This Malaria Operational Plan has been approved by the U.S. Global Malaria Coordinator and reflects collaborative discussions with the national malaria control programs and partners in country. The final funding available to support the plan outlined here is pending final FY 2013 appropriation. If any further changes are made to this plan it will be reflected in a revised posting.

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PRESIDENT'S MALARIA INITIATIVE

PRESIDENT'S MALARIA INITIATIVE

Guinea

Malaria Operational Plan FY 2013

Contents

ABBREVIATIONS AND ACRONYMS

ADB	African Development Bank
ACT	Artemisinin-based combination therapy
AS-AQ	Artesunate-amodiaquine
ANC	Antenatal care
BCC	Behavior change communication
BSD	Bureau of Strategy and Development
CCM	Country Coordinating Mechanism
CDC	Centers for Disease Control and Prevention
CHW	Community health worker
CRS	Catholic Relief Services
DHS	Demographic and Health Survey
DNPL	National Directorate of Pharmacies and Laboratory
EPI	Expanded Program on Immunization
EUV	End-use Verification
FY	Fiscal Year
GHI	Global Health Initiative
Global Fund	The Global Fund to Fight AIDS, Tuberculosis, and Malaria
GMS	Grant Management Solutions
GOG	Government of Guinea
HHC	Health & Hygiene Committee
HMIS	Health Management Information System
HKI	Helen Keller International
IDB	International Development Bank
IMCI	Integrated Management of Childhood Illnesses
IPTp	Intermittent preventive treatment of malaria in pregnancy
IRS	Indoor residual spraying
ITN	Insecticide-treated net
LLIN	Long-lasting insecticide-treated net
LMIS	Logistics management information system
M&E	Monitoring and evaluation
MCH	Maternal and Child Health
MICS	Multiple Indicator Cluster Survey
MIP	Malaria in pregnancy
MIS	Malaria Indicator Survey
MOH	Ministry of Health and Public Hygiene
MPR	Malaria Program Review
MCHIP	Maternal and Child Health Integrated Program
MSF	*Médecins Sans Frontières*
NGO	Non-governmental organization
NMCP	*Programme National de Lutte contre le Paludisme* (National Malaria Control Program)
PCG	*Pharmacie Centrale de Guinée*
PMI	President's Malaria Initiative
PSI	Population Services International

RBM	Roll Back Malaria
RDT	Rapid diagnostic test
SIAPS	Systems for Improved Access to Pharmaceuticals and Services
SP	Sulphadoxine-pyrimethamine
UC	Universal coverage
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USG	United States Government
WHO	World Health Organization

I. EXECUTIVE SUMMARY

Malaria prevention and control are major foreign assistance objectives of the U.S. Government (USG). In May 2009, President Barack Obama announced the Global Health Initiative (GHI) to reduce the burden of disease and promote healthy communities and families around the world. The President's Malaria Initiative (PMI) is a core component of the GHI, along with HIV/AIDS, tuberculosis, maternal and child health, family planning and reproductive health, nutrition, and neglected tropical diseases.

PMI was launched in June 2005 as a five-year, $1.2 billion initiative to rapidly scale up malaria prevention and treatment interventions and reduce malaria-related mortality by 50% in 15 high-burden countries in sub-Saharan Africa. The 2008 Lantos-Hyde Act extended funding for PMI through fiscal year (FY) 2014. Programming of PMI activities follows the core principles of GHI: encouraging country ownership and investing in country-led plans and health systems; increasing impact and efficiency through strategic coordination and programmatic integration; strengthening and leveraging key partnerships, multilateral organizations, and private contributions; implementing a woman- and girl-centered approach; improving monitoring and evaluation (M&E); and promoting research and innovation.

In June 2011, Guinea was selected to receive funding during the sixth year of PMI. Guinea has year-round malaria transmission with high transmission from July through October in most areas. Malaria is considered the number one public health problem in the country. National statistics in Guinea show that among children less than five years of age, malaria accounts for 31% of consultations, 25% of hospitalizations, and 14% of hospital deaths in public facilities. A demographic and health survey (DHS) was carried out in mid-2012, and the results will provide more concrete baseline information regarding key malaria indicators.

Although Guinea has been awarded three five-year malaria grants from the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund), only Global Fund Round 2 and Round 6 resources have been available for addressing gaps, with Round 6 currently suspended, and Round 10 funds have yet to be released. The Round 6 (Phase 1) funds were used to buy nets and drugs, and were combined with additional funding from the World Bank, and will continue to be used, once suspension has been lifted, to buy drugs. Round 10 funds will be used to buy nets. Both Round 6 and Round 10 negotiations are centered on the consolidation of the grants with both government and non-governmental organizations to serve as principal recipients. Although PMI provided an emergency supply of artemisinin-based combination therapy (ACTs) that were used to replenish public facility stocks, the country currently is experiencing stock outs of long-lasting insecticide treated nets (LLINs), and sulphadoxine-pyrimethamine (SP) for routine distribution, and rapid diagnostic tests (RDTs) for confirmation of malaria cases.

This FY 2013 Malaria Operational Plan is based on input received from the National Malaria Control Program (NMCP) and partners during a planning visit carried out in late June of 2012 by staff from the U.S. Agency for International Development (USAID) and the Centers for Disease Control and Prevention (CDC). The activities that PMI is proposing complement the contributions of other partners and directly support the NMCP's strategic plan. PMI will support some nationwide needs as well as other targeted activities in 14 prefectures and the five communes of Conakry, while Global Fund efforts will target the remaining 19 prefectures of the

country. The proposed FY 2013 PMI budget for Guinea is $10 million. The following paragraphs describe current progress to date as well as the FY 2013 plans:

Insecticide Treated Bed-nets (ITNs): The NMCP strategy is to support free distribution of long-lasting insecticide-treated nets (LLINs) through antenatal care (ANC) and vaccination clinics; free distribution through mass campaigns; and the sale of LLINs in the commercial sector. Guinea is planning a nationwide, universal coverage (UC) campaign for 2013, although the current target date of April is somewhat tentative due to the delay in Global Fund support. PMI will purchase approximately 1.6 million nets for this campaign using both FY 2011 and FY 2012 funds; these nets will be distributed in PMI target areas. With FY 2013 funding, PMI will procure 100,000 LLINs made available to complete the UC campaign (if an LLIN gap remains) or to pilot routine services in health facilities. In addition, PMI will support behavior change communication (BCC) activities, including mass media and community-level approaches (e.g., local radio stations, women's groups) to increase demand for and promote correct and consistent use of LLINs.

Indoor Residual Spraying (IRS): Currently, IRS is not part of the national malaria control strategy; however, the new 2012-2016 strategy will be adopted by the end of 2012, and it will contain guidance on IRS. The limited spraying that takes place in the country is carried out by mining companies which spray the homes of the villages surrounding their compounds. Current PMI support is being used to conduct standard entomological surveillance including species identification and insecticide resistance, and to train key personnel to conduct and manage a surveillance program. With FY 2013 funds, PMI will continue to support surveillance and training, including advanced training in entomology at an accredited university in the region.

Malaria in Pregnancy (MIP): The policy for intermittent preventive treatment during pregnancy (IPTp) recommends that pregnant women receive two doses of SP during antenatal care visits beginning at the 16th week and the second dose beginning at least one month later. Pregnant women with HIV are given a third dose at least one month after the second dose. PMI will work with the NMCP to advocate for an MIP policy revision that is less narrowly defined by specific dates for dosing and more in line with the WHO guideline to facilitate progress in this indicator. PMI recently purchased 325,000 SP treatments to cover the needs for all public facilities within PMI target areas, however issues related to drug delivery to the facility level need to be addressed. To improve the quality of IPTp services in the public sector, PMI has begun training health workers and midwives on MIP, and supported supervision rounds and communication activities in PMI target areas. With FY 2013 funding, PMI will continue refresher training of health workers in IPTp, supervise health workers to improve the quality of services, strengthen logistics management for MIP commodities, support BCC activities to promote ANC attendance, and procure 465,000 treatments of SP to cover needs in PMI target areas.

Case Management – Diagnosis: The current national policy is to test each case of fever with an RDT or microscopy before prescribing a treatment of ACT for a confirmed case of malaria, both at the facility and community levels. Also, the policy recommends that each health facility have a microscope to confirm suspected cases although microscopes are only available in hospitals and some health centers. PMI has begun to assist with the scale up of malaria diagnostics by training health workers in use of both RDTs and microscopy, but RDTs are not currently

available anywhere in the country. To address this gap, PMI has ordered over 1 million RDTs, which will be delivered to PMI target areas before the end of 2012. Additionally, PMI has ordered microscopes and reagents, to be delivered to referral hospitals throughout the country. With FY 2013 funding, PMI will procure 4 million RDTs for PMI target areas, and will continue to support malaria microscopy by procuring additional microscopes and reagents, as well as building capacity for microscopy repair. PMI will support training of laboratory technicians at hospitals and health centers and will help reinforce quality assurance and quality control for microscopy by working with the National Laboratory and the NMCP, while continuing training of health workers and community health workers (CHWs) in proper RDT use.

Case Management - Treatment: In Guinea, artesunate amodiaquine (AS-AQ) is the recommended treatment for uncomplicated malaria cases. In response to an eight-month stock out of ACTs, PMI agreed to an emergency purchase of 1.5 million treatments, which were delivered to the country in three consignments, the first of which was handed over in a well-publicized ceremony in October of 2011. Although these ACTs are helping to fill a large, nationwide gap, the concern remains that, eventually, this supply will run out and once again, the country will face massive stock outs. The reason for the concern is the slow progress in resolving Global Fund issues and releasing funds, which were intended to purchase ACTs. In addition to ACT procurement, PMI supported the training of health personnel in malaria case management, as well as supervision of health personnel to improve the quality of treatment in PMI target areas. With FY 2013 funding, PMI will purchase approximately 1.4 million ACTs, quinine, and supplies for treatment of severe malaria for children under five; training and supervision of health workers and CHWs; and support the scale up of community case management of malaria, all in PMI target areas.

Case Management - Pharmaceutical Management: The national policy is to deliver malaria treatment and prevention commodities through the public system via the *Pharmacie Centrale de Guinée* (PCG). This past year PMI supported a round table discussion to bring all partners together and begin work on restoring the capacity of PCG and the public sector delivery system to function as intended. The roundtable resulted in recommendations for improving the PCG and the National Directorate of Pharmacies and Laboratory (DNPL), but there have been no actions taken on these recommendations to date. Many key issues around governance, including transparency, legislatively-mandated authority and the like still remain unresolved. With FY 2013 funding, PMI will continue to support technical assistance to improve the public pharmaceutical system, and work to resolve the outstanding issues.

Monitoring and Evaluation (M&E): The revision of Guinea's national malaria control strategy will include a budget for M&E, which does not currently exist. PMI is assisting the NMCP in this process, and hopes to have a revised, five-year costed M&E strategy by the end of 2012. The field work for the latest DHS was completed in July 2012, and preliminary results should be available before the end of the year. This information will serve as baseline data for PMI and the country itself, as it works to achieve Roll Back Malaria (RBM) objectives by 2015. With FY 2013 funding, PMI will support an end-use verification (EUV) survey and will continue to provide M&E training at regional and district levels. PMI will also provide technical assistance for M&E to help strengthen the health information system, and, as with the 2012 DHS, PMI will contribute funds to conduct a malaria indicator survey (MIS) in 2014.

Behavior Change Communication: Guinea is currently in the process of revising its national malaria strategy, including a strengthened BCC component; this will emphasize appropriate strategies and channels to reach various target groups with culturally-sound information on malaria prevention and control. PMI is assisting in this process, and will work to ensure that there is national consensus as well as key partner input in the design, and that uniform indicators and targets are used to monitor progress and assess the impact of BCC activities. In FY 2013, and in accordance with PMI BCC guidance, BCC will be part of an integrated communication package including ITN use, MIP, and community case management. This activity will be implemented in health districts targeted by PMI, using the NMCP communication plan.

Health Systems Strengthening/Capacity Building: Given the challenges facing malaria prevention and control in Guinea, PMI resources will focus on addressing priorities that are directly linked to malaria service delivery. PMI will work with other donors to improve coordination among key stakeholders to enable the NMCP to fill the service gap, making maximum use of current and potential resources provided by partners. With FY 2013 funds, PMI will support entomology training of NMCP personnel, assist in training of NMCP staff in management and M&E, and provide support to the NMCP to maintain basic office operations including communication and Internet connectivity.

II. STRATEGY

A. INTRODUCTION

The PMI is a core component of the GHI, along with HIV/AIDS, and tuberculosis. PMI was launched in June 2006 as a five-year, $1.2 billion initiative to rapidly scale up malaria prevention and treatment interventions and reduce malaria-related mortality by 50% in 15 high-burden countries in sub-Saharan Africa. With passage of the 2008 Lantos-Hyde Act, funding for PMI was extended through FY 2014 and, as a part of the GHI; the goal of PMI has been adjusted to reduce malaria-related mortality by 70% in the original 15 countries by the end of 2015. This goal will be achieved by continuing to scale up coverage of the most vulnerable groups — children under five years of age and pregnant women — with proven preventive and therapeutic interventions, including ACTs, ITNs, IPTp, and IRS.

Guinea only became a PMI focus country in 2011, and to date, has supported an emergency procurement of ACTs to respond to a nationwide stock out, conducted a launching ceremony with key PMI and Government of Guinea (GOG) officials, hosted a round table to begin tackling the poorly functioning pharmaceutical sector, and started nationwide training and supervision exercises to improve quality of malaria services. PMI will continue to build on these efforts moving forward into years two and three.

Global Fund resources for Guinea for both Round 6 and 10 have been released. The plan is to consolidate both rounds, with the government handling ACT and RDT procurement and distribution, while other principal recipients will manage the distribution of LLINs. There are other partners slated to provide support to Guinea other than PMI and the Global Fund, including the Islamic Development Bank (IDB). With support from PMI, Guinea hopes to cover much of the country's remaining needs in commodities, technical assistance, and capacity building. Additional resources will be required for the country to achieve universal LLIN coverage and to start IRS activities in areas beyond where private mining companies currently operate. USAID is taking a greater lead in coordination and organizing meetings with major stakeholders and the NMCP to ensure that nationwide coverage is achieved. PMI periodically reviews the situation in Guinea to determine whether it is necessary to revise its plan to support the country.

This FY 2013 Malaria Operational Plan presents a detailed implementation plan for the third year of PMI in Guinea, based on the PMI Multi-Year Strategy and Plan and the NMCP's five-year National Malaria Control Strategy. The Malaria Operational Plan was developed in consultation with the NMCP and with the participation of many national and international partners involved with malaria prevention and control in the country. Although a new 2012-2016 National Malaria Control Strategy and Plan has yet to be completed, the activities proposed by PMI fit in well with NMCP and partners' plans. All proposed activities were reviewed and endorsed by partners, including the Ministry of Health and Public Hygiene (MOH), at a stakeholders meeting held at the end of the planning visit. This document briefly reviews the current status of malaria control policies and interventions in Guinea, describes progress to date, identifies challenges and unmet needs if the targets of the NMCP and PMI are to be achieved, and provides a description of planned FY 2013 activities.

B. MALARIA SITUATION IN GUINEA

Guinea is a coastal country in West Africa composed of four areas with distinct ecologies: Lower Guinea, which includes the coastal lowlands; Middle Guinea, the mountainous region running north-south in the middle of the country; the Sahelian Upper Guinea; and the Forested jungle area in the south. Guinea borders Guinea-Bissau and Senegal to the North, Mali and Côte d'Ivoire to the East, and Liberia and Sierra Leone to the South. Guinea's 33 prefectures are grouped into eight administrative regions, one of which is the capital city of Conakry and its five communes. Guinea's entire population of 10.8 million people is at risk of malaria.[1] According to the 2011 Human Development Index, Guinea has among the lowest health and development indicators, ranking 178 out of 187 countries.[2] Poverty has been steadily rising over the past decade, and as of 2010 over half (58%) of Guinea's population lives below the Guinean government's poverty line of $196 USD per person per year.[3] Infant and under-five mortality rates are 81 and 130 per 1,000 live births, respectively.[4] Although the antenatal care coverage of at least one visit is high (88%), the lifetime risk of maternal death is one of the worst in the world, at one in 26.[5]

Guinea has year-round malaria transmission with peak transmission from July through October in most areas.[6] According to the National Malaria Control Strategy, malaria remains the number one public health problem in Guinea, with 98% of malaria infections caused by *Plasmodium falciparum*. According to national health statistics, the morbidity rate for malaria is 148/1,000 population. National statistics in Guinea show that among children less than five years of age, malaria accounts for 31% of consultations, 25% of hospitalizations, and 14% of hospital deaths.[7] This estimate does not include malaria cases seen in the community or in private facilities. Among the general population, malaria is also the primary cause of consultations (34%), hospitalizations (31%) and death (14%) according to the Ministry of Health.[8] Most malaria cases reported in national statistics are clinically diagnosed, and therefore may not accurately reflect the true malaria burden. Additional data is expected from the 2012 DHS which is currently in progress with completion expected in December 2012.

Although malaria is endemic throughout Guinea, no reliable regional or national estimates of parasitemia exist, nor are entomologic data related to malaria transmission widely available. The NMCP (and the Global Fund) has characterized regions in Guinea as hyperendemic, holoendemic, mesoendemic, and hypoendemic, although recent studies or data on which these characterizations are based are lacking.

The major vectors in the country are members of the *Anopheles gambiae* complex including *An. gambiae* s.s., *An. arabienesis* and *An. melas* (on the coast) and members of the *Anopheles*

[1] https://www.cia.gov/library/publications/the-world-factbook/geos/gv.html
[2] UNDP 2011 Human Development Report. Available at: http://hdr.undp.org/en/reports/global/hdr2011/download/
[3] International Monetary Fund: Guinea: Poverty Reduction Strategy Paper - Annual Progress Report: http://www.imf.org/external/pubs/ft/scr/2012/cr1261.pdf.
[4] UNICEF: The State of the World's Children 2012. Available at: http://www.unicef.org/sowc2012/statistics.php.
[5] UNICEF: The State of the World's Children 2012. Available at: http://www.unicef.org/sowc2012/statistics.php.
[6] National Malaria Control Strategy 2006-2010.
[7] Malaria M&E Strategy 2008-2012.
[8] Plan de Gestion des Achats et des Stocks, May 2011.

funestus complex. Very little is known of the exact vector composition or insecticide resistance levels.

Malaria prevention and control in Guinea is hindered by consistent stock outs of antimalarial treatments and LLINs. As of the writing of this MOP, there were no antimalarials or LLINs in stock at the PCG and stocks at the prefecture/district levels are expected to run out by the end of July 2012. In addition, although partners such as *Médecins Sans Frontières* (MSF) have distributed limited numbers of RDTs, there are currently none in Guinea; the country has an immediate need for 1,000,000 RDTs.

C. COUNTRY HEALTH SYSTEM DELIVERY STRUCTURE AND MOH ORGANIZATION

The pyramidal structure of Guinea's health system includes approximately 850 health posts at the bottom (one per 3,000 inhabitants), serving several villages each; about 410 health centers at the sub-prefecture level, which provide preventive and curative care and supervise the health posts; 26 hospitals at the prefecture level; seven regional hospitals; and two national hospitals. The MOH oversees eight regional health directorates, which in turn oversee a total of 38 health prefectures/districts (three to six each). Each health post is staffed by an *Agent Technique de Santé*, a clinical officer with three years of training. Health centers are staffed by several clinicians, including nurses, midwives and doctors.

Access to care is a major problem in Guinea, and the MOH estimates that only around 55% of the population has access to public health care services. The MOH is investing heavily in community case management through a trained nationwide cadre of CHWs to expand health care access to communities, especially in remote and inaccessible areas. Although a comprehensive policy on community health care has not yet been elaborated in Guinea, an initiative is currently underway (a national workshop took place in July 2012), and more than 3,000 CHWs have been trained and now provide health education and basic curative care to surrounding communities. CHWs have specifically been trained to diagnose malaria and provide ACTs to patients with uncomplicated malaria. Guinea's MOH strongly supports integration of priority national health programs, including malaria, HIV/AIDs, neglected tropical diseases, nutrition, reproductive health and family planning, safe delivery, and epidemic surveillance.

D. COUNTRY MALARIA CONTROL STRATGEY

The NMCP is currently in the process of consolidating the control phase of malaria in Guinea. The 2006-2010 National Malaria Control Strategic Plan was aimed at reaching Abuja and Roll Back Malaria targets, to be achieved by scaling up key malaria prevention and treatment interventions. The goal of the strategic plan was to reduce mortality and morbidity due to malaria by 50% by 2010. Specifically, the National Malaria Strategic Plan set the following objectives and targets by 2010:

- Protect 100% of people at risk of malaria through integrated vector-control activities
- Provide case management coverage for 80% of patients through effective diagnosis and treatment with an artemisinin-based combination therapy within 24 hours of onset of symptoms

- Protect 80% of pregnant women against malaria through the provision of IPTp with SP

In order to achieve those objectives, the Strategic Plan includes the following cross-cutting activities:

- Improving malaria program management
- Improving RBM partnerships
- Developing a communication plan, including behavior change communication, advocacy, and social mobilization
- Strengthening monitoring and performance evaluation

The new National Malaria Control Strategic Plan is currently being revised with the input of partners and stakeholders and will be completed by August 2012. Development of this plan has been impeded by the political turmoil the country has faced during the past four years. The NMCP has outlined some major changes in the new strategy. These changes include:

- The introduction of RDTs
- The introduction of new medication (injectable artesunate) for treatment of severe malaria cases in addition to using up the current stocks of quinine.
- Increased integration with the religious sector including churches.
- Strengthening BCC.
- Capacity-building at the community level, with a focus on BCC and training, as well as the provision of medication and RDTs.

E. INTEGRATION, COLLABORATION AND COORDINATION

Integration of the private and religious sectors is a priority in the new malaria control strategy according to NMCP reports; in the five communes of Conakry, 60% of patients go to confessional structures first and only 40% are treated in public health facilities. Partners include: World Health Organization (WHO), World Bank, PMI, Japanese International Cooperation Agency, German Development Cooperation, Islamic Development Bank (IDB), United Nations Children's Fund (UNICEF), Global Fund, African Development Bank (ADB), MSF, Population Services International (PSI), Engender Health, Catholic Relief Services (CRS), and other regional organizations.

The NMCP also seeks to improve integration with the civil society, communities and the public sector through capacity building, the strengthening of network communication with the NMCP, non-governmental organizations (NGOs), and private sector, and raising awareness among the population about the supply of malaria commodities and use of services.

Other priorities include strengthening coordination at all levels and the development of partnerships between the department of health, other departments whose work affects malaria prevention, bilateral and multilateral partners, the private sector and communities.

F. PMI GOALS, TARGETS AND INDICATORS

The goal of PMI is to reduce malaria-associated mortality by 70% compared to pre-initiative levels in the 15 original PMI countries and to reduce malaria-associated mortality by 50% in the three new countries added to PMI in FY 2010 and later (including Guinea). By the end of 2014, PMI will assist Guinea to achieve the following targets in populations at risk for malaria:

- >90% of households with a pregnant woman and/or children under five will own at least one ITN
- 85% of children under five will have slept under an ITN the previous night
- 85% of pregnant women will have slept under an ITN the previous night
- 85% of pregnant women and children under five will have slept under an ITN the previous night or in a house that has been sprayed with IRS in the last 6 months
- 85% of women who have completed a pregnancy in the last two years will have received two or more doses of IPTp during that pregnancy
- 85% of children under five with suspected malaria will have received treatment with ACTs within 24 hours of onset of their symptoms

G. PROGRESS ON COVERAGE/IMPACT INDICATORS TO DATE

Progress in malaria prevention and treatment is difficult to assess at the this time due to lack of current data, although past national surveys showed some improvement over a four-year period ending in 2009. This period included Global Fund Rounds 2 and 6 support and ITN distribution campaigns targeting the most vulnerable groups. Recently, however, Guinea has not had regular stocks of ITNs, RDTs, and ACTs, which may impact coverage targets. The 2012 DHS is currently underway and preliminary results should be released before the end of the calendar year.

According to the 2005 DHS, only 27% of households owned any mosquito net, and 4% of households owned an ITN. Only 1% of children under five and pregnant women slept under an ITN the previous night. Intermittent preventive treatment coverage for pregnant women was very low with only 3% of women receiving at least two doses of SP during their last pregnancy. The 2007 Multiple Indicator Cluster Survey (MICS) in Guinea showed slight improvements in ITN ownership and use, although these rates were still extremely low.

As stated above, Guinea made some progress in the coverage of key malaria prevention and control interventions for the period to 2005 to 2010, after receiving funds from Round 2 and Round 6 Global Fund grants. National coverage surveys conducted with Global Fund financing in 2009 and 2010 appeared to show substantial improvement in several key indicators.[9] Coverage of IPTp (at least two doses of SP during the last pregnancy) rose from 3% in the 2005 DHS to 41% in the 2010 coverage survey. The 2010 survey also showed large increases in ITN ownership and use. After a nationwide bed net distribution campaign in 2009, 79% of

[9] Direct comparisons between the DHS and the 2009 and 2010 national coverage surveys should be made with caution due to some apparent methodological differences in how indicators were calculated and reported. The specific differences are noted in the indicator table.

households reported owning an ITN; 60% of children under five and 47% of pregnant women reported sleeping under an ITN the previous night.

The table below summarizes coverage indicators for malaria control from the most recent national surveys.

Malaria Indicator	2005 DHS	2007 MICS	National Coverage Surveys	
			2009	2010
Percent of households with at least one ITN	3.5%	12.5%	23.4%	78.8%
Percent of children less than five years old who slept under an ITN the previous night	1.4%	6.7%	12.0%	60.4%
Percent of pregnant women who slept under an ITN the previous night	1.4%	5.1%	24.7%*	46.8%*
Percent of women who received 2+ doses IPTp during last pregnancy in last 2 years	2.7%		35.9%**	41.0%**
Percent of children less than five years of age with fever in last two weeks who received treatment with ACTs within 24 hours of onset of fever	***	***	1.3%	***

* The 2009 survey report specifies use of LLINs by pregnant women while the 2010 survey report does not (i.e., it includes any treated nets).
** The 2009 and 2010 coverage surveys include a five-year look-back period instead of a two-year period and do not specify that at least one dose was taken at an ANC visit.
*** ACTs were not the first-line treatment at the time of the DHS and MICS surveys; the 2010 coverage survey report did not provide adequate data to calculate this indicator in the standard format (i.e., the denominator could not be determined).

H. CHALLENGES, OPPORTUNITIES AND THREATS

Challenges and threats:

The main obstacles in the public and community health care delivery systems include the following:

- The NMCP infrastructure is weakened by inadequate material, human, and financial resources
    - Variable electricity supply, no generator, no network internet connectivity, little fuel for vehicles, and a difficult location in the middle of a busy market
    - Staff with varying levels of expertise including gaps; in some cases with unclear terms of reference; and prevented from performing at full potential given limited resources
    - Lack of finances precludes NMCP from procuring needed supplies and commodities and meeting operational expenses

- Weak inter-sector coordination with limited or no involvement of private and religious groups, elected officials and community opinion leaders.
- There is limited capacity for case management, which is linked to the following constraints:
    - Limited commodities, including stock outs, of LLINs, RDTs, ACTs, and SP that compromise service delivery to the most vulnerable populations, leaving universal access and coverage currently unachieved.
    - Low use of IPTp is complicated by little involvement of key stakeholders, namely private and religious sectors, opinion leaders, and community-based organizations who could help improve social mobilization and BCC.
    - The lack of health care providers and supervisors responsible for implementing national policy and non-adherence to that policy by providers.
- Inadequate M&E and data collection systems (health and logistical information management) limit the NMCP's ability to obtain reliable data on disease burden, service access and utilization, quality and quantity of services provided, and needs, stocks and consumption of commodities to guide policy and practice.
- The delay of Global Fund resources has been a challenge to timely implementation of activities and procurement of commodities and any future delays will be a threat to provision of services on a nationwide scale since Global Fund covers areas that PMI does not.

Opportunities:

PMI and Global Fund are good opportunities to make progress in Guinea, although the delay in the start of Global Fund activities has had a negative impact on the NMCP and the population. Other partners such as WHO, UNICEF, World Bank, NGOs and mining companies are considered good opportunities but they are not fully engaged with the NMCP. The strong potential for collaboration with the Peace Corps includes having volunteers support malaria prevention and education activities. Additionally, the new government and the relative political stability in the country can be considered good opportunities and may have a positive impact on the NMCP. The development of the public health center of Maferinyah has the potential to support improved training and research in Guinea.

In April 2012, a roundtable was also organized by Systems for Improved Access to Pharmaceuticals and Services (SIAPS) and many technical and financial partners in order to address the issue of strengthening the pharmaceutical system. The roundtable reviewed challenges and major achievements and made recommendations. Improvement in the pharmaceutical system depends on the close following of these recommendations, which necessitates strong leadership from government officials. The creation of the Guinea Roll Back Malaria Committee is an opportunity to bring together all partners involved in malaria control.

I. PMI SUPPORT STRATEGY

In supporting Guinea's National Malaria Strategic Plan, PMI focuses on service delivery, training, and case management, including support for malaria diagnostics and treatment at the health facility and community levels. PMI's strategy is supporting the population of Guinea through the most efficient and effective use of its resources and it is considered a principal and

credited partner by the NMCP. In order to achieve results, PMI support will utilize a variety of partners, but will focus efforts on one large, bilateral program that will be charged with building capacity in many of these areas. PMI will also provide technical assistance through the presence of two Resident Advisors who will work closely on a day-to-day basis with the NMCP to help build their capacity and improve national program performance. Headquarters staff will provide additional assistance in specific technical areas such as M&E, entomology, and diagnostics.

PMI support includes:

- Procurement and delivery of LLINs to the district level.
- BCC activities to increase knowledge and use of malaria commodities among the general population.
- Support for training of health workers and community health workers on MIP and case management.
- Improvement in integrated, clinical supervision at health centers, health posts, and community levels.
- Provision of microscopes for hospitals and quality control for microscopy.
- Capacity-building for lab staff to support and improve diagnostic capacity.
- Continued support for the pharmaceutical system to strengthen the logistics and information management system, pharmaceutical system reform, and improvement of drug regulation capacity.
- Entomological support for monitoring and surveillance of vectors and capacity-building for entomologists.
- Support for M&E at the district, regional, and national levels.

PMI will continue to look for opportunities to support the national strategy, which may include better communication and coordination with private sector players, as they are the main means by which Guineans obtain health services, as well as participating in a national-level coordination council to ensure transparency and synergy with key partners like the Global Fund.

III. OPERATIONAL PLAN

A. PREVENTION

1. Insecticide Treated Nets (ITNs)

NMCP Objectives:

The 2006-2010 National Malaria Control Strategy is currently undergoing an RBM review and the 2012-2016 Strategy will be elaborated before the end of 2012. The 2006-2010 National Malaria Control Strategy targets pregnant women and children under five for ITNs, and in 2007 the policy was amended to provide long-lasting insecticide-treated nets (LLINs) free of charge. In 2009, the Government of Guinea (GOG) adopted a policy to achieve universal coverage of bed nets with one LLIN for every two persons.

Progress during the last 12 months:

With FY 2011 and FY 2012 funds, PMI will procure 1,590,000 LLINs for use in the 2013 national mass distribution campaign slated to occur in April 2013. This includes the costs of delivery down to the prefectural level; nets will not be procured until campaign dates are finalized to avoid stocking charges in country. In addition, FY 2012 funds were set aside to cover the cost of transporting these LLINs to distribution sites, planning, training, supervision, and social mobilization/communication during the 2013 campaign. A coordination committee for the national campaign was established in February 2012 and includes personnel from the MOH, NMCP and partner organizations including Catholic Relief Services (CRS), *Faisons Ensemble*, Maternal and Child Health Integrated Program (MCHIP), WHO, UNICEF, Country Coordinating Mechanism (CCM), Plan Guinea, PSI, Helen Keller International (HKI), MSF, Child Fund and PMI in-country staff. This committee was established to ensure adequate support for the planning, coordination, implementation, and evaluation of the 2013 national campaign.

The NGOs MSF Suisse, Rotary Club and UNICEF have provided at total of 90,188 ITNs in various parts of the country and the mining company Rio Tinto distributed 11,000 ITNs in 2011 in Boke, Beyla and Kerouani and plan to distribute 16,000 in 2012 in Forécariah and Macenta. The oil company TOTAL distributed 500 ITNs in Dubreka (Tanènè) in 2012.

Challenges, opportunities and threats:

Currently very few nets are available in country and LLINs are stocked out at health facilities. Procuring sufficient nets to complete the campaign and for routine antenatal care (ANC) distribution needs will be a challenge. In the 18 prefectures in the forest area of Guinea, World Bank had agreed to provide 244,650 LLINs for routine distribution but this has been on hold for more than a year due to the political unrest. The estimated gap for routine distribution of LLINs in 2012 was over 900,000 LLINs.

In June of 2009, a consortium, including UNICEF, WHO, CRS, Organization for Senegal River Management, *Faisons Ensembles*, MSF, HKI, PLAN Guinea, Orange, Rotary, and Shell, worked

with the MOH to prepare a strategic plan for the distribution of LLINs provided by Global Fund Rounds 2 and 6, UNITAID, and World Bank. According to the Global Fund-financed national coverage surveys, the two campaigns held late in 2009 contributed to an increase in ITN use by children under five from 12% to 60%.

Commodity gap analysis:

The NMCP is planning for a universal coverage (UC) campaign in early 2013. To cover the entire population of about 11 million and achieve a ratio of one LLIN for every two people, the NMCP calculates needing a total of 6.3 million LLINs (based on the WHO recommended quantification calculation of procuring one LLIN for every 1.8 targeted person). The consolidated grants of Global Fund Round 6 and Round 10 are slated to provide 3.1 million nets. The International Development Bank (IDB) is providing 1 million nets and the NMCP is soliciting other partners including UNICEF, UNITAID, and World Bank to assist in filling the gap of 2.2 million nets to cover the remainder of the country not targeted by the Round 10 grant. The PMI will provide almost 1.6 million for the UC campaign.

The LLIN need for the 2013 UC campaign is summarized in the gap analysis table below.

	2012	2013	2014	Notes
Total Need				
Population	11,074,076	11,414,149	11,771,312	Cumulative LLIN need reflects the ongoing LLIN need at an annual growth rate of 3.1% using a calculation of 1 LLIN: 1.8 people and assuming no LLINs have been procured and distributed.
LLIN need for mass campaign		6,342,985	0	
Routine ANC		513,782	529,709	Estimated as 4.5 % of population
Routine EPI		456,695	470,852	Estimated as 4.0 % of population
Global Fund Target Area: 19 prefectures				
Population	5,753,107	5,931,454	6,115,329	Absolute LLIN needs in 2012 and 2013 reflect the gap carried over from the previous year plus additional LLINs needed to cover population growth at an annual growth rate of 3.1% using a calculation of 1 LLIN: 1.8 people.
LLIN need for mass campaign		3,295,252	0	
LLINs procured by Global FundR6 & R10	3,112,222	0	0	LLINs will be procured in 2012 and 2013 but will be distributed during the universal coverage campaign scheduled for March 2013.
GAP for UC		70,870		
PMI Target Area: 14 prefectures and 5 communes of Conakry				
Population	5,320,969	5,482,695	5,655,983	Absolute LLIN needs in 2012 and 2013 reflect the gap carried over from the previous year plus additional LLINs needed to cover population growth at an annual growth rate of 1.031% using a calculation of 1 LLIN: 1.8 people
LLIN need for mass campaign		3,045,942	0	
LLINs procured by PMI	0	1,590,000		LLINs will be procured with FY 2011 and FY 2012 funds but will be distributed during the universal coverage campaign scheduled for March 2013
IDB	0	1,000,000		These LLINS are slated for where there are gaps in coverage
Others (MSF, Rotary Club and UNICEF)	0	90,188		
GAP for UC		365,754		Gap remains for the universal coverage campaign in the PMI target area

* Population figures and LLIN needs are taken from a gap analysis conducted by the NMCP in preparation for the PMI MOP team's visit (*Elements de Reponses pour la Planification de l'initiative President Américain de Lutte Contre le Paludisme [PMI] en Guinée 2011, 27 juillet 2011*).

In summary, the remaining LLIN gap for the 2013 universal coverage campaign is 365,754 in the PMI target area and 70,870 in the Global Fund target area. Based on the pledged resources from various donors for the distribution campaign, the GOG foresees that the campaign needs will be met. Throughout the coming year, PMI will monitor the situation in case circumstances change, and will adjust its plans accordingly. The total need for routine distribution for the whole

country is based on the estimated percentage of total population including pregnant women (4.5%) and children who are eligible for the Expanded Program on Immunization (EPI) (4%). Thus, the total, calculated need for routine distribution for 2013 and 2014 are 970,477 and 1,000,561 LLINs, respectively. PMI contribution of 100,000 nets for routine distribution will only meet 10% of the need for routine distribution for calendar year (CY) 2013 and CY 2014. With this contribution PMI will restart routine net distribution which has been set back by a lack of contribution from other donors.

Plans and justifications:

With FY 2013 funds, PMI proposes to provide funds to procure 100,000 LLINs to revive the system for routine distribution during for ANC visits and for the Expanded Program on Immunization (EPI). Although the national strategy includes coverage with LLINs for routine services and health facilities have distributed ITNs during ANC visits in the past, very few ITNs have been available for such activities recently. A delivery system exists in principal but does not function well, has been prone to mismanagement, and primarily has been used for pharmaceuticals. PMI will work with the NMCP and partners to improve the routine system to ensure delivery of ITNs to facilities as they need them, as well as support training around a package of services provided during "routine visits". These activities will commence on a small scale covering about 10% of the need for routine in 2014. PMI will work with Global Fund and the NMCP among others to improve the routine system and ensure delivery of nets to the facilities that need them.

As noted above, the GOG does not have sufficient LLINs pledged to complete the UC campaign, but the GOG feels that the campaign needs will be completed by other partners. PMI will monitor the situation closely and if more LLINs are needed to achieve universal coverage, these 100,000 LLINs and distribution funds will be incorporated into the UC campaign.

Proposed activities with FY 2013 funding: ($543,560)

1. *Procurement and delivery of LLINs:* Procure and deliver 100,000 LLINs for ANC. This funding will include the cost of the nets and delivery to the district level in PMI target areas. ($*449,000*);

2. *Distribution of LLINs*: Distribute 100,000 LLINs from district to community health facilities. *($94,560);* and

3. *BCC for LLIN use*: Continue to promote LLIN use as part of the integrated communication strategy following national guidelines and in collaboration with other partners. (*Funds for BCC see BCC section*).

2. Indoor Residual Spraying

NMCP Objectives:

In the 2006-2010 National Strategy, indoor residual spraying (IRS) is described as an intervention that is too costly for the country to undertake with existing funding. Although the

2012-2016 National Strategy has not been completed, the NMCP has expressed a desire for IRS implementation.

Progress during the last 12 months:

Very limited IRS activities are carried out in the districts Boke, Lola, Boffa, and Siguiri (less than 2% coverage) – all areas with extensive mining. The mining companies, Rio Tinto, BHp Billiton, and Vale have dedicated funds for malaria control interventions including IRS. Rio Tinto paid a consultant to conduct susceptibility testing in the Forécariah district in November 2011 but the data are still not available. PMI has funds to support an entomological training course for 20 personnel including entomologists from the MOH (four at the NMCP, two at the National Public Health Laboratory and one at the center for research in Maferinyah), and two entomological technicians from each of the four regions. Mosquito surveys and insecticide susceptibility assays were carried out in August and September 2012 in Boffa, and Forécariah.

Challenges, opportunities and threats:

A lack of qualified personnel, infrastructure, and funds will hinder the development of an IRS program. In addition, insecticide resistance has been detected in the areas that have been sprayed by the mining companies. BHp Billiton recently shut down operations in Guinea and therefore, all IRS operations in Boke have stopped.

At least seven entomologists are employed by the MOH with considerable experience in vector-borne disease monitoring. Nevertheless, entomological monitoring capacity is very limited due to a lack of resources (e.g., no vehicles, trapping equipment, or insectary).

Plans and justifications:

The NMCP has expressed a desire to begin IRS operations in the country, but given the critical needs for LLINs and ACTs, PMI will not support IRS activities in FY 2013. PMI will continue to support standard entomological assessments including species identification, density, behavior, and biting rates as well as insecticide resistance assays since insecticide-based control interventions (LLINs) are being implemented in the country. Currently, the plans will include monitoring entomological parameters in one sentinel site in each of the four ecological zones of Guinea and establishing a collaborative agreement with a local research laboratory for the analysis of mosquito samples including insecticide resistance mechanisms.

Proposed activities with FY 2013 funding: ($175,000)

1. *Entomologic monitoring and capacity building:* Continued support for surveillance of vectors and insecticide resistance in each of the four ecological zones as well as capacity building for entomologists and planning for the establishment of a permanent insectary. *($150,000);* and

2. *Technical assistance for entomological capacity building:* Support for two TA visits from CDC to continue assistance to develop entomologic capacity. *($25,000).*

3. Malaria in Pregnancy (MIP)

NMCP/PMI Objectives:

The NMCP adopted intermittent preventative treatment in pregnant women (IPTp) as a national policy in 2005. In 2007, the NMCP officially introduced IPTp in all 33 prefectures and five communes of Conakry and has completed training and implementation at the health facility level. The national policy recommends pregnant women receive two doses of SP during pregnancy with a third dose for all HIV seropositive women. IPTp is free of charge. According to the 2008-2012 National M&E Plan, pregnant women represent 4.5% of the population and HIV positive pregnant women total 2.5% of pregnant females according to the sero-prevalence survey in 2001.

The first sulphadoxine-pyrimethamine (SP) treatment is delivered beginning at the 16th week and is directly observed by the health worker. The second dose is also given under direct observation beginning at least one month later and an LLIN is also given at this time (although the WHO recommendation is to give the LLIN at the first visit to the ANC). Pregnant women with HIV are to be given a third dose at least one month after the second dose.

Antenatal care clinic attendance is relatively high in Guinea. The 2005 DHS showed that 83% of women make at least one ANC clinic visit. However, IPTp uptake with SP among women delivering their last pregnancy in the previous two years was only 3%. The 2010 NMCP malaria indicator coverage survey showed a great improvement in IPTp uptake to 41%.[10] However, implementation of IPTp has been hampered by significant stock outs of SP over the past two years.

Progress during last 12 months:

The plan has been for PMI to procure and distribute enough SP to cover the majority of need in the targeted 14 prefectures and five communes of Conakry for both 2012 and 2013. The Global Fund will cover SP needs in the rest of the country. With FY 2011 funds PMI has ordered and expects delivery of about 325,000 SP treatments which should cover approximately 70% of the need in the target area. In addition, PMI and its partners, *Faisons Ensembles* and MCHIP, have provided training and supervision of health facility and community workers in IPTp and prevention of MIP as part of its training in malaria case management. The national BCC plan has been updated and MIP messages are included. Radio and television ads sensitizing the community to the importance of IPTp and preventing MIP were produced and are being pre-tested. To date, a guide for community case management (CCM) of malaria was revised and validated. Also, a training manual for animators on BCC techniques related to malaria prevention and treatment was revised and validated. Story boards for educational talks and outreach activities were revised and are currently being pre-tested. Thirty-five trainers for CHWs were instructed on malaria prevention and community case management and 18 national trainers for extension agents were trained on BCC techniques related to these topics. One hundred eighty nine Health and Hygiene Committee (HHC) members from health facilities were also trained on

[10] Note that the 2010 national coverage survey used an indicator calculation reflecting a five-year look-back period instead of a two-year period and did not specify that at least one dose must be received at an ANC clinic visit.

BCC techniques related to malaria prevention and case management. Although the resource development and trainings were not specifically for MIP, they included content on MIP.

Challenges, opportunities, and threats:

The continued stock outs of SP over the past few years has hampered the implementation of IPTp as indicated by the low second SP dose coverage of 41% reported in the 2010 national coverage survey. Also limited involvement of private facilities in IPTp negatively impacts maximum coverage. The current national IPTp policy is not in line with the WHO guidelines for a less narrowly-defined dosing schedule for SP. The dosing guidelines based on gestational weeks may be confusing to health workers and contributing to low IPTp uptake.

The absence of consumption data and a strong pharmaceutical and supply chain management system hinders the ability of the NMCP to accurately forecast needs and manage supplies even when drugs become available, which hopefully will be on a more consistent basis.

With PMI support for an integrated case management training and supply of essential diagnostic and drug commodities, the human and logistical resource capacity for IPTp should improve. With MIP messages a part of the updated national BCC plan, an integrated case management strategy, and increased advocacy for an MIP policy revision that is more in line with WHO guidelines, awareness, referral, and utilization of IPTp by health facility and community workers as well as community members should improve.

Commodity gap analysis:

With an estimated population of 5.3 million in the PMI target areas and a proportion of pregnant women at 4.5%, it is estimated that 233,000 pregnancies will occur in 2014. PMI will procure approximately 465,000 treatment doses of SP to meet this need in its target areas. It is hoped that Global Fund will procure SP for the prefectures it supports, although PMI would consider contributing to nationwide gaps if there is a need.

SP contributions and needs	2012	2013	2014
Population	11,074,076	11,414,149	11,771,312
Planned SP from Global Fund	46,621	63,645	0
Planned SP from PMI	325,00	465,000	0
Planned SP from UNICEF	49,496	0	0
Total SP needs*	468,434	616,364	794,564
Gap in SP	47,317	87,719	794,564

* Based on annual targets of 47%, 60% and 75% for the years of 2012, 2013 and 2014 respectively

Plans and justifications:

PMI will continue to support activities aimed at enhancing the provision of effective malaria in pregnancy services in public and private health facilities in Guinea. To that end, PMI will procure enough SP treatment doses to cover the estimated number of pregnancies in the PMI

target areas. Additionally, PMI will continue to support BCC training and messaging to improve the demand for ANC services and understanding of the benefits of IPTp among community members and health workers. Laboratory diagnosis and appropriate treatment of MIP will be supported to reinforce the implementation of MIP services training and supervision of IPTp service delivery along with other aspects of effective case management such as use of LLINs. PMI will work with the MOH and NMCP who are prepared to update their policies with regard to IPTp and MIP based upon new WHO guidance.

Proposed activities with FY 2013 funding: ($14,400)

1. *Procure SP:* Procure approximately 465,000 treatments of SP to cover needs in the 14 prefectures and five communes of Conakry for 2014 (233,000 estimated pregnancies). *($14,400)*;

2. *BCC for IPTp*: PMI will support BCC to promote ANC clinic attendance and educate pregnant women and communities on the benefits of IPTp. This activity will include support for community-level approaches, such as training of community-based workers as well as mass media (including local radio stations). Immunization outreach sessions will be used as opportunities for educating women. This will be part of a larger integrated BCC activity to satisfy needs for case management, LLINs, and IPTp. *(Costs covered in BCC section).*

3. *Training/refresher training for MIP*: Provide training and refresher training for public and private health facility midwives and nurses to correctly deliver SP in the context of the focused antenatal care approach. Training will include benchmark assessments, on-the-job training of the new treatment algorithm, and coaching. Training will be part of an integrated training package. *(Costs covered in Case Management/Treatment section*); and

4. *Supportive supervision of health workers in IPTp to improve quality of service*: PMI will support on-site supervision for public health facility midwives and nurses to correctly deliver SP in the context of the focused antenatal care approach. Supervision will continue to be part of an integrated approach for supervision at health facilities. *(Costs covered in Case Management/Treatment section*)

B. CASE MANAGEMENT

1. Diagnosis

NMCP/PMI Objectives:

The current NMCP diagnostic policy recommends diagnostic confirmation of all suspected malaria cases among all patients aged five years and older, with either microscopy or an RDT. However, the NMCP endorses the WHO recommendation of diagnostic confirmation for suspect malaria cases among patients of all ages and plans to include this in the next iteration of its strategy for 2012-2016 which is near finalization. Testing is free with RDTs but is not free for

microscopic examination. No systematic survey of malaria treatment in Guinea exists, but a recent pilot survey in two regions conducted in collaboration with researchers from Medical Research Council in the Gambia found that at 12 health facilities (two regional hospitals, four urban health centers, three rural health centers, and three health posts), only 26% of clinically diagnosed malaria cases had a positive blood smear.

According to Guinea's health services package, all hospitals and health centers should provide microscopy services; however, the 2010 Global Fund-financed national coverage survey (that included a nationally-representative health facility component, n= 129 facilities) showed that fewer than half the facilities in Guinea had a microscope (approximately 100% of hospitals but only 40% of health centers). Microscopes often are not functional and health facilities may lack reagents and consumables. Data from the health facility survey indicated that only 43% of hospitals and health centers had slides, and 19% had Giemsa stain. Staff from the NMCP and the National Laboratory, which is part of the National Institute of Public Health, are responsible for supervision of microscopy, although no comprehensive quality assurance/quality control program has been developed for malaria.

The NMCP also supports the use of RDTs for malaria diagnosis at all levels of the health care system but they are not available in health facilities, although plans are underway to begin rolling them out, after nationwide training is completed. In addition to rolling out RDTs in health facilities, the NMCP would like to roll out RDTs at the community level through CHWs. Capacity building through training on the use of RDTs, ACTs, IPTp, and BCC for health workers and community health workers is a key part of this intervention.

Progress during the last 12 months:
During the last 12 months, PMI procured 100,000 RDTs to cover the training needs for health workers and CHWs. Faisons Ensemble used a train-the-trainers model with 32 trainers for CHWs on the subjects of malaria prevention and CCM and with 18 national trainers for NGO extension agents regarding BCC techniques related to malaria. An additional 251 health workers were trained in case management using ACTs and in IPTp. A total of 471 CHWs, HHC members, and NGO extension agents were taught BCC techniques. Additionally, 189 HHC members were trained on data collection tools and CCM, 15 activity organizers were trained on supervision tools for BCC activities, and 62 laboratory technicians were trained on microscopy and RDTs. The MCHIP staff trained 200 health workers and 120 CHWs on malaria prevention and case management. Those trained were from the PMI target areas. A guide for community case management of malaria was revised and validated. Also, a training manual for activity organizers on BCC techniques related to malaria prevention and treatment was revised and validated.

Per national policy, each health facility must have a HHC that is trained in case management and in turn teaches the community to use the facility when seeking treatment for fever. The committees are also trained to teach clinical providers and CHWs on malaria prevention and case management. In order to accommodate committees from multiple facilities, the trainings were held in Conakry. An assessment of malaria diagnostic capacity and needs, as well as quality assurance and quality control for microscopes did not occur but is slated for FY 2013.

Challenges, opportunities, and threats

One of the principal challenges has been a delay in the development of the NMCP's new national strategic framework for the control of malaria to guide future activities. The lack of commodities such as RDTs in most health facilities is a major problem but with the continued roll out to multiple levels in the health system, the situation will hopefully improve. The low level capacity and motivation of CHWs and HHC members is a challenge along with high turnover among health facility workers; this threatens the ability to grow a cadre of experienced trained workers. Despite the challenges, there has been good synergy among partners and engagement of the NMCP. Additionally, the coordination among the partners has been bolstered by the growing PMI team at USAID.

Lack of a strong pharmaceutical and commodities supply chain management and logistical management information system make it difficult for the NMCP to generate reliable data on consumption, supply, needs, and distribution of diagnostics commodities which also impacts its ability to conduct gap analyses. With training of staff, health facilities will hopefully increase their ability to collect data to use to mitigate the risk of stock outs and expiration of RDTs and microscopy consumables that donors are procuring.

Gap analysis:

The Global Fund is planning to provide RDTs in some of the program areas it is funding through Round 6 and Round 10 grants. The World Bank had provided 312,000 RDTs in the 18 districts its health project covers in the past but future contributions have not been confirmed. The table below presents RDT needs for 2013 and 2014, as specified by the NMCP.

RDT contributions and needs	**2012**	**2013**	**2014**
Population	11,074,076	11,414,149	11,771,312
Planned RDTs from Global Fund	0	889,442	890,382
Planned RDTs from PMI*	100,000	1,000,000	4,000,000
Total RDT needs	12,934,521	14,062,231	14,502,257
Gap in RDTs	12,834,521	12,172,789	9,611,875

* Distributed in PMI target areas

The calculation of RDT needs in PMI-supported areas (and the rest of the country as well) is based on the expected number of fever episodes of 1.6/person/year for approximately 5.3 million people. Also, factored into the calculation is the average service use rate of 55% in public facilities and 40% case management coverage in the community.

Plans and justification:

Those from similar disciplines as those trained in the past year will be trained in subsequent years including at least 200 service providers in CCM and MIP and 100 CHW in management of uncomplicated malaria. One thousand forty health workers, supervisors and CHWs in PMI target areas will receive refresher or new training in case management. The training for CHWs will

focus on improving their knowledge and practice of malaria prevention, diagnosis, referral, and treatment. They will be trained to provide CCM as well as other health promotion and care activities. The CCM scale-up support will aid with infrastructure strengthening, including management and logistics costs and support for data management. Activities will build upon last year's workshop on advocacy and involvement of elected officials in malaria control. Indicators and collections tools on prevention and treatment activities will continue to be harmonized with the NMCP, especially with expected revised guidelines, and with other implementing agencies. Refresher activities will enhance the training on data collection that HHC members received.

To facilitate the scale up of the use of RDTs, PMI will continue to procure RDTs and train health workers at the facility and community levels to use them as part of case management. Additionally, PMI will invest in refresher training and integrated supervision of health facility and community workers in PMI target areas to build capacity. Microscopy capacity will be supported through procurement of microscopes and needed reagents as well as through training in maintenance and repair of these diagnostic commodities. Training and supervision will be part of a comprehensive malaria diagnostic quality control and assurance plan.

Proposed activities with FY 2013 funding: ($3,150,000)

1. *Procurement of RDTs:* PMI will procure four million RDTs for health workers and CHWs to continue scaling up RDT use in health facilities and in communities via CHWs. *($2,800,000)*;

2. *Procurement of RDT-use supplies:* FY 2013 funds will be used to procure gloves and sharps disposal boxes for use with RDTs. *($40,000)*;

3. *Procurement of microscopes and reagents/consumables:* FY 2013 funds will be used to purchase 18 microscopes, reagents, slides, and repair materials for hospitals as well as reagents, slides, and repair materials for previously purchased microscopes. *($60,000)*;

4. *Improved malaria diagnostics:* Will work with the NMCP and National Laboratory to develop and support a comprehensive quality assurance and quality control plan for malaria diagnostics at all levels of the health system. This will include refresher training for lab technicians (and training on malaria microscopy for new laboratory technicians) and regular supervision of microscopy and RDT performance, including systematic review of a predetermined number of positive and negative blood smears, and simultaneous use of both tests to assess the quality of RDTs in diagnosing malaria. *($200,000)*;

5. *Training/refresher training in RDT use:* Refresher training in PMI target areas on malaria case management, including correct RDT use at all levels of the health care system. New health care workers and CHWs, as well as health workers and CHWs not yet trained with FY 2011 funds will receive an initial RDT training, and trained health workers and CHWs will receive refresher training. *(Costs covered in Case Management/Treatment Section)*;

6. *Supervision of health workers and CHWs in RDT use*: Integrated supervision of health workers and CHWs will focus on malaria diagnostics, including correct use of RDTs. *(Costs covered in Case Management/Treatment Section)*; and

7. *Technical assistance for microscopy maintenance and repair*: PMI will provide technical assistance to the NMCP and National Laboratory to develop capacity within the health system for microscope maintenance and repair. *($50,000).*

2. Treatment

NMCP/PMI Objectives:

Guinea's first-line ACT is artesunate-amodiaquine (AS-AQ), with artemether-lumefantrine (AL) as the second-line drug. The policy for treatment of severe malaria recommends intravenous quinine for both adults and children. Referral treatment for severe malaria at lower-level facilities includes either intravenous quinine or artemether. For the treatment of malaria in pregnancy quinine is recommended in the first trimester, and an ACT in trimesters two and three. ACTs are free for both adults and children, although patients must pay for other malaria drugs received, such as quinine and paracetamol, as well as for laboratory tests.

Background

Health facilities in Guinea have experienced several months of stock outs of ACTs and most other antimalarials, including quinine and SP, since spring 2011. Failure to meet Global Fund management requirements has caused suspension of Round 6 disbursement of funding, causing ACTs stock outs nationwide for Guinea, at both the central and peripheral levels. Prior to the suspension of the Global Fund activities in Guinea, the 2010 Global Fund-financed national coverage survey (that included a nationally-representative health facility component, n= 129 facilities) showed relatively good availability of drugs: 100% of facilities had the first-line AS-AQ available during the last three months, 71% had SP available, and 96% had intravenous quinine. However, serious problems with the central pharmacy PCG have resulted in stock outs of drugs for many conditions at peripheral levels in 2011.

No systematic evaluation of the quality of malaria case management in Guinea exists, but a register review conducted as part of the 2010 national coverage survey found that of 1,964 patients diagnosed with uncomplicated malaria in the two weeks preceding the survey, 1,351 (69%) received correct treatment with an ACT. Among the 408 patients diagnosed with severe malaria during that period, only 152 (37%) received the correct treatment of intravenous quinine for five days.

Progress during the last 12 months:

Fiscal year 2011 funds were used for an emergency procurement of 1,450,000 fixed dose combination AS-AQ for all age groups in response to stock outs in health facilities and among CHWs. The majority of the drugs have been delivered to health facilities short of a small amount that remains at the central level. Two hundred thousand dollars' worth of supplies for treating severe malaria were ordered including quinine, intravenous lines, glucose, tubes and

other necessary equipment. PMI staff and partners will continue discussions with the NMCP to encourage them to revise national guidelines by accepting the WHO recommendation for the use of parenteral artesunate instead of quinine for severe malaria in children in Africa.

A national workshop to review NMCP documents was organized to support the development of a new national strategic framework for the control of malaria including diagnosis and treatment of uncomplicated and severe malaria. The progress in the area of case management and treatment is intertwined with that made in the area of case management and diagnosis and are listed in the diagnosis section

Progress has been made with respect to supervision activities. Indicators and collection tools on prevention and treatment activities were harmonized with the NMCP and other implementing agencies. Supervision tools were elaborated for the needs of various levels in the health system from facilities to the community. A total of 189 HHC members were trained on data collection tools and 15 animators were trained on supervision tools for BCC activities.

Challenges, opportunities, and threats:

As with progress, some of the challenges, opportunities, and threats are similar to those for diagnosis. The lack of commodities, both diagnosis and pharmaceutical, in most health facilities is a challenge, but with the continued roll out to multiple levels in the health system, the problem will hopefully improve. The stock outs of drugs are complicated by the lack of an efficient pharmaceutical supply chain system nationwide resulting in many commodities being bottlenecked at the central level and an inability to accurately forecast needs and track supply. Following a roundtable about pharmaceutical and commodity supply chain issues in March 2012, there is the opportunity for improvement should the PCG work with donors and health facilities to establish transparent policies and procedures. Donors are working to coordinate efforts and influence the management of the pharmaceutical system to improve transparency and accountability. Additionally, with strengthening of the pharmaceutical and supply chain, it is hoped that the NMCP will have reliable data to use to conduct gap analyses.

The slow release of Global Fund monies has also been a complicating factor and has limited procurement of supplies in the non PMI target areas. Continued problems with disbursement of Global Fund resources is a threat to capacity building, procurement, and scale up of the use of RDTs and indicated treatment drugs. The low level capacity and motivation of CHWs and HHC members is a challenge along with high turnover among health facility workers and threatens the ability to grow a cadre of experienced trained workers. Despite the challenges, there has been good synergy among partners and engagement of the NMCP. Additionally, the coordination among the partners has been bolstered by the growing PMI team at USAID. The delay in the development of the NMCP's new national strategic framework for the control of malaria to guide future activities has also been a challenge however support has been given to the MOH to standardize community case management guidelines nationally so progress has been made.

Gap analysis:

Assuming that 30% of fevers will result in a positive RDT, PMI will purchase approximately 1.4 million fixed treatment doses of AS-AQ for its designated target areas. With 30% of the

approximately 4 million RDTs showing a positive result, 1.2 million doses will be needed. With the addition of a 20% buffer, the doses procured by PMI will be approximately 1.4 million at an estimated cost of $.80/treatment dose.

ACT contributions and needs	2012	2013	2014
Population	11,074,076	11,414,149	11,771,312
Planned ACTs from Global Fund	0	1,001,742	1,001,742
Planned ACTs from PMI*	915,500	0	1,400,000
Total ACT needs**	3,880,356	4,218,669	4,350,677
Gap in ACTs	2,964,856	3,216,927	1,948,935

* Distributed in PMI target areas
** Based on 30% of all RDTs needed/used both at facility and community levels

Plans and justification:

PMI will procure ACTs for all age groups to support appropriate treatment based on laboratory diagnosis. To facilitate the delivery of ACTs from the central to facility and community levels, a portion of the budget for procurement of ACTs will cover those distribution costs. The procurement of quinine for severe malaria will cover the entire nationwide need for children under five.

PMI will support integrated BCC activities to promote appropriate treatment-seeking behavior among community members. Human capacity building will continue to be a part of this intervention through clinical and refresher training in malaria case management for all age groups and vulnerable populations, and supervision of health workers and CHWs. Scale-up of community case management will also include management, logistic, and data management support.

Proposed activities with FY 2013 funding: ($3,664,500)

1. *Procure and distribute ACTs:* Procure and distribute approximately 1,400,000 ACTs. ACTs will be delivered by PCG down to the facility and community levels, so a portion of the total budget for this activity will cover distribution costs. *($1,152,000)*;

2. *Procurement of quinine for severe malaria:* PMI will fund procurement of 40,000 treatments for severe malaria in children, including quinine, along with IVs, glucose, and other necessary equipment for treatment. This procurement should cover the entire nationwide needs for severe malaria treatment for children under five, as Guinea health facilities reported 38,446 severe malaria cases among children under five in 2010. *($200,000)*;

3. *BCC for case management*: FY 2013 funds will be used to fund integrated behavior change communication and education activities for communities to improve behaviors related to malaria prevention and treatment. BCC supported in 2013 will target

prevention activities, including use of LLINs and IPTp. BCC activities will also support appropriate care seeking behaviors, particularly at the community level through use of CHWs. Particular emphasis will be placed on prompt care-seeking for fever and other symptoms of malaria. *(Costs covered in the BCC section)*;

4. *Clinical training/refresher training in malaria case management*: Training in RDT use, malaria case management, and malaria in pregnancy for health workers at hospitals, health centers, and health posts who have not been trained using previous years funds. Also, M&E training for district and regional level officials. Training of CHWs not yet trained in RDT use, in treatment of uncomplicated malaria and referral for patients with severe malaria, as well as referral of pregnant women to ANCs. Continue implementation of a comprehensive refresher training schedule for health workers and CHWs who have already received initial training. *($800,000)*;

5. *Supervision of health workers and CHWs*: Enhance clinical supervision at all levels of the health care system, including hospitals, health centers, health posts, and CHWs. District Health Team staff (*Direction Préfectorale de Santé*) and regional health team staff (*Direction Régionale de Santé*) will be actively involved in supervision activities, along with health center staff for supervision of CHWs. Supervision visits will include observation of patient consultations and feedback to providers. *($500,000)*;

6. *Community case management:* Support the scale-up of community case management in PMI target areas, including management and logistic costs, and support for data management. *($500,000)*; and

7. *Technical assistance for integrated community case management:* One CDC visit to support the MOH to standardize community case management nationally. *($12,500).*

3. Pharmaceutical Management

NMCP/PMI objectives:

The MOH has assigned the pharmaceutical system the objective of providing treatment of 100% of patients, mainly for the treatment of malaria cases. This overall objective implies supplying drugs to the health facilities nationwide in quantities and on a permanent basis.

Situational analysis:

The key player of the pharmaceutical system in Guinea is PCG. Created in 1992 by the GOG to supply the health facilities nationwide with quality drugs, in appropriate quantities and in a timely manner, PCG operates under the administrative oversight of the National Directorate of Pharmacies and Laboratory (DNPL). PCG has established pharmaceutical depots in five of the eight regions in Guinea. This group has also played a role as sub-recipient of Global Fund grants to procure drugs for the three priority diseases (HIV, Tuberculosis, and malaria). Despite its storage capacity of 4,455 square meters across the country, 3,815 of which are available in Conakry, PCG continues to struggle to fulfill its responsibilities.

Since its creation in 1992, PCG has engaged in a decentralization policy to ensure that health commodities are distributed to health facilities in the most effective manner, but its performance during the last five years has been problematic. As a result, to date, only five regional depots (Conakry, Labe, Faranah, Kankan, and N'Zerekore) have been created, making the remaining three regions (Kindia, Boke, and Mamou) dependent on the Central Warehouse in Conakry or on a neighboring depot. An assessment conducted in 2008 with the support of Grant Management Solutions concluded that numerous bottlenecks hinder the performance of PCG, among which are:

- Difficulties in handling tenders for HIV and malaria drugs, bed nets, and other commodities in ways that satisfy requirements.
- Limited human and institutional capacities, which hamper PCG's ability to respond to national needs, properly manage central inventories, and effectively decentralize activities to the regions.
- Lack of coordination among the three disease programs (HIV, Tuberculosis and Malaria), as well as the national family planning program (contraceptive commodities), which continue to evolve independently and makes PCG more as a "rented" place for storing products than a key partner in the pharmaceutical supply chain management.

Grant Management Solutions also provided key recommendations to address those bottlenecks and make the supply chain and the pharmaceutical system more responsive to the health system's needs. However, steps to address these issues have been very slow since the release of the assessment report in 2010.

Besides PCG, Guinea has 387 private pharmacies nationwide of which about 70% are located in Conakry. There are also a multitude of non-registered businesses selling pharmaceutical products with many of them serving as the only commercial outlet in a particular rural area. Those pharmacies sell a wide range of anti-malarial drugs, ranging from branded drugs to generic drugs. The price range of these drugs in the private pharmacies is between $0.53 per treatment for generic drugs to $14 per treatment for branded drugs. To supply the private pharmacies, 35 wholesale distributors operate in the country, all of which are based in Conakry.

The DNPL of the MOH ensures administrative and technical oversight to the pharmaceutical system. According to the national pharmaceutical policy, the national essential drugs list should be revised every two years, but that is not being done. The current list was revised in 2006 and includes antimalarial drugs as approved by the policy change in 2005.

Progress during the last 12 months:

Since the inception of PMI in Guinea in July-August 2011 and in the absence of a PMI team at the USAID mission, the PMI team in Washington has closely worked with the Mission, the NMCP and implementing partners to address the bottlenecks identified by various evaluations in the pharmaceutical system and specifically in the supply chain. PMI supported the development of a work plan in collaboration with the DNPL to strengthen the pharmaceutical system. To respond to the urgent need for ACTs, due to a long period of stock outs nationwide, PMI supported the PCG in distributing ACTs procured and delivered to the MOH for distribution in

all 33 prefectures. In March 2012, PMI sponsored the organization of a round table on pharmaceutical system strengthening, attended by all the major stakeholders including the GOG, the Association of Pharmacists, the Union of Pharmacists, technical and financial partners and the private pharmacy wholesalers. Recommendations were made during the forum to address some major governance issues that the pharmaceutical system is facing, mainly to ensure that PCG supplies quality drugs to the service delivery points on a timely manner and in appropriate quantities.

Challenges, opportunities and threats:

PCG is not well equipped to meet the logistical challenges that the pharmaceutical system is facing, mainly distributing drugs at health service delivery points. In addition, the GOG does not provide regular financial support to the PCG, which contributes to the stock outs of drugs at the district and health facility levels, although donors may have provided stocks of drug to support the health system. Another factor contributing to recurrent stock outs of drugs is the lack of accurate and reliable drug consumption data throughout the health system, making forecasting, procurement and distribution of malaria commodities, mainly ACTs, a random exercise as opposed to rational and informed quantification.

The legal and regulatory environment of the pharmaceutical system also needs attention. The Association of Pharmacists, created and approved by the GOG in 1990, encompasses pharmacists working for the public health sector as civil servants, as well as those operating in the private sector. In the public sector as well as in the private sector of the pharmaceutical system, there is no on-the-job training program to strengthen the capacity of pharmacists. There is also no performance evaluation framework leading to promotion in public sector pharmacists, which adds to the frustration generated by recurrent stock outs of essential drugs.

PMI will work with other partners to improve supply chain management and the Logistics Management Information System (LMIS). To continue assisting the GOG with implementing the above mentioned recommendations, PMI will use FY 2013 funds to support the GOG's efforts to continue improving the performance of the pharmaceutical system and create conditions for PCG and other key entities to ensure that malaria commodities are distributed to health facilities in a timely manner to avoid recurrent stock outs.

Following the December 2010 presidential election that inaugurated the democratic process in Guinea, an environment conducive to appropriate reforms was created to strengthen the pharmaceutical system, mainly PCG. With the advent of PMI, several donors including United Nations Population Fund, European Union, the World Bank and UNICEF are paying more attention to strengthening the pharmaceutical system in Guinea. The presence of PMI in Guinea represents an opportunity for PCG, DNPL, and other pharmaceutical structures to leverage other donors' support to improve the pharmaceutical system and make the supply chain more responsive to the needs of the health system.

A number of faith-based organizations, multilateral and bilateral donors, and mining companies also play a part in the pharmaceutical system. The existence of HHCs, mainly at the commune-level, provides a firm foundation for increased community participation in the pharmaceutical system management. At the commune level, the health and hygiene committees are composed of

citizens coming from surrounding villages, including women and men, who discuss health issues and participate in decision-making. This offers a potential for strengthening civil society's participation in strengthening the pharmaceutical system, by advocating for reducing stock outs and increasing transparency.

Also, the March 2012 round table created a consensual platform that may generate more commitment from the GOG in favor of the pharmaceutical system. PMI will continue working with PCG and donors to assist with improving the governance of PCG and create conditions for supplying drugs to service delivery points nationwide.

Guinea has established a pharmacovigilance system, but it is not currently functional. At PCG as well as in private wholesalers, there is no lots tracer mechanism for drugs, which represents a real threat to public health. Quality control of reagents and tests results is limited.
Guinea has signed various international conventions on drugs and narcotics. The country adheres to the WHO international certification system ensuring quality of drugs. As a result, a national drugs quality control laboratory was created in 1999 with a mandate to perform physical, chemical and pharmaceutical analyses of all imported drugs and reagents. However, for various reasons, including lack of appropriate laboratory equipment, the national drug quality control laboratory does not perform its duties on a regular basis. Also, the work of the national laboratory and the PCG is not well coordinated, which translates into a lack of collaboration.

Plans and justification:

The Guinea pharmaceutical system needs a great deal of attention, with support and efforts from all stakeholders to address the multiple governance issues hindering its performance. Since 2011, its first year of implementation, PMI planned on playing the lead role in supporting the pharmaceutical system, in order to assist the country to reduce morbidity and mortality due to malaria. In collaboration with the mission PMI staff, the implementing partners and other donors, PMI will closely monitor the implementation of activities planned in FY 2011 and FY 2012 MOPs to strengthen the pharmaceutical system.

With FY 2013 funds, PMI will support an initial review and assessment of drug regulatory policies, logistics management systems, and pharmaceutical supply chain management and work on plans for reform and improvement of these key components of the overall pharmaceutical system in Guinea. PMI is providing $400,000 with the consideration of other donors' interventions to support the supply chain, such as the European Union and UNFPA, although the extent of these commitments has yet to be confirmed. Should this amount be insufficient to support the supply chain in calendar year 2014, the Guinea PMI Team will consider a reprogramming of additional funding, taking in to account the context. USAID will contribute with other funding streams that are available.

The following are outcomes from the round table between partners and stakeholders on malaria in Guinea:

- PMI/SIAPS finalized the assessment of the national regulatory authority for pharmaceuticals and laboratories (DNPL).
- PMI/SIAPS supported the updating of training modules on pharmaceutical management.

- UNICEF contributed to training of trainers initiated by PCG.
- WHO funded the revision of the National Essential Medication List.

Proposed activities with FY 2013 funding: *($400,000)*

1. *Support for improving logistic management information systems (LMIS)*: Continue support to strengthen the LMIS to enable the pharmaceutical system to collect, compile, and process consumption data throughout the health system in order to improve the forecasting, the procurement, and the distribution of commodities. Includes procurement of computers, support for internet connectivity, capacity building for quantification at the central level (PCG, DNPL), as well as at the regional, prefecture, and district level *($150,000)*;

2. *Support pharmaceutical systems reform*: Continue to support the reform of regulations governing the supply chain management system, including advocacy for implementing a convention between the GOG and PCG, which was signed on October 14, 2011 and improvement of the governance of PCG (renewal and functioning of the board, information sharing, civil society and private sector's participation, etc. *($150,000);* and

3. *Support to improve drug regulatory capacity*: Continue to support improvement of the regulatory and oversight capacities of the DNPL, revision of national list of essential drugs, and enhanced control of compliance to the pharmaceutical policy and regulations by PCG, and the private pharmacies network. *($100,000)*.

C. MONITORING AND EVALUATION/OPERATIONS RESEARCH

NMCP/PMI Objectives:

Monitoring and evaluation is a key component of Guinea's National Malaria Control Program. The NMCP is working to ensure there is a coordinated plan for malaria data capture to inform programmatic interventions and measure outcomes and impact. In 2008, the NMCP developed and adopted a costed national malaria M&E plan covering the years 2008-2012. With PMI assistance, the NMCP will revise the existing M&E plan to develop the next iteration, including a revised budget, for 2013-2017. Currently, the NMCP relies on the following data sources for its malaria monitoring and evaluation system:

Routine system
HMIS
According to the NMCP, the quality of routine malaria data is currently one of the biggest challenges for M&E. Due to these quality issues as well as lack of capacity at various levels, a systematic review process for analyzing and using routine malaria data appears to be missing.

Integrated Disease Surveillance and Response (IDSR)
Weekly epidemic surveillance reports are supposed to be gathered from health centers by the district HMIS officers and sent on to the National Prevention Department within the MOH. All confirmed malaria cases are reported, but the data is not used because it is insufficient since not

all facilities are reporting up the chain. The weekly report includes cases of notifiable infectious diseases, including malaria. However, numbers on weekly malaria cases are often incomplete and do not add up to the monthly numbers reported on the HMIS, as some health centers tally numbers more comprehensively at the end of the month.

Cross-sectional survey data

Guinea has implemented a DHS in 2005, a MICS in 2007, and Global Fund-supported national coverage surveys conducted in 2009 and 2010 to measure population coverage with basic interventions (ITNs, IPTp, and ACTs), as well as a health facility component assessing commodity availability and case management practices. Until the 2012 DHS results are available, Guinea has no national-level estimates of malaria parasitemia. The table below summarizes available survey data as well as anticipated large-scale survey activities for the next five years.

Calendar Year	Survey	Notes
2005	DHS	
2007	MICS	
2009	National Coverage Survey	Included health facility component to assess commodity availability and case management practices
2010	National Coverage Survey	
2012	DHS	Includes first national parasitemia estimates
2013	Health Facility Survey - *Planned*	Will assess commodity availability, diagnostic capacity, and case management practices
2014	MIS - *Planned*	
2014	EUV - *Planned*	Regular (e.g., every 6 months) assessment to track commodity availability
2017	DHS - *Planned*	

Progress during the last 12 months:

As a result of NMCP and implementing partner efforts, including PMI, M&E activities have shown varying degrees of progress in the last year:

Evaluation of 2006-2010 National Malaria Strategic Plan and update to M&E Plan for 2013-2017

The 2006-2011 national strategy review is following the RBM malaria program review (MPR) process, led by a WHO consultant. This process consists of four phases and Guinea has completed the first two: planning, and compilation and review of relevant documents. The next phase consists of field visits at the regional and local levels. At the time that this MOP was written, Guinea was awaiting the arrival of the field team and the funds to support the field activities. The final phase of the MPR consists of writing the report, making recommendations, and updating policies as well as the next iteration of the national strategy based on MPR findings. As a key partner of the NMCP, PMI will provide technical support and consultation in the final phase of the review. PMI will also provide technical assistance to the NMCP in developing the next iteration of its M&E plan for 2013-2017.

Routine Data and HMIS Strengthening

The *Bureau de Statistiques et de Développement* (BSD) has entered a large backlog of HMIS data from 2009-2011. Yearly reports have been created but not finalized. Inconsistencies in these data were evident upon the MOP team's initial review, but the compilation of data has progressed over the last 12 months. All indicators related to malaria prevention and treatment including supervision indicators and data collection tools on malaria prevention and treatment activities were harmonized with the NMCP and other implementing agencies at a June 2012 workshop. The harmonization occurred at the national level. These indicators include the number of pregnant women who received the first dose of SP during the second trimester, the number of pregnant women who received two doses of SP during pregnancy, the number of days of stock outs of SP, number of health centers with stock outs of ACTs and quinine, the number of ANC visits, and the number of ACTs distributed. The NMCP will soon release the final version of the monthly reporting form which resulted from the workshop and distribute it to the health centers. In addition to national revisions to HMIS reporting, in PMI focus districts, tools concerning BCC data collection and case management at the facility and community levels were revised and are currently being implemented; health workers have begun reporting monthly using these new tools. Routine system strengthening activities will continue to build upon this progress and apply lessons learned as these tools and processes are implemented and monitored.

DHS 2012

The 2012 DHS will provide the first national parasitemia estimates in Guinea. The last DHS was conducted in 2005, before substantial scale up of malaria interventions. The 2012 DHS results will be available by the end of the calendar year. Interpretation of results, including comparison to subsequent surveys for parasitemia (e.g., MIS), will take into consideration the seasonality of data collection.

Health Facility Survey

Activities have not yet been undertaken for implementation of the health facility survey. The survey will assess health facility readiness to provide effective malaria services, including diagnostic capacity and anti-malarial drug stocks, as well as health worker case management practices. Because proper assessment of diagnostics and case management practices is dependent on availability of diagnostics commodities (i.e., RDTs), the survey will not be implemented until RDTs have been rolled out to all health facilities and health workers have been trained. This survey will be conducted in collaboration with the *Institut National de Santé Publique*.

Therapeutic Efficacy Studies

According to the Director of the Maferinyah Training Center, a study on the efficacy of artesunate-amodiaquine (AS-AQ) was started in March 2011 and is currently ongoing. This study was conducted once with MSF Switzerland. Additional studies are supposed to be supported by the Global Fund. As the in-country Guinea team increases its capacity to engage in these activities, PMI will identify opportunities to support the studies through a MOP-approved TDY.

Challenges, opportunities, and threats:

A key difficulty is data collection, as the NMCP estimates only 35% of malaria cases are actually reported. Lack of equipment such as internet, computers and forms is another challenge. The NMCP lacks funding to carry out essential training workshops.

The NMCP acknowledges major deficiencies in their general M&E capacity with respect to lack of material resources for basic functions like data transmission, as well as lack of technical capacity amongst the personnel. While the challenges to their M&E capacity are not insignificant, the NMCP has clearly articulated their M&E needs with respect to areas such as training, supervision, data quality, and data use. This awareness is evidence of the NMCP's commitment to improving their M&E system. In addition, the Directorate of Research at the MOH has M&E at the top of its agenda so there is strong awareness for the importance of M&E, not only for malaria, but for the whole health sector.

Community data are not currently integrated into the HMIS reporting system. The lack of community-based reporting has been identified as a gap by the NMCP, but has not been identified as a priority issue for M&E support in FY 2013; we will re-visit this for FY 2014 planning when the M&E system has strengthened its data collection capacity.

Plans and justification:

In its third year of implementation, PMI will continue to build on gains made in improving Guinea's M&E system for malaria. PMI will continue support for cross-sectional household surveys to enable reporting on key malaria indicators for coverage and health impact. Proposed activities will also support health facility-based data collection systems. The End Use Verification survey (EUV) will provide data for commodities management, and routine system strengthening activities will contribute to more robust epidemiological data collection as well as M&E capacity building at various levels of the health system. M&E technical assistance provided by Resident Advisors and M&E headquarters staff will ensure that the proposed activities result in contributions to the NMCP's capacity to monitor malaria interventions and evaluate their impact on Guineans' health.

Proposed activities with FY 2013 funding: *($712,500)*

1. *Malaria Indicator Survey:* PMI M&E guidance recommends that countries track intervention coverage and health impact through national-level population-based surveys every two years. Guinea will have conducted a DHS in 2012 which will provide the country's first parasitemia measures in addition to coverage indicators. A 2014 MIS will provide follow-up data points that reflect scale up of PMI and other donor activities. The information from this series of large surveys will be used to inform program planning and to document program impact for the Guinea Impact Evaluation *($400,000);*

2. *End Use Verification Survey:* The EUV survey will likely be conducted on a semi-annual basis to monitor the availability and use of key malaria control commodities at the health facility level. These surveys are designed to provide rapid results to help inform logistics

management for key commodities. Improved logistics management is directly related to the health system's ability to provide effective case management *($150,000);*

3. *Routine System Strengthening:* Routine system strengthening activities will continue to build upon progress already made in M&E training at the district, regional, and national level. Activities will focus on data quality (including completeness, timeliness, and accuracy) and data use for decision making. A situational assessment of the routine malaria data collection system will be conducted to identify gaps in the current M&E system for malaria. Specific activities will be prioritized based on the identified gaps. All routine system strengthening activities will have measurable outcomes to ensure tangible progress *($150,000); and*

4. *Technical Assistance for M&E:* A CDC M&E TDY will provide technical assistance for ongoing M&E activities including routine system strengthening and NMCP M&E capacity building. The country team and the USAID mission will help guide the scope of work and identify priority activities for this TDY *($12,500).*

D. BEHAVIOR CHANGE COMMUNICATION

NMCP Objectives

In its current National Malaria Strategic Plan, the NMCP has clearly spelled out a comprehensive vision of integrated communication to prevent and control malaria in Guinea, making communities primarily responsible for BCC, advocacy and social mobilization activities.

To fill the communication gap, the NMCP developed a communication plan in 2009 as part of the current Strategic Plan. The communication plan emphasizes appropriate communication strategies, means and channels (television, community radios, and traditional communication means) to reach various target groups with culturally appropriate information on malaria prevention and control conducted by the NMCP.

Many partners including donors, international and local NGOs, and the private sector are supporting BCC activities. Whether those activities are implemented based on the communication plan has yet to be seen, since no formal evaluation of BCC activities has been conducted by the NMCP.

Despite the communication and social mobilization activities implemented at all levels, but mostly at the community levels, coordination of these activities and guidance of implementers will be necessary to make sure the NMCP communication plan is implemented by all involved.

Progress during the last 12 months

To increase effectiveness of malaria control and prevention the NMCP and partners are providing trainings in BCC to health workers and CHWs and developing the strategy for health education in order to promote and increase the use of bed nets, in particular for pregnant women and children under five; prompt visits to clinics at the first sign of fever; IPTp for pregnant women; and completion of malaria treatment courses. The strategy of the BCC plan includes:

- The organization of educational talks by trained members of HHCs;
- Production and broadcasting of television and radio spots on seeking care and IPTp;
- Production of brochures and posters on malaria prevention and treatment; and
- Broadcasting of radio programs on malaria prevention and treatment.

The NMCP and PMI through implementing partners have reviewed and validated the BCC plan and have recorded the following progress:

- The completion of a five-year national communication plan for malaria prevention;
- Completion of a training manual on BCC;
- The development of visual aids for BCC;
- Training on BCC, including the training of 18 trainers, 189 members of HHCs in five prefectures of Labe and five communities of Conakry and 35 leaders of the four NGOs partners, who will organize educational sessions in their communities and health centers;
- Development and distribution of data collection tools;
- Grant receipt by four NGOs for the organization and supervision of BCC activities in prefectures covered by PMI;
- Production and pretesting of one radio spot and one television spot on the promotion of seeking immediate care for fever and IPTp; the media contracts are currently being signed;
- Finalizing of two posters on care utilization and IPTp; and
- Planning of eight radio programs on malaria for airing in PMI regions.

Challenges, opportunity and threats

Some of the needs reported by implementing partners are the evaluation of the basic knowledge of health workers and CHW, improvement of interpersonal communication and the additional cost of translating messages into different local languages.

The positive perception of BCC activities is a cause for optimism and is an opportunity to expand BCC activities. MSF Switzerland has conducted a research study on people's perceptions, common knowledge of, and behavior related to malaria. They found that Guineans do not have strong knowledge of the causes of malaria and transmission. Additionally, the study found that people do not seek early care.

Plans and justification

PMI will continue to support the BCC, interpersonal communication and community mobilization strategic plan of the NMCP with implementing partners by providing resources to train health workers on the communication package and improving malaria prevention and treatment seeking behavior with production and dissemination of communication materials and mass messaging.

Proposed activities with FY 2013 funding; ($500,000)

1. *BCC for ITN and IPTp use as well as for use of case management (RDT and ACT use):* BCC will be part of an integrated communication package including ITN use, MIP, and community case management, following national standards, and in conjunction with what other donors are doing in their respective target areas. This activity will be implemented in health districts targeted by PMI, using the NMCP communication plan, and including grants to local NGOs to implement BCC activities, refresher training for health workers, CHWs and Hygiene committees, use of mass media, and reproduction of education materials. *($500,000).*

E. HEALTH SYSTEMS STRENGTHENING/CAPACITY BUILDING

PMI/NMCP Objectives:

The Ministry of Health has assigned several objectives to the NMCP, the most important of which are to:

- Promote the national malaria control policy, based on the RBM partnership principles;
- Formulate and facilitate the approval of the national malaria strategic plan to reduce morbidity and mortality due to malaria;
- Elaborate, monitor and evaluate implementation of the national malaria strategic plan, on an annual basis;
- Mobilize and manage human, financial and material resources necessary for the implementation of the national malaria strategic plan; and
- Promote and develop partnerships with all stakeholders in the control of malaria.

The 2006-2010 National Malaria Strategic Plan calls for the strengthening of the management capacity of the NMCP in order to achieve the above listed objectives of the program. This includes assigning to the program an appropriate number of staff that have the technical as well as managerial and leadership capacity to effectively coordinate the program.

Situation analysis:

The Guinea NMCP is staffed with 11 professionals led by a coordinator and a deputy coordinator and comprises five entomologists (the five entomologists are biologists who act as entomologists), three M&E specialists, four biologists, and one accountant. Most of the staff members have been working at the NMCP during the past five years and thus have a good knowledge of the program. Recently, the NMCP has been reshuffled by the Minister of Health, bringing new blood onboard. Although, the MOH's officials state that the GOG supports the salary of the majority of the program personnel, no information is available as to the GOG's budgetary contribution to the program operations. The NMCP receives financial support from the Global Fund to cover many operating expenses, including salary for part of the staff, office supplies, transportation means, and gas for routine operations.

Overall, the Guinea health system suffers from a lack of qualified health workers at all levels. In an attempt to fill this gap, the GOG has engaged in 2011 in the recruitment of 1,300 health workers, including physicians, nurses, midwives, and laboratory technicians who were deployed throughout the country. In addition, the GOG plans on increasing the number of CHWs to provide health care services, mainly malaria prevention and community case management, to the 60% of the population who do not use public health facilities. The GOG plans on strengthening the capacity of approximately 3,000 CHWs to provide better quality of community case management. The current gap of human resources (all categories) in the health system is estimated at 3,000, for which funding has yet to be identified.

Efforts are underway at the MOH to integrate health interventions to improve the performance of the health system. During the last six years, a lack of supervision has affected the quality of malaria case management. Support for training provided by malaria donors has also suffered from lack of coordination by the NMCP, which has contributed to the poor performance of the health system.

Progress during the last 12 Months:

Due to the competing priorities of urgent commodity needs, less emphasis has been placed on capacity building since PMI's inception in July 2011. However, PMI has taken important steps in supporting coordination of the malaria control program, allowing the NMCP to meet partners and other stakeholders on a monthly basis to share information. To enable the NMCP to communicate better with its partners, PMI has provided key NMCP staff with portable internet connection keys, which has significantly improved their operations. Also, the health system strengthening component of PMI has also moved a few steps forward in conducting training of trainers in malaria diagnosis through microscopy.

Challenges, opportunities and threats:

Guinea possesses several training institutions that can work with the NMCP to provide on-the job training as well as refresher training. One of them is the National Institute for Public Health, which has developed malaria training modules and conducted research activities, the most recent of which is a pilot study on malaria case management in health facilities. In addition, the National Nursing School of Kindia trains hundreds of nurses in a three-year program. The Maferinyah Training and Research Center supported by the African Development Bank (ADB) represents an opportunity for health system strengthening as it is staffed by highly qualified experts who were trained at the Malaria Research and Training Center in Mali.

The new strategic plan is under development with support from RBM and other partners including PMI. In preparation of the evaluation of the current strategic plan, the NMCP has identified several key capacity building priorities:

- Organization of quarterly meetings to review and validate malaria data and information;
- Supervision at the regional and prefectural levels;
- Support to quarterly supervision by the central level of the MOH; and
- Strengthening the capacity of CHWs.

A large part of the NMCP operations cost is paid by the Global Fund and with the uncertainty of the disbursement of the consolidated Round 6 and 10 grants, due to many reasons, the NMCP may not have resources to function in the near future if the situation is not clarified and disbursement made.

Plans and justification:

Given the challenges facing malaria prevention and control in Guinea, PMI resources will be used to address priorities that are directly linked to malaria service delivery. PMI will work with other donors to improve coordination, to enable the NMCP to progressively fill service delivery gaps. In FY 2013, in addition to supporting training and supervision of health workers and community health workers in effective malaria case management, PMI will put a special emphasis on strengthening the capacity of the NMCP and other key staff involved in malaria control in malariology, to enable them to better understand the disease and take appropriate steps to implement malaria control policies and guidelines. The malariology course will be coordinated by the WHO and involve approximately 15 to 20 health professionals. Funding will be provided by PMI and other donors supporting malaria control in Guinea. Other capacity building activities include supporting entomological training and establishing a partnership between the NMCP and Peace Corps.

Proposed activities with FY 2013 funding: *($240,000)*

1. *Support malariology course in Guinea*: Support a malariology course to take place in Guinea for 15 to 20 participants selected nationwide, in collaboration with WHO, the National Public Health Institute, and other donors supporting malaria in Guinea. *($50,000);*

2. *Support to the NMCP to improve program management*: Assist with team building, logistics and supervision, office management including communication capacity/connectivity, and M&E systems strengthening. The fund will be transferred to the NMCP to implement the activities based on a work plan discussed with the PMI Team *($150,000);*

3. *Support to Peace Corps:* Maintain a Response Volunteer in Conakry and to supervise volunteers who are supporting PMI activities *($20,000)*; and

4. *Support training for two people in entomology:* Training for two people in entomology in Bamako *($20,000).*

F. STAFFING AND ADMINISTRATION

One health professional has been recruited by USAID as a Resident Advisor to oversee PMI activities in Guinea. A second Resident Advisor is being recruited by CDC. In addition, one Foreign Service National was hired to support the PMI team. All PMI staff members are part of a single inter-agency team led by the USAID Mission Director. The PMI team shares responsibility for development and implementation of PMI strategies and work plans, coordination with national authorities, managing collaborating agencies, and supervising day-to-

day activities. Candidates for these positions are interviewed and evaluated jointly by USAID and CDC.

The two PMI Resident Advisors will work together to oversee all technical and administrative aspects of PMI, including finalizing details of the project design, implementing malaria prevention and treatment activities, monitoring and evaluation of outcomes and impact, and reporting of results. Both staff members will report to the USAID Mission Director or whomever she designates. The CDC Resident Advisor will be supervised by CDC both technically and administratively. All technical activities are undertaken in close coordination with the MOH/NMCP and other national and international partners, including the WHO, UNICEF, the Global Fund, World Bank, and the private sector.

The USAID Mission Director approves the hiring of local staff to support PMI activities either in ministries or in USAID. Because of the need to adhere to specific country policies and USAID accounting regulations, any transfer of PMI funds directly to ministries or host governments needs to be approved by the USAID Mission Director and Controller.

Proposed activities with FY 2013 funding: ($1,100,000)

1. *USAID technical staff:* Support one Resident Advisor and one Foreign Service National to support malaria activities and administration costs *($700,000)*; and

2. *CDC technical staff*: Support one Resident Advisor *($400,000)*.

TABLE 1
President's Malaria Initiative – *Guinea*
Year four (FY 2013) Budget Breakdown by Partner ($10,000,000)

Partner Organization	Geographic Area	Activity	Budget
USAID/Deliver Project	PMI Target Areas	Procure LLINs, SP, RDTs, Microscopes, and Quinine	4,715,440
TBD	PMI Target Areas and Nationwide	Entomological monitoring, LLIN distribution, BCC, training, supervision, microscopy repair, capacity building, end-use verification survey, strengthening HMIS	2,964,560
Systems for Improved Access to Pharmaceuticals and Services	National Level	Capacity development in logistics management, pharmaceutical systems reform, and improving drug regulatory capacity	400,000
Improving Malaria Diagnostics	PMI Target Areas	Quality assurance and control for microscopy, and National Reference Lab capacity building	200,000
MACRO	Nationwide	Malaria Indicator Survey	400,000
NMCP	National and Prefectural Level	Support to NMCP to build capacity	150,000
Peace Corps	Nationwide	Support Response Volunteer	20,000
Centers for Disease Control Interagency Agreement	National	Technical Assistance for Entomology, CCM, and M&E	50,000
	Conakry	One Resident Advisor	400,000
USAID/Guinea	Conakry	One Resident Advisor and One Locally-engaged Staff	700,000
TOTAL			**10,000,000**

TABLE 2
President's Malaria Initiative – *Guinea*
Planned Obligations for FY 2013 ($10,000,000)

Proposed Activity	Mechanism	Budget	Geographic Area	Description of Activity
PREVENTION				
Insecticide-Treated Nets				
1. Procurement and delivery of LLINs	USAID/Deliver Project	449,000	PMI Target Areas	Procure and deliver to the district level 100,000 LLINs to be distributed for routine ANC and immunization services for pregnant women and children under five respectively.
2. Distribution of routine LLINs	TBD	94,560	PMI Target Areas	Pay for distribution costs of routine nets from the district level to health facilities.
3.BCC for LLIN use	TBD	(Costs covered in BCC section)	PMI Target Areas	BCC for ITN use will be part of an integrated communication package including malaria in pregnancy and case management, following national standards and in conjunction with what other donors are doing in their respective target areas.
Subtotal: ITNs		**$543,560**		
Indoor Residual Spraying				
1. Entomological monitoring and capacity building	TBD	150,000	Nationwide	Entomological monitoring and surveillance of vectors for insecticide resistance, and capacity building for entomologists and insectary development and management.
2. TA for entomological capacity building	CDC IAA	25,000	Nationwide	Funding for two TA visits from CDC to help develop entomological capacity at the national and prefectural level.
Subtotal: IRS		**$175,000**		

Proposed Activity	Mechanism	Budget	Geographic Area	Description of Activity
Malaria in Pregnancy				
1. Procure treatments of sulphadoxine-pyrimethamine (SP)	USAID/Deliver Project	14,440	PMI Target Areas	Procure approximately 465,000 treatments of SP to cover all of the needs in the 19 PMI-supported prefectures for 2014 (233,000 estimated pregnancies).
2. BCC for IPTp	TBD	(Costs covered in BCC section)	PMI Target Areas	Support BCC to promote ANC clinic attendance and educate pregnant women and communities on the benefits of IPTp. This activity will include support for community-level approaches, such as training of community-based workers as well as mass media (including local radio stations). Immunization outreach sessions will be used as opportunities for educating women. This will be part of a larger integrated BCC activity to satisfy needs for case management, LLINs, and IPTp.
3. Training/Refresher training for malaria in pregnancy	TBD	(Costs covered in Case Management/Treatment Section)	PMI Target Areas	Provide training and refresher training for public and private health facility midwives and nurses to correctly deliver SP in the context of the focused antenatal care approach. Training will include benchmark assessments, on-the-job training of the new treatment algorithm, and coaching. Training will be part of an integrated training package.
4. Supervise health workers in IPTp to improve quality of service	TBD	(Cost covered in Case Management/Treatment Section)	PMI Target Areas	On-site supervision for public health facility midwives and nurses to correctly deliver SP in the context of the focused antenatal care approach. Supervision will continue to be part of an integrated approach for supervision at health facilities.
Subtotal: Malaria in Pregnancy		**$14,440**		
CASE MANAGEMENT				

Proposed Activity	Mechanism	Budget	Geographic Area	Description of Activity
Diagnosis				
1. Procure rapid diagnostics tests (RDTs)	USAID/Deliver Project	2,800,000	PMI Target Areas	Procure approximately 4,000,000 RDTs to continue scaling up RDT use in health facilities and in communities via CHWs.
2. Procure RDT-use supplies	USAID/Deliver Project	40,000	PMI Target Areas	Procure gloves and antiseptic wipes for use with RDTs.
3. Procure microscopes and consumables	USAID/Deliver Project	60,000	PMI Target Areas	Procure 18 microscopes, reagents, slides and repair materials for hospitals as well as reagents, slides and repair materials for previously purchased microscopes.
4. Improved malaria diagnostics	TBD	200,000	Nationwide	Will work with the NMCP and National Laboratory to develop and support a comprehensive quality assurance and quality control plan for malaria diagnostics at all levels of the health system. This will include refresher training for lab technicians (and training on malaria microscopy for new laboratory technicians) and regular supervision of microscopy and RDT performance, including systematic review of a predetermined number of positive and negative blood smears and simultaneous use of both tests to assess the quality of RDTs in diagnosing malaria.
5. Training/refresher training in RDT use	TBD	(Costs covered in Case Management/Treatment Section)	PMI Target Areas	Refresher training in PMI target areas on malaria case management, including correct RDT use at all levels of the health care system. New health care workers and CHWs, as well as health workers and CHWs not yet trained with FY2011 funds will receive an initial RDT training, and trained health workers and CHWs will receive refresher training.
6. Supervision of health workers and CHWs in	TBD	(Costs covered in Case Management/Treatment	PMI Target Areas	Integrated supervision of health workers and CHWs focusing on malaria diagnostics, including correct

Proposed Activity	Mechanism	Budget	Geographic Area	Description of Activity
RDT use		Section)		use of RDTs.
7. Technical assistance for microscopy maintenance and repair	TBD	50,000	Nationwide	Technical assistance to the NMCP and National Laboratory to develop capacity within the health system for microscope repair.
Subtotal: Diagnosis		**$3,150,000**		
Treatment				
1. Procure and distribute ACTs	USAID/Deliver Project	1,152,000	PMI Target Areas	Procure and distribute approximately 1,400,000 ACTs. ACTs will be delivered by PCG down to the facility and community levels, so a portion of the total budget for this activity will cover distribution costs.
2. Procurement of quinine for severe malaria	USAID/Deliver Project	200,000	Nationwide	PMI will fund procurement of 40,000 treatments for severe malaria in children, including quinine, along with IVs, glucose, and other necessary equipment for treatment. This procurement should cover the entire nationwide needs for severe malaria treatment for children under five, as Guinea health facilities reported 38,446 severe malaria cases among children under five in 2010.
3. BCC for case management	TBD	(Costs covered in BCC section)	PMI Target Areas	FY2013 funds will be used to fund integrated behavior change communication and education activities for communities to improve behaviors related to malaria prevention and treatment. The BCC supported in 2013 will target prevention activities, including use of LLINs and IPTp. BCC activities will also support appropriate care seeking behaviors, particularly at the community level through use of CHWs. Particular emphasis will be placed on prompt care-seeking for fever and other

Proposed Activity	Mechanism	Budget	Geographic Area	Description of Activity
				symptoms of malaria.
4. Clinical training/refresher training in malaria case management	TBD	800,000	PMI Target Areas	Training in RDT use, malaria case management, and malaria in pregnancy for health workers at hospitals, health centers, and health posts who have not been trained using previous years funds. Also, M&E training for district and regional level officials. Training of CHWs not yet trained in RDT use, in treatment of uncomplicated malaria and referral for patients with severe malaria, as well as referral of pregnant women to ANCs. Continue implementation of a comprehensive refresher training schedule for health workers and CHWs who have already received initial training.
5. Supervision of health workers and CHWs	TBD	500,000	PMI Target Areas	Enhance clinical supervision at all levels of the health care system, including hospitals, health centers, health posts, and CHWs. District Health Team staff (*Département Préfectoral de Santé*) and regional health team staff (*Département Régional de Santé*) will be actively involved in supervision activities, along with health center staff for supervision of CHWs. Supervision visits will include observation of patient consultations and feedback to providers.
6. Community case management	TBD	500,000	PMI Target Areas	Support the scale-up of community case management in PMI target areas, including management and logistic costs, and support for data management.
7. TA for integrated community case management	CDC IAA	12,500	National Level	One CDC visit to support the MOH to standardize CCM nationally.

Proposed Activity	Mechanism	Budget	Geographic Area	Description of Activity
Subtotal: Treatment		**$3,664,500**		
Pharmaceutical Management				
1. Logistic management information systems	Systems for Improved Access to Pharmaceuticals and Services	150,000	National and Regional Level	Continued support to strengthen the Logistics Management Information System to enable the pharmaceutical system collect, compile and process consumption data throughout the health system in order to improve the forecasting, the procurement and the distribution of commodities. Includes procurement of computers, support for Internet connectivity, capacity building for quantification at the central level (PCG, DNPL) as well as at the regional, prefectures and district levels.
2. Pharmaceutical systems reform	Systems for Improved Access to Pharmaceuticals and Services	150,000	National Level	Continue to support the reform of regulations governing the supply chain management system, including advocacy for signing a convention between the Government and PCG and improvement of the governance of PCG (renewal and functioning of the board, information sharing, civil society and private sector's participation, etc.).
3.Improve drug regulatory capacity	Systems for Improved Access to Pharmaceuticals and Services	100,000	National Level	Continue to support improvement of the regulatory and oversight capacities of the DNPL, revision of national list of essential drugs and enhanced control of compliance to the pharmaceutical policy and regulations by PCG and the private pharmacies network.
Subtotal: Pharmaceutical Management		**$400,000**		

Proposed Activity	Mechanism	Budget	Geographic Area	Description of Activity
MONITORING AND EVALUATION/OPERATIONS RESEARCH				
1. Malaria Indicator Survey	MACRO	400,000	Nationwide	Support an MIS in 2014. Contributions will be made by other partners, too.
2. End-use Verification	TBD	150,000	Nationwide	Provide support to monitor the availability and utilization of key antimalarial commodities at the health facility level.
3. Routine system strengthening	TBD	150,000	Nationwide	Implement activities to strengthen routine malaria data quality (including completeness, timeliness, and accuracy) and data use for decision making. Activities will be prioritized based on identified gaps and weaknesses.
4. Technical assistance for M&E	CDC IAA	12,500	Nationwide	Technical support to the NMCP for ongoing M&E activities including routine system strengthening and NMCP M&E capacity building.
Subtotal: Capacity Building		**$240,000**		
BEHAVIOUR CHANGE COMMUNICATION				
1. BCC for ITN and IPT use as well as for use of case management (RDT and ACT use)	TBD	500,000	PMI Target Areas	BCC will be part of integrated communication package including ITN use and MIP and will include community case management, following national standards and in conjunction with what other donors are doing in their respective target areas. This activity will be implemented in health districts targeted by PMI, using the NMCP communication plan.
Subtotal: M&E		**$ 712,500**		
HEALTH SYSTEMS STRENGTHENING/CAPACITY BUILDING				
1. Training of NMCP staff	TBD	50,000	National and Prefectural Levels	

Proposed Activity	Mechanism	Budget	Geographic Area	Description of Activity
2. Management support for NMCP	NMCP	150,000	National and Prefectural Levels	Support to the NMCP to assist them in team building, logistics and supervision, office management including communication capacity/connectivity, and M&E systems strengthening.
3. Peace Corps Response Volunteer	Peace Corps	20,000	NA	Support to maintain a Response Volunteer in Conakry and to supervise volunteers throughout the country.
4. Entomological Training	TBD	20,000	Central Level	Training for two people in entomology in Bamako.
Subtotal: Capacity Building		**$240,000**		
STAFFING AND ADMINISTRATION				
1.USAID Resident Advisor and Locally Engaged Senior Malaria Advisor	USAID	700,000	Conakry	Support for one USAID PMI Advisor and one USAID locally-engaged senior malaria advisor as well as one CDC PMI Advisor, and all related local costs to sitting in USAID Mission.
2. CDC Resident Advisor	CDC IAA	400,000	Conakry	
Subtotal: In-country Management and Administration		**$1,100,000**		
GRAND TOTAL		**$10,000,000**		