missing and diverted bed nets and bed nets sold for profit.

The report recommends that USAID/Benin:

1. Identify alternative ways in which the spray operators can tally results (page 7).
2. Formulate clear definitions of terms and implement internal controls to ensure that consistent terminology is used in gathering and reporting data on indoor residual spraying with insecticide (page 7).
3. Develop and implement procedures for periodic validation of insecticide-spraying data through spot checks (page 7).
4. Strengthen controls to ensure that (1) facilities' drug inventories and drug consumption are verified before drug requests are approved and delivered and (2) mechanisms are in place to track drugs that are out of stock or will be out of stock to ensure timely replacement. (page 10).
5. Work through the Ministry of Health to take the appropriate steps to strengthen controls to ensure the proper storage of antimalarial drugs at all facilities (page 10).
6. Communicate to the Ministry of Health the need to implement a plan to destroy expired drugs, and a plan to store, pick up, and destroy drugs as they expire (page 10).
7. Require RTI to improve its inventory tracking process and to conduct training on inventory management (page 12).
8. Require RTI to distribute the nets in its warehouse (page 12).
9. Increase site visits by its health team and develop a site visit template (page 14).
10. Document and communicate problems associated with bed nets (page 14).
11. Work with the Ministry of Health to develop a strategy for reinstating the Abomey regional hospital into the ACT treatments distribution network (page 15).
12. Update its performance management plan to include important malaria indicators (page 16).

13. Update its documents to require partner reporting on relevant malaria indicators and other performance measures (page 16).

Detailed findings appear in the following section. The audit's scope and methodology are described in Appendix I.

USAID/Benin, whose comments are included in their entirety in Appendix II, agreed with all of our recommendations. Based on actions taken by the mission and supporting documentation provided, final action has been taken on Recommendations 8 and 9; and management decisions have been reached on Recommendations 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, and 13. Our evaluation of management comments appears on page 17.

AUDIT FINDINGS

Partner Provided Inconsistent, Unreliable Data on Spraying

According to USAID's Automated Directives System (ADS) Chapter 203, "Assessing and Learning," performance data should meet data quality standards, including standards for reliability and precision (i.e., data should be sufficiently precise to present a fair picture of performance), and missions must take steps to ensure that submitted data are reasonably accurate and adequately represent the intended result.² In addition, the Government Accountability Office's (GAO's) publication, *Standards for Internal Control in the Federal Government*,³ includes among control activities common to all agencies the accurate and timely recording of transactions and other significant events. The publication indicates that transactions and other significant events should be clearly documented with readily available documentation.

The audit found that the spray data collected and reported for one of PMI's main indicators (*number of houses sprayed with IRS*) were inconsistent, unreliable, and extremely difficult to verify because (1) the physical nature of the spray activity inhibits accurate record keeping and (2) definitions used to define areas sprayed and people benefiting were unclear.

First, physical limitations complicate record keeping. Spray operators find it difficult to manage the spray activities and collect data simultaneously because spraying is a physically demanding task and because operators are not allowed to remove any of their protective equipment while in the field to record data. Consequently, spray operators tended to record the number of structures sprayed or the number of people protected not at the time of spray, but at the end of the day. Of the two spray operators interviewed, neither had filled out his tracking sheet; one was waiting to do so at the end of day, and one was tracking data on a scrap piece of paper, intending to transfer the information to the official form later.

Second, there is confusion about the terms used to measure and record areas sprayed. At the beginning of the program, the mission tracked results for the number of houses sprayed. However, the term "houses" was interpreted differently by many people and caused confusion; therefore, the mission and the implementing partner, RTI, changed from counting "houses" to counting "structures." While RTI and the mission consider these terms synonymous and the change a simplification, because both RTI and the mission also provide data on "rooms" and "households" in their reports, the change in terminology caused even more confusion in interpreting and recording reported results.

For example, to verify the operators' data, the audit team visited one residence in the commune of Adjohoun. There was some confusion about the number of structures sprayed and the number of people who lived there. While the spray operator reported that four structures had been sprayed, thus protecting 15 people, the head of household stated that 25 people lived in those four structures.

² ADS 203.3.5.1, "Data Quality Standards."

³ GAO/AIMD-00-21.3.1 (11/99), p.15.

Collecting results for this indicator may be complicated in PMI countries because of the terms used. Generally, according to Malaria Indicator Surveys:

- A structure is a freestanding building that can have one or more rooms for residential or commercial use. Residential structures can have one or more dwelling units (e.g., a single house or an apartment building). Where one household inhabits several small dwellings, as in a rural area, all the dwellings together, whether they are fenced in or not, constitute a structure.
- A household consists of a person or a group of related or unrelated persons who live together in the same dwelling unit, acknowledge one adult male or female as the head of the household, share the same housekeeping arrangements, and are considered to constitute one unit. A group of people may live together in the same house, but if each person has separate eating arrangements, each person should be counted as a separate, one-person household. Collective living arrangements—e.g., army camps, boarding schools, or prisons—are not considered households.

These terms are specifically defined for malaria activities under PMI. Yet spray operators, partners, and mission staff sometimes confused them and used the terms “structures,” “rooms,” “houses,” and “households” interchangeably, as noted below:

- In 2008, RTI reported in its December 2008 End of Spray Report 142,814 *structures* and 388,455 *rooms* sprayed. For the same period, USAID reported 142,814 *structures* in its FY 2010 malaria operational plan and 388,455 *structures* in its FY 2009 malaria operational plan.
- In 2009, RTI reported a target of 151,783 *households* in its work plan, but classified those as *structures* in its End of Spray Report. For FY 2009, USAID reported a target of 141,154 *households* in the malaria operational plan and 142,184 *houses* in its performance management plan (PMP).
- For FY 2009, USAID reported 156,223 *houses* sprayed in its PMP, whereas RTI’s End of Spray Reports recorded 156,233 *structures* sprayed.
- In its work plans, RTI set targets for each spray round in terms of the number of *households* sprayed. However, in its End of Spray Reports, RTI reported results for the number of *structures* sprayed, instead of *households*. USAID reported results in its annual program report based on *houses* sprayed.

All of these discrepancies occurred because RTI lacked internal controls to ensure proper collection and reporting of results. The mission should implement, in coordination with RTI, internal controls including periodic validation of the integrity of the collected data through spot checks. Periodic verification of reported results helps ensure that consistent and reliable data are collected for reporting and management decision making.

In addition, according to a USAID mission official, the data collection process is complicated by cultural factors. USAID/Benin’s January 2010 data quality assessment documented some of the issues described above and highlighted cultural factors that have been found to affect data accuracy—namely, the tendency to underreport or overreport the number of family members. Some Beninese people underreport the number of family members for fear that counting them

may bring about death, while some polygamous families overreport family members by counting the husband multiple times.

Without internal controls to confirm that reported results were (1) valid, (2) supported, and (3) accurately summarized before they were reported to the mission, results were inconsistent and undocumented. Moreover, the lack of clearly defined terms used in indicators on which data were collected compromised data quality and made monitoring and evaluating program performance difficult.

RTI is aware of some of these problems and has provided responses to several data quality recommendations made following the 2010 data quality assessment. Despite awareness of the problems and actions taken to eliminate them, RTI and USAID agree that more work needs to be done to improve data quality, which is particularly important to support management decisions and to manage for results. Therefore, we make the following recommendations:

Recommendation 1. *We recommend that USAID/Benin, in conjunction with Research Triangle Institute, identify alternative ways in which spray operators can tally results.*

Recommendation 2. *We recommend that USAID/Benin, in consultation with Research Triangle Institute, formulate clear definitions of terms and implement internal controls to ensure that consistent terminology is used in gathering and reporting data on indoor residual spraying with insecticide.*

Recommendation 3. *We recommend that USAID/Benin develop and implement procedures to validate insecticide-spraying data periodically through spot checks.*

Health Facilities Did Not Distribute, Store, or Dispose of Malaria Commodities Adequately

ADS Chapter 596, “Management’s Responsibility for Internal Control,” requires managers and staff to implement internal controls to safeguard assets against waste, loss, unauthorized use, and misappropriation.⁴ In addition, GAO’s publication *Standards for Internal Control in the Federal Government*, pages 14 and 15, states that an agency needs to establish physical controls to safeguard vulnerable assets. The publication also states that transactions should be recorded promptly to maintain their relevance and value to management in controlling operations and making decisions.

Although some health facilities stored commodities with proper controls, maintained current and accurate records, and provided proper care to clients, during visits to health facilities the auditors noted problems with the storage and distribution of PMI-funded antimalarial drugs. Specifically, the auditors found that controls over antimalarial drugs were inadequate, storage rooms were sometimes disorganized, storage temperatures likely exceeded established limits, expired drugs and bed net bags were not properly destroyed, the supply of bed nets was uneven among facilities, and stock-outs of important antimalarial drugs occurred frequently, as described below.

⁴ ADS 596.3.1, “Establishing Internal Controls.”

Inadequate Controls Over Antimalarial Drugs. Three of the 11 health centers visited were involved in improper distribution and sale of antimalarial medicines. For example, a health facility in Dassa had utilized its supply of drugs faster than projected. Based on calculations made by the National Malaria Control Program, the health facility's supply of drugs should have lasted 9 months, but the health facility had depleted its supply in only 2 months. The facility manager stated that drugs were provided to the local health facilities on demand without verifying that the demands were reasonable.

At a health center in Kpingni, the auditors were unable to reconcile the inventory records with the available stock. The discrepancy amounted to about 450 doses of antimalarial drugs. Further examination of the center's records revealed the following:

- The center issued multiple doses of antimalarial medicines to several individuals. The pharmacist explained that medicines were often issued to one family member to distribute to the entire family, even without ever examining, diagnosing, or providing a proper prescription for any of the family members.
- The pharmacist wrote himself a receipt for several doses of ACTs, which he explained were to be distributed to people he knew when needed.
- The number of treatments prescribed in the daily patient log for September did not correspond to the number of patients seen. According to the log, 8 patients tested positive for malaria, but the center dispensed 85 treatments instead of 8. The pharmacist did not have an explanation.

Inadequate Commodity Storage Conditions. Despite PSI's efforts to equip health centers to handle the stock they receive, the physical conditions of some storage rooms were not always adequate. At a health facility in Comé, the PMI-funded drugs were kept in a room that could not be locked. Moreover, other pharmaceutical commodities, such as saline bags, were stacked haphazardly directly on floors, and boxes were torn and damaged.

The Food and Drug Administration states that Coartem, a type of antimalarial drug commonly distributed by USAID in Benin, requires storage at room temperature or at temperatures not to exceed 30 degrees Celsius. At 8 of the 11 health facilities visited, storage temperatures observed most likely exceeded the established limits because (1) the average high temperature in Benin for 8 months out of the year was 30 degrees or higher and (2) these eight facilities had no thermometers or air-conditioners to monitor or modify the storage temperature. Therefore, it appears likely that commodities were exposed regularly to less-than-ideal storage temperatures.

Extended storage in poor conditions can lead to reduced efficacy and shelf life of PMI-funded commodities and other pharmaceutical supplies. Items that are improperly stored and exposed to temperatures that exceed the recommended limits may be ineffective or even harmful to patients.

Improper Disposal of Expired Drugs and Bed Net Bags. One health facility in Abomey had several boxes of expired drugs and discarded bed net bags that had been awaiting proper disposal for over a year. The Ministry of Health has a waste management policy, but barriers to implementing it included lack of money for incinerators, transportation, and per diem for the personnel involved. There is no plan for disposing of the expired drugs and bed net bags. Consequently, drugs pile up in unrestricted areas, as shown on the following page.



Expired drugs awaiting proper disposal at Abomey Regional Hospital. (Photo by RIG/Dakar, September 30, 2010)

Without a workable policy and a plan to manage and dispose of expired drugs, more drugs will accumulate, and the facilities may take it upon themselves to dispose of the drugs, leading to other risks and hazards to the environment. Also, pilfered drugs from these stockpiles may be diverted to the market for resale and misuse, or may come into the hands of scavengers and children. Regularly disposing of these items would provide additional shelf space and eliminate the possibility of misusing them.

Uneven Supply of Nets at Health Facilities. Despite the National Malaria Control Program's best efforts to estimate the needs of the people, some health facilities received a surplus of nets, yet others experienced shortages. For example, the Thio Health Center had over 400 nets in stock, of which 200 were from the October 2009 distribution. Even though the health facility was unable to distribute all the nets it received in 2009, it received an additional 281 nets in August 2010. A review of this health center's inventory records also showed that 192 nets were missing. The pharmacist did not have an explanation for the discrepancy.

Frequent Stock-Outs of Antimalarial Drugs. Five of 11 facilities reported stock-outs of ACTs, sulfadoxine-pyrimethamine (SP) for pregnant women, or Severe Malaria Kits, which are used to treat emergency malaria cases. Of the 11 health facilities visited, 5 either were out of one or more commodities or had experienced a stock-out during the past 60 days. Staff at two of the facilities stated that when they do not have ACT or SP in stock, they prescribe quinine (reserved for severe malaria cases only), even for simple malaria infections. This dangerous practice could lead to decreased antimalarial efficacy of this life-saving drug for severe malaria cases and potential long-term and permanent physical harm to individuals infected with malaria. Because of the unavailability of ACTs, patients have no choice but to wait or to rely on substitutes that may result in less effective treatment.

All of these conditions existed because of a lack of adequate monitoring by USAID partners and the Ministry of Health. For example, the partners responsible for developing the inventory distribution and storage systems traveled to facility sites only a few times a year. Whether the Ministry of Health conducted monitoring of its health facilities' malaria-related activities was unclear.

The lack of oversight and follow-up created an environment in which commodities may be handled or stored improperly, commodities may be wasted and misused, and health facilities lack the ability to meet the demands of local beneficiaries. These situations could prevent the mission from meeting its PMI goals. To correct these problems, we are making the following recommendations:

Recommendation 4. We recommend that USAID/Benin, through the Ministry of Health, strengthen controls to ensure that (1) facilities' drug inventories and drug consumption are verified before drug requests are approved and delivered and (2) mechanisms are in place to track drugs that are out of stock or will be out of stock to ensure timely replacement.

Recommendation 5. We recommend that USAID/Benin, through the Ministry of Health, take the appropriate steps to strengthen controls to ensure the proper storage of antimalarial drugs at all facilities.

Recommendation 6. We recommend that USAID/Benin communicate to the Ministry of Health the need to (1) implement a plan to destroy the expired drugs currently in storage, and (2) implement and effectively communicate to all affected health facilities a procedure for storage, pickup, and destruction of expired drugs.

Partner Did Not Track or Manage Inventory Effectively

ADS 596.3.1, "Establishing Internal Controls," requires managers and staff to implement internal controls to safeguard assets against waste, loss, unauthorized use, and misappropriation. In addition, GAO's publication *Standards for Internal Control in the Federal Government*, pages 14 and 15, states that an agency needs to establish physical control to safeguard vulnerable assets. The publication also states that transactions should be recorded promptly to maintain their relevance and value to management in controlling operations and making decisions.

Despite these requirements, RTI's inventory records for bed nets, insecticides, and other commodities were disorganized and inconsistent. According to RTI staff, the weaknesses in inventory records noted below have existed for some time.

Year-to-year records did not accurately carry over inventory. In 2008, RTI received 15,993 bed nets from the Ministry of Health to distribute to flood zones in the targeted spray area. RTI's 2008 End of Spray Report states that all of the bed nets were distributed by the end of the fiscal year. However, RTI's internal records show that 649 nets were on hand at the end of the distribution phase in 2008 but were not carried forward as the beginning balance for 2009. Although some RTI staff speculated that the warehouse manager may have stolen the bed nets before fleeing the country, RTI management officials stated that they were not aware of any theft. Nevertheless, the whereabouts of the 649 bed nets remained unknown.

There were more discrepancies between RTI's distribution reports, inventory records, and physical counts as of September 30, 2009. The distribution reports indicated that 8,334 bed nets should have been on hand, while the inventory stock card reported an inventory of 7,921 nets, and the audit team's physical count on September 22, 2010 revealed 8,112 nets. The initial physical count totaled only 7,841 nets, which was 80 nets short of the total shown on the inventory stock card. The warehouse manager attempted to deceive the audit team by revealing exactly 80 bed nets from a back room when there were actually 272 more bed nets (pictured below). These 272 nets were stored separately from the other inventory and were of a different brand than the ones RTI was distributing at the time. The warehouse manager could not provide a valid explanation for the segregated nets. In addition, a physical count of insecticides showed a discrepancy of 15 packets.



Bed nets found in the back room and transferred to the main room of RTI's warehouse. (Photo by RIG/Dakar, September 22, 2010)

RTI's inventory records for bed nets, insecticides, and other commodities such as boots and masks were disorganized and difficult to track. RTI workers kept handwritten records of inventory received and distributed, and the records sometimes were not legible, chronological, or separated by item. RTI did not utilize an electronic inventory management system. Although RTI made some improvements in tracking inventory in 2009, the organization's system still needs to be improved.

Furthermore, RTI's inventory of 8,112 bed nets had been stored at RTI's warehouse for almost 18 months (since May 2009). In this particular situation, RTI was told by the Ministry of Health that the Ministry would distribute these bed nets by October 2010. Yet most of these bed nets were treated with an insecticide that is less effective in the southern part of Benin⁵ and is no

⁵ According to a study supported by PMI and Bill and Melinda Gates, "Insecticide Resistance Status in *Anopheles Gambiae* in Southern Benin," *Malaria Journal* 2010. (<http://www.malariajournal.com/content/9/1/83>).

longer procured through PMI. Resistance to this kind of insecticide has not been reported in other parts of Benin.

The weaknesses in the process for tracking and managing inventory occurred partly because RTI employees did not receive any formal training on inventory management until September 2009, almost 2 years after the program's inception. RTI also did not provide standard tools or templates for field offices to apply best practices in inventory management. The field office was creating and modifying inventory management procedures as needed.

An inventory management process that is disorganized may result in missing and unaccounted-for items, as well as in vulnerability to theft and diversion. In addition, allowing bed nets to sit undistributed to beneficiaries hampers the achievement of program objectives. Therefore, this audit makes the following recommendations:

Recommendation 7. *We recommend that USAID/Benin require Research Triangle Institute to develop and implement procedures to improve inventory tracking processes, including training their logistics officers and warehouse managers on the best practices in inventory management.*

Recommendation 8. *We recommend that USAID/Benin require Research Triangle Institute to collaborate with the Ministry of Health to ensure distribution of the 8,112 nets that are stored in Research Triangle Institute's warehouse to regions where the nets are known to be more effective in preventing malaria.*

Bed Nets Were Missing, Diverted, and Sold for Profit

As stated earlier, the GAO publication *Standards for Internal Control in the Federal Government*, pages 14 and 15, states that an agency must establish physical control to secure and safeguard vulnerable assets. The publication also states that transactions should be recorded promptly to maintain their relevance and value to management in controlling operations and making decisions. Not following that guidance led to numerous problems with the distribution and sales of bed nets, as described below.

Nets Missing or Unaccounted For. PSI was responsible for transporting bed nets from about 30 health zones to approximately 640 health facilities throughout the country. The health facilities were to give the nets free of charge to pregnant women and to children under 5. Through the use of contracted transporters, PSI delivered 492,455 nets in FY 2009 and 507,911 nets in FY 2010 (making two distributions each year). USAID and PSI officials reported several problems associated with these deliveries.

- In the commune of Sakete, the health zone coordinator reported 250 nets missing. In his letter dated July 12, 2010, he claims that he never received them, yet a signed receipt shows that the nets were delivered.
- At the Thio Health Center in Glazoue, 192 nets were missing from the center's inventory records.

According to PSI and USAID, nets were missing at other facilities, and discrepancies occurred during each of PSI's four major deliveries in 2009 and 2010. Also, according to USAID officials,

bed nets have been appearing in Benin's public markets. For example, one USAID official found PMI-funded nets in the markets of Bohicon and Parakou in July and August 2010. He saw from the packages that the nets were funded by USAID. Sellers confirmed that they could supply thousands of nets on request.

Free Nets Not Distributed to Intended Beneficiaries. PSI has reported that some facilities were not distributing nets to qualified beneficiaries. Some possible explanations include the following: (1) health facilities were poorly supervised, (2) the National Malaria Control Program had not authorized the facilities to begin the distribution, (3) the bed nets were part of a kit that was not ready to be distributed, or (4) the bed nets were being intentionally retained for personal gain.

Sales of Social Marketing Nets for Profit. PSI has a social marketing program that is designed to provide subsidized bed nets, as well as other health items, through sales points in the private sector to targeted rural areas. This program has been extremely popular because of high demand for low-priced bed nets in targeted communities. Some of the sales points have taken advantage of this opportunity by selling the nets outside the targeted areas at prices that exceed the agreed-on CFA 1,000 (\$2.13).

For example, in early 2009, a PSI distributor was found selling nets for CFA 2,000 (\$4.26) in a nontargeted area of Cotonou rather than shipping and selling the nets to sales points in the northern commune of Malanville, a targeted community. He had sold about 60 nets before being discovered by a PSI employee.

Although 8 of Benin's 12 departments were included in the social marketing program, problems occurred primarily in Benin's major cities—Cotonou, Porto Novo, and Parakou. Estimating the frequency of this problem is difficult, but PSI's sales and promotion manager judged that about one-third of the more than 100 sales points did not always comply with the agreed-on prices. PSI attempted to mitigate the problem by being more selective in choosing sales points and by closely supervising these sales points.

Overcharging also occurred higher on the distribution chain. Distributors have complained that the cost of shipping nets to remote, hard-to-reach locations of Benin, particularly during the rainy season, makes the deliveries unprofitable. Therefore, one distributor was charging retailers a price that exceeded the agreed-on price of CFA 1,000.

All the problems with distribution and sales of bed nets reflect inadequate monitoring and evaluation. Site visits are an important tool in monitoring an activity's progress. They allow USAID to observe the net distribution process more closely, identify data quality issues, and suggest corrective actions. Members of the health team explained that they did not have enough time to conduct many site visits. For example, PSI's agreement officer's technical representative estimated that he had conducted only four or five site visits since joining the team in June 2008, but some of these visits were undocumented, and none of them were specifically related to PMI activities. Furthermore, the health team did not have a standard format for documenting visits.

Inadequate communication among USAID, its partners, and the Ministry of Health further contributed to the problems explained above. While the health team and PSI have expressed great interest in resolving these problems and have notified the Office of Inspector General's Office of Investigation of the cases of potential fraud, the cases were not consistently well researched, documented, or reported to know the extent of the problems.

Examples such as those above demonstrate that bed nets—and other donor-funded health items—can easily be found in Benin’s public markets. Diversion of commodities is occurring throughout Africa, but there is confusion about what can be done to stop it. Although the exact cause of missing nets varies from case to case, additional monitoring and supervision by USAID, its partners, and the Ministry of Health would minimize the number of occurrences. In fact, most of the weaknesses observed throughout this report can be attributed in part to inadequate monitoring.

Recommendation 9. *We recommend that USAID/Benin’s health team improve its monitoring of bed net distributions by (1) increasing site visits to health facilities and bed net sales points, and (2) developing a site visit template that specifically identifies areas to review during visits.*

Recommendation 10. *We recommend that USAID/Benin, in conjunction with its partners, develop and implement a uniform system for documenting and communicating cases of missing or diverted bed nets.*

Health Ministry’s Disciplinary Action Against Hospital Deprived Beneficiaries of Bed Nets and Drugs

The overall PMI goal is to reduce malaria-related mortality by 50 percent after 3 years of full implementation. To achieve this goal, PMI must reach 85 percent coverage of the most vulnerable groups (children under 5 and pregnant women), with proven preventive and treatment options. USAID/Benin therefore must be proactive and aggressive at reaching targeted beneficiaries.

However, at Abomey regional hospital, antimalarial commodities were not being distributed to beneficiaries. Health-care workers at the hospital stated that the pregnant women and mothers who participated in PMI-funded outreach trainings there often requested bed nets for themselves and their qualifying children, but that no bed nets had been available at the hospital since 2009. Abomey is a large regional hospital where demand for PMI commodities is high.

Hospital officials explained that a Ministry of Health policy requires all health facilities to deposit proceeds from antimalarial drug sales into a regional bank account.⁶ The ministry, to ensure the sustainability of the program, uses these proceeds to purchase antimalarial drugs. Failure to adhere to the policy results in ineligibility to receive antimalarial commodities in the future.

In 2009, instead of depositing proceeds from the sale of antimalarial drugs into the designated bank account, the Abomey regional hospital used the funds for other hospital needs, violating the Ministry of Health policy. Consequently, the regional health zone director removed the hospital from the PMI distribution list, and the hospital had not been provided with any commodities for over a year. As a result, although demand was high, the facility was not able to provide antimalarial prevention and treatment commodities to its patients.

The disciplinary action taken against the hospital, while encouraging fiscal responsibility, ultimately penalizes the beneficiaries rather than the hospital. The beneficiaries may not have

⁶ No similar requirement applies to bed nets, which are given away free at health facilities.

other means to obtain the drugs or bed nets. Additionally, the Ministry of Health policy may have prevented Benin from meeting countrywide PMI goals.

Although the mission agreed that the policy may be too strict and punishes innocent beneficiaries, the mission does not have control over the Ministry of Health's decisions. The mission sent a memo to the ministry in August 2010 requesting greater authority and control over disciplinary actions taken against hospitals. With greater control over enforcement, the mission can ensure that beneficiaries are not affected by disciplinary actions taken against the hospitals and will be provided with antimalarial commodities. However, the ministry may not accept the mission's proposal. In the interim, the mission should address the needs of the beneficiaries to meet its overall PMI objectives.

Recommendation 11. *We recommend that USAID/Benin work with the Ministry of Health to develop a strategy for reinstating the Abomey regional hospital into the artemisinin-based combination therapy (ACT) treatments distribution network.*

Some Main PMI Indicators Were Not Included in Monitoring Plans

According to ADS 203.3.2, "Performance Management," managing performance involves the systematic process of monitoring the achievements of program operations and collecting and analyzing performance information to track progress toward planned results. ADS 203.3.8.3, "Performance Report Indicators," states that the use of standard indicators facilitates the aggregation of results across operating units worldwide and improves the U.S. Government's ability to report on how U.S. foreign assistance resources are being used. However, the audit determined that the mission did not include in its PMP performance indicators related to malaria and that implementing partners were not required to report on PMI indicators.

Some PMI Indicators Were Not Included in the Performance Management Plan. The health team's PMP was initially established in December 2005 to monitor the Integrated Family Health program's 5-year strategy (2006-2011). Because the program's mandate is broad, no disease-specific indicators were included in the PMP. The PMP has been updated several times since its creation, including in 2008, after Benin was selected as a PMI country. However, although the \$21 million in PMI funding for FY 2010 represented about 66 percent of the health program portfolio's funding, the 13 performance indicators related to malaria accounted for only 16 percent of the 79 total indicators included in the PMP for the mission's health portfolio. Several important indicators including the *number of structures sprayed with insecticide*, *number of people protected by spraying*, and *number of people reached with malaria prevention and treatment messages* were not, but should be, included in the mission's PMP.

The omission of these indicators, and others, occurred because the health team received PMP guidance from Washington in April 2009 that did not require their inclusion. As a result, USAID/Benin did not include several key indicators in its PMP, even though it was keeping track of them separately. Nonetheless, the mission agreed that additional malaria indicators should be added to its FY 2011 PMP for monitoring the new 5-year strategy, which focuses more on malaria.

Partners Were Not Required to Report on PMI Indicators. Although PMI implementing partners were tracking and reporting their results, many of these partners were not formally

required to do so. Specific requirements to report on indicators were not in the partners' agreements, task orders, work plans, monitoring and evaluation plans, or PMPs.

According to mission staff, the health team inadvertently omitted the requirements from key documents for two reasons: the team focused on priorities other than the PMP, and the team was understaffed. Although the current team consists of six individuals, the 2008 health team had only two technical staff and an administrative assistant.

As a result, the PMP was incomplete. Without clearly defined expectations of achievement in a PMP, there is a risk of miscommunication, particularly in this case where many of the health team's activities—including RTI's spraying efforts, DELIVER, and SPS—were managed from Washington.

Recommendation 12. *We recommend that USAID/Benin's health team update its performance management plan to include important malaria indicators.*

Recommendation 13. *We recommend that USAID/Benin update its agreements, work plans, and other documents with its implementing partners to require reporting on relevant malaria indicators and other performance measures.*

EVALUATION OF MANAGEMENT COMMENTS

USAID/Benin agreed with all 13 recommendations in the draft report. Based on actions taken by the mission and supporting documentation provided, final action has been taken on recommendations 8 and 9; and management decisions have been reached on recommendations 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, and 13. Our evaluation of management comments is shown below:

Recommendation 1. USAID/Benin agreed with the recommendation. RTI will develop revised procedures for data gathering, tallying of results, and reporting of activities by June 30, 2011. Accordingly, a management decision has been reached on this recommendation.

Recommendation 2. USAID/Benin agreed with the recommendation and is working with the Washington-based contracting officer's technical representative (COTR) and RTI to ensure indicator definitions used correspond correctly to PMI indicator guidance. The IRS program COTR and USAID/Benin will jointly issue a communication to RTI reinforcing PMI-required IRS definitions by February 15, 2011. Accordingly, a management decision has been reached on this recommendation.

Recommendation 3. USAID/Benin agreed with the recommendation and will task RTI to revise existing standard operating procedures for information management. USAID/Benin, in coordination with others, will also increase the frequency of spot checks and site visits. In addition, a data quality assessment will be completed by the third quarter of fiscal year 2011. The target completion date for actions on this recommendation is July 31, 2011. Accordingly, a management decision has been reached on this recommendation.

Recommendation 4. USAID/Benin agreed with the recommendation and will work with the Washington-based COTR and collaborate with the MOH and the Central Medical Stores (1) to develop and implement protocols for the verification of inventories prior to approval of orders of antimalarial drugs and commodities and (2) to intensify the use of the existing software to track availability of stocks at health facilities. The target completion date of the above is June 30, 2011. Accordingly, a management decision has been reached on this recommendation.

Recommendation 5. USAID/Benin agreed with the recommendation and will develop with others a set of standard protocols to be followed in the storage of antimalarial drugs at different levels of the health system. The target completion date for this action is June 30, 2011. Accordingly, a management decision has been reached on this recommendation.

Recommendation 6. USAID/Benin agreed with the recommendation and will write a letter to the Minister of Health advocating for the need to develop and implement a procedure to collect, transport, and destroy expired drugs in storage in an environmentally friendly manner. The target completion date for this action is May 31, 2011. Accordingly, a management decision has been reached on this recommendation.

Recommendation 7. USAID/Benin agreed with the recommendation and will ensure that RTI develops and implements inventory tracking processes and introduces revised tools, having

trained logistics officers and warehouse managers on them, prior to the start of spraying operations in Atacora Department. The target completion date for this action is June 30, 2011. Accordingly, a management decision has been reached on this recommendation.

Recommendation 8. USAID/Benin agreed with the recommendation and provided documentation showing that RTI communicated to the Ministry of Health the availability of the nets in RTI's warehouse for use in the next distribution campaign, scheduled for February-March 2011. The documentation further shows that MOH has taken possession of the bed nets and programmed them for distribution. This action constitutes final action on this recommendation.

Recommendation 9. USAID/Benin agreed with the recommendation and has taken steps to ensure that AOTR/COTRs and project activity managers conduct regular site visits. Since the first quarter of fiscal year 2011, the number of site visits has increased, and the plan is to conduct quarterly visits to each implementing partner. The mission has provided a site visit template that will be used during site visits. This action constitutes final action on this recommendation.

Recommendation 10. USAID/Benin agreed with the recommendation for bed nets purchased with U.S. Government funds. The mission will require the relevant implementing partner to submit a written plan of action for how nets will be tracked for program management verification. In the event of missing or diverted bed nets, the implementing partner will document missing items and work with local authorities to track and remedy the diversion. This system will be communicated in writing to all affected implementing partners by March 15, 2011. Accordingly, a management decision has been reached on this recommendation.

Recommendation 11. USAID/Benin agreed with this recommendation. The mission will work with the National Malaria Control Program and the management of the Abomey regional hospital to re-integrate the hospital into the ACT distribution network. The target completion date for this action is March 31, 2011. Accordingly, a management decision has been reached on this recommendation.

Recommendation 12. USAID/Benin agreed with the recommendation. The mission is already working on revising its overall strategic framework for its health activities and will begin selecting indicators for each level and each activity. The mission expects to develop a new health PMP by June 30, 2011. Accordingly, a management decision has been reached on this recommendation.

Recommendation 13. USAID/Benin agreed with the recommendation. All current implementing partner documents will be updated to reflect the relevant indicators and performance measures, and new malaria activities will include relevant malaria indicators in the award and original performance documents. For all current activities, the formal modification of project documents will be completed. The target completion date for this action is June 30, 2011. Accordingly, a management decision has been reached on this recommendation.

SCOPE AND METHODOLOGY

Scope

We conducted this audit in accordance with generally accepted government auditing standards.⁷ Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides that reasonable basis.

The purpose of this audit was to determine whether USAID/Benin's program to implement the President's Malaria Initiative achieved its main goals of preventing and treating malaria. To implement the program, the mission worked with about 13 prime partners. Those selected for audit are shown in the following table.

Audited Programs

Implementing Partner	Program	Agreement/Task Order	
		Amount (\$ million)	Dates
John Snow Inc.	The DELIVER program procures bed nets, ACTs, sulfadoxine-pyrimethamine (SP) for pregnant women, rapid diagnostic tests, severe malaria treatment kits, microscopes and reagents and transports them to health facilities	9.8 (through 9/2010)	4/2008– 9/2015
Research Triangle Institute International (RTI)	The IRS program sprays households in selected areas	7.7 (through 9/2010)	1/2008– 9/2015
Population Services International (PSI)	The ITN program transports ITNs from health depots to health facilities; procures and distributes ITNs through the private sector; and provides malaria-related information, education, communication, and behavior-change communication services	3.2	7/2008– 12/2010
Management Sciences for Health	The Strengthening Pharmaceutical Systems (SPS) program trains and provides technical assistance to the National Malaria Control Program, health district commodity managers, and the Central Medical Store's staff on forecasting, managing supply, and tracking and storing commodities	1.6	9/2008– 1/2011

The audit focused on PMI activities occurring in FYs 2009 and 2010. USAID/Benin's FY 2008, 2009, and 2010 funding for PMI totaled \$13.9 million, \$13.8 million, and \$21 million respectively. PMI activities expended \$9.6 million during FY 2009 and \$16.2 million during FY 2010.

In planning and performing the audit, the audit team assessed relevant controls used by the mission to manage the program and ensure that its implementing partners were providing adequate oversight of program activities. The assessment included controls related to whether

⁷ *Government Auditing Standards*, July 2007 Revision (GAO-07-731G).

USAID had (1) reviewed progress and financial reports submitted by the implementing partners, (2) conducted and documented periodic meetings with the implementing partners, (3) performed documented visits to the activity sites, and (4) developed and implemented policies and procedures to safeguard the assets and resources of the activities. Additionally, the auditors examined the mission's fiscal year 2009 annual self-assessment of management controls—which the mission is required to perform to comply with the Federal Managers' Financial Integrity Act of 1982⁸—to determine whether the assessment cited any relevant weaknesses.

Audit fieldwork was performed at USAID/Benin as well as at the implementers' offices. The audit team made field trips to 20 facilities from September 20 to October 8, 2010, in Cotonou and other cities in Benin.

Methodology

To answer the audit objective, we reviewed the PMI indicators reported by USAID/Benin in FY 2009 as well as activities implemented by selected implementing partners. We met with the PMI team in Benin to gain an understanding of the program activities and also reviewed available agreements, progress reports, and implementing partner work plans. We reviewed applicable laws and regulations and USAID policies and procedures pertaining to USAID/Benin's PMI program, including Automated Directives System guidance, the USAID/Benin malaria operational plans for FYs 2009 and 2010, and the Benin 5-year strategy. During site visits, we interviewed implementing partner staff, service providers, spray operators, beneficiaries, and officials from the Government of Benin's Ministry of Health. We also verified reported results, performed inventory counts on antimalarial drug and net commodities, and checked to see whether activities were being monitored and evaluated as required.

The audit involved (1) validating the partners' reported results under selected key performance indicators and (2) conducting site visits to selected activities. In validating the program's reported results, the audit team focused on the data reported on the following four performance indicators because these indicators were the ones that relate to the activities selected for audit:

- *Number of houses sprayed with IRS with U.S. Government support*
- *Number of insecticide-treated nets purchased with U.S. funds*
- *Number of nets distributed that were purchased with U.S. funds*
- *Number of artemisinin-based combination therapy treatments purchased and distributed with U.S. Government support*

The scope of our testing was limited to validating the data reported on these indicators for judgmentally selected sites: 20 facilities, which included the port, spraying sites, warehouses, and health centers in 14 of 77 communes, or 5 of 12 departments in Benin: (1) Littoral; (2) Oueme; (3) Mono, (4) Collines, and (5) Zou. The 20 sites chosen for review were located in the regions where PMI programs were being implemented, were logistically feasible with the available resources, and included both large and small medical facilities. Since this testing was based on a judgmental—not statistical—sample of indicators and sites, the results and overall conclusions related to this analysis were limited to the items tested and could not be projected to the entire audit universe. However, we believe that our work provides a reasonable basis for our conclusions.

⁸ Public Law 97–255, as codified in 31 U.S.C. 3512.

MANAGEMENT COMMENTS

To: Gerard Custer, Regional Inspector General, Dakar, Senegal

From: Kevin Armstrong, Mission Director, USAID/Benin /s/

Date: January 25, 2010

Subject: Audit of USAID/Benin's Implementation of the President's Malaria Initiative (Audit Report No. 7-680-11-00X-P) – December 2010

This memorandum transmits USAID/Benin's management response on the subject audit report (Audit Report No. 7-680-11-00X-P) regarding USAID/Benin's malaria activities funded by the President's Malaria Initiative (PMI). We believe that we have made significant progress towards reducing the malaria burden in Benin. In concert with our partners and the Government of Benin's National Malaria Control Program (NMCP), we have increased access to life-saving malaria drugs, provided bed nets and indoor residual spraying for malaria prevention, and helped local capacity to manage and sustain activities in a transparent manner. However, we acknowledge that there are significant challenges in implementing this type of program and will continue to work on improving the malaria information system, and the management of the supply chain of malaria drugs, commodities and other resources provided. We appreciate the RIG's inputs towards the improvement of the implementation of PMI by USAID/Benin.

Our management responses to the recommendations are presented below:

Recommendation 1. *We recommend that USAID/Benin, in conjunction with Research Triangle Institute (RTI), identify alternative ways in which spray operators can tally results.*

Management Comments: USAID/Benin agrees with the recommendation. For this recommendation and others related to RTI, USAID/Benin will work closely with RTI, the National Malaria Control Program (NMCP), and partners to implement operational improvements in various aspects of data-gathering, tallying of results and reporting of activities implemented.

RTI will be tasked with developing the revised procedures for spraying operators with a target completion date of June 30, 2011, before the 2011 spraying campaign starts in Atacora department.

Recommendation 2. *We recommend that USAID/Benin, in consultation with Research Triangle Institute (RTI), formulate clear definitions of terms and implement internal controls to ensure that consistent terminology is used in gathering and reporting data on indoor residual spraying with insecticide.*

Management Comments: USAID/Benin agrees with the recommendation, and is working with the Washington-based COTR and RTI to ensure indicator definitions used in Benin and reported to PMI in reports and work plans correspond correctly to PMI indicator guidance in the Indoor Residual Spraying (IRS) training manual and available in the following link:

http://pmi.gov/technical/irs/irs_training.pdf. The IRS Project COTR and USAID/Benin will jointly issue a communication to RTI reinforcing PMI-required IRS definitions of terms and reporting requirements and will complete this action by February 15, 2011.

Recommendation 3. *We recommend that USAID/Benin develop and implement procedures to validate insecticide-spraying data periodically through spot checks.*

Management Comments: USAID/Benin agrees with the recommendation, and will task RTI to revise existing standard operating procedures for information management, which will include adopting an efficient data flow system that will carry accurate and timely information from the spraying operator to the zonal level with minimal errors. Data collection and entry tools that promote efficiency and quality at all levels of the information system, enabling proper performance tracking, will be used.

USAID/Benin, in collaboration with the NMCP, RTI and other partners, will also increase the frequency of spot checks and site visits to verify that forms are used correctly, and data are accurately entered. Cross-checking and data verification will be conducted at appropriate intervals during the IRS campaign. In addition, a data quality assessment will be completed by USAID during the third quarter of fiscal year 2011. The target completion date of this action is July 31, 2011.

Recommendation 4. *We recommend that USAID/Benin, through the Ministry of Health, strengthen controls to ensure that: (1) facilities' drug inventories and drug consumption are verified before drug requests are approved and delivered, and (2) mechanisms are in place to track drugs that are out of stock or will be out of stock to ensure timely replacement.*

Management Comments: USAID/Benin agrees with the recommendation. To clarify, USAID/Benin consigns and transfers ownership of most malaria commodities to the host government, NGOs or other in-country partners. The in-country supply chains for these commodities vary and are very complex, especially when a whole country with under-developed systems and infrastructure is concerned. However, USAID/Benin will continue to work with the host country to develop capacity and strengthen the existing supply chain and supervision mechanisms. USAID/Benin, through its partners and the GOB, will verify the proper management of commodities by employing various tools and methods, including the existing end-use verification tool, regional and national inventory checks, and supervision tools.

The recommendation highlights the need for training and supervision on the rational use of antimalarial drugs, to which end PMI contributes significantly in all PMI-supported countries. Benin, like many developing countries, lacks a robust supervision component in its health programs. This is the reason behind the weak pharmaceutical management observed at the health facilities the auditors visited.

USAID/Benin will work with the Washington-based COTR of Strengthening Pharmaceutical Systems/Management Sciences for Health (SPS/MSH) and collaborate with the MOH and the Central Medical Stores (CAME) to develop and implement protocols for the verification of inventories prior to approval of orders of anti-malarial drugs and commodities and to intensify the use of the existing software to track availability of stocks at health facility level.

The target completion date of the above is June 30, 2011.

Recommendation 5. *We recommend that USAID/Benin, through the Ministry of Health, take the appropriate steps to strengthen controls to ensure the proper storage of antimalarial drugs at all facilities.*

Management Comments: USAID/Benin agrees with the recommendation and will jointly develop with the NMCP, CAME and the Direction of Pharmaceutical Services, Medicines and Diagnostics of the MOH, a set of standard protocols to be followed in the storage of antimalarial drugs at different levels of the health system. The target completion date of this action is June 30, 2011.

Recommendation 6. *We recommend that USAID/Benin communicate to the Ministry of Health the need to (1) implement a plan to destroy the expired drugs currently in storage, and (2) implement and effectively communicate to all affected facilities a procedure for storage, pickup, and destruction of expired drugs.*

Management Comments: USAID/Benin agrees with the recommendation and will write a letter to the Minister of Health advocating for the need to develop and implement a plan to collect, transport and destroy expired drugs in storage in an environmentally-friendly manner. The target completion date of this action is May 31, 2011.

Recommendation 7. *We recommend that USAID/Benin require Research Triangle Institute to develop and implement procedures to improve inventory tracking processes, including training their logistics officers and warehouse managers on the revised procedures and best practices in inventory management.*

Management Comments: USAID/Benin agrees with the recommendation and will ensure that RTI develop and implement inventory tracking processes and introduce revised tools, with logistics officers and warehouse managers trained on them, prior to the start of spray operations in Atacora department. This will be complementary to the responses to recommendations 1 and 3. The target completion date of this action is June 30, 2011.

Recommendation 8. *We recommend that USAID/Benin require Research Triangle Institute to collaborate with the Ministry of Health to ensure distribution of the 8,334 nets that are stored in the Research Triangle Institute's warehouse to regions where the nets are known to be more effective in preventing malaria.*

Management Comments: USAID/Benin agrees with the recommendation. In December 2010, RTI communicated to the Ministry of Health the availability of the nets in RTI's warehouse for use in the next Long-Lasting Insecticide-Impregnated Net (LLIN) distribution campaign that is currently scheduled for February-March 2011 (Annex 1). The MOH has taken possession of the bed nets and have programmed them for distribution (Annex 2). The effectiveness of the bed nets is not deemed an issue: the brand of the bed nets is *Olyset*, which uses an insecticide to which the local vector, *Anopheles gambiae*, has shown resistance. This was the conclusion of entomological studies recently completed in Benin (Annex 3). The principal benefit from *Olyset* bed nets in Benin is their role as a physical barrier against mosquito bites.

The Mission requests closure of this recommendation.

Recommendation 9. *We recommend that USAID/Benin's health team improve its monitoring of bed net distributions by (1) increasing site visits to health facilities and bed net sales points, and (2) developing a site visit template which specifically identifies areas to review during visits.*

Management Comments: USAID/Benin agrees with the recommendation and acknowledges that site visits are an important aspect in monitoring the progress and performance of malaria activities. It should be noted that during the period covered by the audit, the Commodities Logistics Specialist conducted nine visits to health facilities and sales points to monitor the availability and management of PMI commodities, including bed nets. Another ten site visits were completed by other activity managers and COTRs during fiscal year 2010. USAID/Benin has also taken steps to ensure that AOTR/COTRs and project activity managers conduct regular site visits and that the results of these visits are duly documented in trip reports. Since the first quarter of fiscal year 2011, the number of site visits has increased, and the plan is to conduct a minimum of quarterly visits to each implementing partner. The Family Health Team has also developed a site visit template (Annex 4) and quarterly activity procedures that include planning of site visits by AOTR/COTRs and project activity managers.

The Mission requests closure of this recommendation.

Recommendation 10. *We recommend that USAID/Benin, in conjunction with its partners, develop and implement a uniform system for documenting and communicating cases of missing or diverted bed nets.*

Management Comments: USAID/Benin agrees with the recommendation, but only for bed nets purchased with USG funds. For this subset of nets that are distributed in Benin, the Mission will require the relevant implementing partner to submit a written plan of action for how nets will be tracked, accounted for and documented for program management verification. In the event of missing or diverted bed nets, the implementing partner will document with local authorities efforts to track and remedy the diversion. This plan will also include procedures for reporting and following-up on missing or diverted bed nets to USAID. This system will be communicated in writing to all relevant implementing partners by March 15, 2011.

Recommendation 11. *We recommend that USAID/Benin work with the Ministry of Health to develop a strategy for reinstating the Abomey regional hospital into the artemisinin-based combination therapy (ACT) treatments distribution system.*

Management Comments: USAID/Benin agrees with this recommendation. The Family Health Team will work with the NMCP and the management of the Abomey regional hospital to re-integrate the hospital into the ACT distribution network. The target completion date of this action is March 31, 2011.

Recommendation 12. *We recommend that USAID/Benin's health team update its performance management plan to include important malaria indicators.*

Management Comments: USAID/Benin agrees with the recommendation. The Mission had already planned to update its Performance Monitoring Plan (PMP) for the Family Health Program in fiscal year 2011 to include appropriate outcome and impact level indicators for malaria and other elements of its portfolio along with a calendar and defined methodologies for monitoring these indicators and evaluating overall performance. The Family Health Team is already working on revising its overall strategic framework for its health activities and will begin selecting indicators for each level and each activity once the framework is finished. The entire process to develop a new health PMP, which includes all the malaria activities conducted by the Mission, will be completed by June 30, 2011.

Recommendation 13. *We recommend that USAID/Benin update its agreements, work plans and other documents with its implementing partners to require reporting on relevant malaria indicators and other performance measures.*

Management Comments: USAID/Benin agrees with the recommendation. It should be noted that agreements with our partners did include requirements to track all relevant malaria indicators and other performance measures. The Mission acknowledges that some documents were not up to date at the time of the audit but this does not mean that implementing partners were not required to report on their malaria activities. Our implementing partners were required to report on any and all indicators listed in both their agreements, and in modifications to their agreement. Due to additions to or changes in the formulation of common indicators from PMI/Washington and amendments to activities in the Malaria Operational Plan, there were changes in the indicators to be tracked over the life of PMI activities. These changes were discussed with implementing partners but project documents were not formally revised to include these changes. As noted in the response to recommendation 12, the Mission is in the process of revising the PMP to fully track health activities, including malaria. As part of this process, all current implementing partner documents will be updated to reflect the relevant indicators and performance measures, and new malaria activities will include relevant malaria indicators in the award and original performance documents. For all current activities, the formal modification of project documents will be completed by May 31, 2011. The target completion date of this action is June 30, 2011.

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