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PRESIDENT'S MALARIA INITIATIVE

Guinea

Malaria Operational Plan FY 2012

November 15, 2011

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ABBREVIATIONS

ADB	African Development Bank
ACT	Artemisinin-based combination therapy
AS-AQ	Artesunate-amodiaquine
ANC	Antenatal care
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
FY	Fiscal Year
Global Fund	The Global Fund to Fight AIDS, Tuberculosis, and Malaria
GMS	Grant Management Solutions
GOG	Government of Guinea
HMIS	<i>Système National d'Information et de Gestion Sanitaires</i> (Health Management Information System)
HKI	Helen Keller International
IDB	Islamic Development Bank
IEC / BCC	Information, education, communication/ Behavior change communication
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
MOH	Ministry of Health
MSF	<i>Médécins Sans Frontiere</i>
MICS	Multiple Indicator Cluster Survey
NGO	Non-Governmental Organization
NMCP	<i>Programme National de Lutte contre le Paludisme</i> (National Malaria Control Program)
PCG	<i>Pharmacie Centrale de Guinée</i>
PMI	President's Malaria Initiative
PSI	Population Services International
RDT	Rapid diagnostic test
SP	Sulfadoxine-pyrimethamine
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USG	United States Government
WHO	World Health Organization

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.

The PMI was launched in June 2005 as a 5-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 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.

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, while Round 10 signing has yet to take place. The Round 6 funds were used to buy nets and drugs, and were combined with additional funding from the World Bank. Currently all public facilities are experiencing stock-outs of artemisinin-based combination therapies (ACTs), long-lasting insecticide treated nets (LLINs), and sulfadoxine-pyrethamine (SP) for distribution to pregnant women.

This FY 2012 Malaria Operational Plan is based on input received from the National Malaria Control Program (NMCP) and partners during a planning visit carried out on July 25-August 5, 2011 by staff from 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. The PMI will support some nationwide needs as well as other targeted activities in 14 prefectures and the five communes of Conakry where Global Fund efforts which are targeting the remaining 19 prefectures of the country. The proposed fiscal year (FY) 2012 PMI budget for Guinea is \$10 million. The following paragraphs describe FY 2012 plans:

Insecticide Treated Bed-nets (ITNs): The NMCP strategy is to support free distribution of LLINs through antenatal care (ANC) and vaccination clinics; free distribution through mass campaigns; and the sale of LLINs in the commercial sector. Guinea distributed 1,975,443 LLINs in 2009 in a nationwide campaign, although these nets were given exclusively to households

with pregnant women and/or children under five. An NMCP national coverage survey conducted in 2010 showed that 77% of households owned at least one ITN; 60% of children under 5 and 47% of pregnant women reported sleeping under an ITN the previous night. With FY 2012 funding, PMI will procure 790,000 LLINs, to be combined with the 800,000 LLINs that will be purchased with FY 2011 funds, for free distribution during the nationwide, universal coverage campaign, which is scheduled to take place in March 2013. In addition, the 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 2011-2016 strategy will be adopted by January 2012, and it will contain guidance on IRS. The limited spraying that does take place in the country is carried out by mining companies, which spray the homes of the villages surrounding their compounds. FY 2011 and FY 2012 funds will be used to help build capacity in entomological monitoring for vectors and insecticide resistance, and to provide training opportunities for NMCP entomologists.

Malaria in Pregnancy: The policy for intermittent preventive treatment during pregnancy (IPTp) recommends that pregnant women receive two doses of SP during antenatal care visits at the 16th week and 36th week respectively (with a minimum of one month in between). According to the 2010 NMCP coverage survey, 47% of women received at least two doses of SP during their last pregnancy in the past two years. FY 2011 funds are being used to procure about 325,000 SP treatments to cover the needs for all public facilities within the PMI target zone of 14 prefectures and five communes of Conakry. To improve the quality of IPTp services in the public sector, PMI will support training of all health workers and midwives in the PMI targeted areas described above. Post-training follow-up supervision visits will also be supported as part of the integrated supervisory schedule of each prefecture. With FY 2012 funding, PMI will conduct refresher training of health workers in IPTp, supervise health workers to improve the quality of services, strengthen logistics management for malaria in pregnancy commodities, support information, education, communication and behavior change communication (IEC/BCC) activities to promote antenatal care (ANC) attendance, procure 375,000 treatments of SP, and educate pregnant women and communities on the risks of malaria in pregnancy (MIP), the need for early and regular ANC visits, and the benefits of IPTp.

Case Management – Diagnosis: FY 2011 funds are being used to support case management activities in the PMI target areas, including training of health workers and community health workers (CHWs) in Rapid Diagnostic Test (RDT) use, purchase of microscopes and reagents, and support for the National Public Health Laboratory (National Laboratory) for enhanced training, supervision, and quality control of microscopy at hospitals and health centers after an initial capacity assessment. It is anticipated that a substantial proportion of health workers and CHWs within the PMI target areas will have been trained in RDT use by the end of 2012. The NMCP estimates that 50% of fever cases will be seen in health facilities and 10% by CHWs. With FY 2012 funding, the PMI will procure one million RDTs to assist with scale up, 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.

Case Management - Treatment: In Guinea, artesunate amodiaquine (AS-AQ) is the recommended treatment for uncomplicated malaria cases. The 2010 NMCP coverage survey showed that only 14% of children under five years of age with fever in the previous two weeks had received artemisinin-based combination therapy (ACT) treatment within 24 hours of fever onset. FY 2011 funds will be used to buy quinine for severe malaria and for an emergency procurement of 1.45 million doses of AS-AQ treatments because health facilities and CHWs were out of stock of most antimalarials in the spring of 2011. It is anticipated that by 2012, current problems with the Global Fund Round 6 grant, consisting of the NMCP not meeting the minimum GF requirements for fund disbursement, will have been resolved, and these funds can once again be used for nationwide ACT procurement. FY 2011 PMI funds will also be used to train health workers and CHWs in PMI target areas in malaria case management, and regular supportive supervision will begin to reinforce appropriate malaria diagnosis and treatment. With FY 2012 funding, PMI will purchase quinine and supplies for treatment of severe malaria for children under five nationwide. PMI will continue to support IEC/BCC for case management, especially at the community level by CHWs. Health workers and CHWs in PMI target areas will receive refresher training in case management of uncomplicated and severe malaria in PMI target areas. Training will be followed by regular supportive supervision that reinforces proper diagnosis and treatment for malaria.

Pharmaceutical Management: PMI will support initial review and assessment of drug regulatory policies, logistic management systems, and pharmaceutical supply chain management and begin laying out plans to reform and improve these key components of the overall pharmaceutical system in Guinea. With FY 2012 funding, PMI will support technical assistance to improve the public pharmaceutical system.

Capacity Building and Health Systems Strengthening: 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 progressively. With FY 2012 funds, PMI will support a malariology course held in Guinea for 15 to 20 participants selected nationwide, in collaboration with WHO, the National Public Health Institute, and other donors.

Integration with other GHI programs: Building on activities that USAID/Guinea is supporting through its bilateral program, PMI is supporting training of health workers and CHWs in all areas of primary health care delivery, including malaria. The PMI financing to improve the pharmaceutical management and the health information management systems, coupled with training and capacity building, will help reinforce the entire health care delivery system.

Behavior Change Communication: The NMCP 2009 communication plan emphasizes appropriate communication strategies and channels to reach various target groups with culturally-sound information on malaria prevention and control. With FY 2011 funds PMI will work with the NMCP to review and strengthen the national strategy and assist with its rollout to all 14 prefectures and five communes of Conakry in the PMI target area. Global Fund resources

will help cover the rest of the country to insure that clear and consistent messages are communicated and that uniform indicators and targets are used to monitor progress and assess the impact of IEC/BCC activities. In FY 2012, BCC will be part of an integrated communication package including ITN use and Malaria in Pregnancy (MIP) and will include community case management. This activity will be implemented in health districts targeted by PMI, using the NMCP communication plan.

Monitoring and Evaluation: FY 2011 funds will help support inclusion of a malaria module in the 2012 DHS, which is slated to take place between April and July 2012. The 2012 DHS will generate the first national estimates of parasitemia in Guinea. In addition to national estimates on coverage of key malaria interventions, DHS data will also provide under-five mortality estimates as a baseline for evaluating malaria control impact after 2012. FY 2011 funds will also be used for M&E training for regional and district officers, in particular the health management information system (HMIS) officers, with a focus on routine data collection and use. With FY 2012 funding, PMI will support a health facility survey and will continue to provide M&E training at regional and district levels. PMI will also provide technical assistance for both M&E and a study for therapeutic efficacy of antimalarial drugs.

INTRODUCTION

GLOBAL HEALTH INITIATIVE AND THE PRESIDENT'S MALARIA INITIATIVE

Malaria prevention and control is a major objective of United States foreign assistance. In May 2009, President Barack Obama announced the GHI, a comprehensive effort to reduce the burden of disease and promote healthy communities and families around the world. Through the GHI, the United States will help partner countries improve health outcomes, with a particular focus on improving the health of women, newborns, and children. The GHI is a global commitment to invest in healthy and productive lives, building upon, and expanding, the USG's successes in addressing specific diseases and issues.

The GHI aims to maximize the impact the United States achieves for every health dollar it invests, in a sustainable way. The GHI's business model is based on: implementing a woman- and girl-centered approach; increasing impact and efficiency through strategic coordination and programmatic integration; strengthening and leveraging key partnerships, multilateral organizations, and private contributions; encouraging country ownership and investing in country-led plans and health systems; improving metrics, M&E; and promoting research and innovation. The GHI will build on the USG's accomplishments in global health, accelerating progress in health delivery and investing in a more lasting and shared approach through the strengthening of health systems.

The PMI is a core component of the GHI, along with HIV/AIDS, and tuberculosis. The PMI was launched in June 2006 as a 5-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 part of the GHI, the goal of the 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.

Since Guinea only became a PMI focus country in 2011, no large-scale implementation of activities under PMI has taken place as yet; however, plans for a “jump start” event that will involve the handover of an emergency supply of ACTs to alleviate a nationwide stock-out are underway.

Currently in Guinea, only Global Fund Round 6 resources are available for addressing malaria prevention and treatment needs, while the signing of Round 10 has yet to take place. Round 6 funds have been used to buy nets and antimalarial drugs and have been combined with World Bank funding, but are still not sufficient to cover all needs. With support from PMI, Guinea hopes to cover much of the country's remaining needs in commodities, technical assistance, and capacity building; but additional resources will be required for the country to achieve universal LLIN coverage and to start and scale up IRS activities in areas beyond where private mining companies currently operate.

This FY 2012 Malaria Operational Plan presents a detailed implementation plan for the second 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 2011-2016 National Malaria Control Strategy and Plan has yet to be developed, the activities proposed by PMI fit in well with NMCP and partners' plans. All proposed activities were reviewed and endorsed by partners, including the 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 2012 activities.

MALARIA SITUATION IN GUINEA

General health and development indicators

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 bordering Sierra Leone, Côte D'Ivoire, and Liberia. Politically, Guinea has eight administrative regions, which are further divided into 33 prefectures, in addition to the capital city of Conakry, which is divided into five communes, for a total of 38 smaller administrative regions. Guinea's population is estimated to be 10.6 million people, of which 43% are under 15 years of age.¹ Nearly half (49%) of Guinea's population lives below the poverty line of \$196 USD per person per year, and poverty has deepened in Guinea in the last decade.² Guinea has very poor health and development indicators, ranking 144 out of 169 countries on the Human Development Index in 2010.³ Infant and under-five mortality rates are 88 and 142 per 1,000 live births, respectively.⁴ Antenatal care coverage with at least one visit is relatively high at 83%, although maternal mortality is also very high, with a 2008 maternal mortality ratio of 680, according to the United Nations.⁵

¹ CIA World Fact Book. <https://www.cia.gov/library/publications/the-world-factbook/geos/gv.html>

² International Monetary Fund. Guinea: Poverty Reduction Strategy Paper: <http://www.imf.org/external/pubs/ft/scr/2008/cr0807.pdf>

³ UNDP 2010 Human Development Index. Available at: <http://hdr.undp.org/en/statistics/> Accessed August 9, 2011.

⁴ UNICEF. The State of the World's Children 2011. Available at: <http://www.unicef.org/sowc2011/statistics.php>

⁵ UNICEF. The State of the World's Children 2011. Available at: <http://www.unicef.org/sowc2011/statistics.php>



Map of Guinea showing the current eight administrative regions

Health system in Guinea

Guinea's health system follows a pyramidal structure with approximately 850 health posts at the bottom, serving several villages each; about 400 health centers at the sub-prefecture level, which provide preventive and curative care and supervise the health posts; 26 prefecture hospitals; 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 midwives and doctors.

Access to care is a major problem in Guinea, and the MOH estimates that less than 40% 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 difficult-to-reach areas. Although a comprehensive policy on community health care has not yet been elaborated in Guinea, nationwide, more than 3,000 CHWs have been trained and provide health education, promotion, and basic curative care to surrounding communities. CHWs have been trained to diagnose malaria and provide ACTs to patients with uncomplicated malaria. Guinea's MOH prioritizes integration of priority national health programs, including malaria, HIV/AIDS, neglected tropical diseases, nutrition, reproductive health and family planning, safe delivery, and epidemic surveillance.

Malaria Situation

Guinea has year-round malaria transmission with peak transmission from July through October in most areas (NMCP Strategy 2006–2010). 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.⁶ National statistics in Guinea show that among children under five years of age, malaria accounts for 31% of consultations, 25% of hospitalizations, and 14% of hospital deaths (Malaria M&E Strategy). This estimate does not include malaria cases seen in the community or in private facilities. In addition, most malaria cases reported in national statistics are clinically diagnosed, and therefore may not accurately reflect the true malaria burden. A recent pilot study in two regions found that of 429 clinically diagnosed cases of malaria in hospitals, health centers, and health posts, only 26% actually had malaria according to microscopy (unpublished data, National Public Health Institute and Medical Research Council in the Gambia).

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 being hyperendemic, holoendemic, mesoendemic, and hypoenidemic, 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* ss, *An. arabiensis* and *An. melas* (on the coast) and members of the *Anopheles funestus* complex. Very little is known of the exact vector composition or insecticide resistance levels.

NATIONAL MALARIA CONTROL PLAN AND STRATEGY

The 2006-2011 National Malaria Control Strategic Plan was aimed at reaching Abuja and Roll Back Malaria targets; scaling up key, malaria prevention and treatment interventions. The goal of the strategic plan is to reduce mortality and morbidity due to malaria by 50% by 2010. More 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; and
- Protect 80% of pregnant women against malaria through providing IPTp with sulfadoxine-pyrimethamine (SP).

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

- Improved malaria program management
- Improved Roll Back Malaria partnerships
- Development of a communication plan, including behavior change communication, advocacy, and social mobilization
- Strengthened monitoring and performance evaluation

⁶ Mamady, K. Hu, G. 2011 BMC Public Health. A step forward for understanding the morbidity burden in Guinea: a national descriptive study. 11:436.

- Strengthened operational research

The NMCP plans to conduct an evaluation in 2011 with the aim of assessing progress achieved under that 2006-2010 National Malaria Strategic Plan and intends to design a new National Strategic Plan by the first quarter of 2012. Development of this Plan has been impeded by the political turmoil the country has faced during the past three years. Roll Back Malaria has agreed to cover part of the necessary funding to revise the strategic plan, while WHO is expected to provide technical support.

CURRENT STATUS OF MALARIA INDICATORS

According to the 2005 Demographic and Health Survey (DHS), only 27% of households owned a bednet, and 4% of households owned an insecticide-treated net (ITN). Only 1% of children and pregnant women slept under an ITN the previous night. Intermittent preventive treatment of pregnant women coverage was very low with only 4% of women receiving any SP and 4% receiving at least two doses 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.

Guinea has made considerable progress in coverage of key malaria prevention and control interventions in recent years after receiving funds from Round 2 and Round 6 Global Fund grants. National coverage surveys conducted with Global Fund financing showed substantial improvement from 2005 to 2009 in IPTp coverage, which rose from 4% to 39% of women receiving at least two doses of SP during their last pregnancy. The 2010 survey also showed very large increases in ITN ownership and use, after a nationwide bednet distribution campaign in 2009 with 77% of households owning an ITN, and 60% of children under five and 47% of pregnant women sleeping under an ITN the previous night.

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

Malaria Indicator	DHS 2005	MICS 2007
Percent of households with at least one ITN	3.5%	12.5%
Percent of children less than five years old who slept under an ITN the previous night	1.4%	6.7%
Percent of pregnant women who slept under an ITN the previous night	1.4%	5.1%
Percent of women who received 2+ doses IPTp during last pregnancy in last 2 years	3.6%	N/A
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	N/A*	N/A**

* ACTs were not the first-line treatment in 2005.

** MICS report only includes data on children receiving SP or chloroquine within 24 hours of fever onset.

¥ These are Global Fund-financed national coverage surveys (n= 1,433 in 2009 and n= 1,662 households in 2010).

MAJOR PARTNERS IN MALARIA CONTROL

The **World Health Organization (WHO)** provides technical support to the NMCP, including the development of policies and guidelines for malaria control. In the past, WHO has supported training of the NMCP staff and provided computer equipment for the management of the program. On a few occasions, WHO has provided malaria drugs to fill the gap, mainly for the treatment of severe malaria.

The World Bank supported provision of bed nets through various projects including the Village Communities Support Project and the National Health Development support Project. The World Bank has also provided ACT drugs, LLINs, and RDTs in the 18 poorest health districts under the National Health Development Project.

The Islamic Development Bank (IDB) supported health worker training on malaria case management and provided LLINs for the 2009 mass distribution campaign. The IDB may provide further assistance with RDTs and ACTs through new support that is slated for negotiation in August 2011.

UNICEF supports training of CHWs and the promotion of ITN use through BCC, provision of re-impregnation kits, and LLINs. UNICEF has supported the mass distribution campaign of LLINs in 2009, managing UNITAID's provision of LLINs and support for logistics costs. UNICEF has also provided SP, RDTs and support for supervision in all 38 health districts.

UNITAID supported the first LLIN distribution campaign conducted in 2009. The Government of Guinea (GOG) has also requested UNITAID's support to provide LLINs for the campaign scheduled for early 2013 and is awaiting a response

The Global Fund for AIDS, Tuberculosis and Malaria (Global Fund): Guinea submitted successful applications for Global Fund Round 2 and Round 6 grants. The \$20 million Round 6 funding has been spent on conducting an integrated nationwide distribution campaign of LLINs in 2009 with vitamin A and folic iron provided by other partners for children less than five years of age. Despite the political instability in the country during recent years, which has led to delays in implementing Round 6 Grant planned activities, the Global Fund is considering consolidating the second phase of Round 6 with the newly approved Round 10 grant to support procurement of LLINs for the universal coverage campaign scheduled for early 2013, and ACT drugs for 19 of the 38 prefectures. The Round 6 and Round 10 consolidated grant would provide a total of \$46 million over the next five years. Negotiations between the GOG and the Global Fund are still underway for the consolidation.

The **African Development Bank (ADB)** provided malaria prevention commodities including ITN re-impregnation kits and ACTs (artemunate-amodiaquine). The ADB has also supported training of health workers at health facility level as well as at community level.

USAID: Guinea has not received malaria funding but has provided support for NMCP staff to attend conferences or seminars and has supported the development of performance standards for health workers and community health workers on malaria in pregnancy as a discrete activity under the *Faisons Ensemble* integrated Project.

Japan International Cooperation Agency: Has provided vehicles and other means of transportation to support the health system. They have also procured bed nets, insecticide for spray, and fumigation equipment.

GTZ supports training and supervision of health workers as well as communication equipment to promote use of bed nets.

International Non-Governmental Organizations

Many international non-governmental organizations (NGOs) support malaria prevention and control in Guinea. Among the most visible are:

Médécins Sans Frontières Switzerland (MSF) was the first partner to introduce ACTs and RDTs in Guinea in 2007 for uncomplicated malaria case management in the Dabola Prefecture (High Guinea), after the drug policy changed in 2005.

Population Services International (PSI) was established in Guinea more than ten years ago. PSI promotes social marketing of malaria commodities, mainly LLINs in Boke and N’Zerekore Districts. Besides working as a sub-grantee for *Faisons Ensemble*, PSI was instrumental in implementing the 2009 mass bed net distribution campaign. PSI is also a Sub-Recipient of the Global Fund Round 10 Grant currently under negotiations and will manage bed net procurement and distribution.

Catholic Relief Services (CRS) supported distribution of bed nets and communication activities for malaria prevention and control in 10 health districts. As the Principal Recipient (PR) for the Round 10 Global Fund grant, CRS will lead a consortium of five NGOs including PSI, Plan Guinea, Child Fund, and Helen Keller International.

Many more NGOs are supporting malaria activities in various regions in Guinea, including Africare, Save the Children, Plan International, and EngenderHealth. Activities range from supporting behavior change communication to bed net distribution to building capacity at the community level for malaria prevention.

Also, a few local non-governmental organizations develop malaria prevention activities in Guinea. Aguilpa, Agfrep, and Asacud are the most engaged in malaria prevention. They have received a one-time mini-grant from the NMCP to conduct social mobilization activities. Sidalerte, an HIV/AIDS-focused NGO, is also active in malaria prevention, in partnership with Aguilpa and Agfrep, mainly for the promotion of malaria prevention measures at the community level.

Other regional initiatives include the “Initiative Health for Peace” including the Gambia, Guinea Bissau, Guinea and Senegal. This organization supports malaria prevention in prefectures along the Senegal River. Also, the World Bank supports ITN distribution as a component of the regional Organization for Senegal River Management Project, involving Senegal, Mauritania, Guinea and Mali.

GOAL AND TARGETS OF THE PRESIDENT’S MALARIA INITIATIVE

The goal of the PMI in new countries added to the PMI in FY 2010 and later is to reduce malaria-associated mortality by 50% when compared to 2010 levels. 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 houses in geographic areas targeted for IRS will have been sprayed;
- 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 government health facilities have ACTs available for treatment of uncomplicated malaria; and
- 85% of children under five with suspected malaria will have received treatment with ACTs within 24 hours of onset of their symptoms.

EXPECTED RESULTS – YEAR TWO

Prevention:

- Approximately 790,000 LLINs will be procured and, along with the 800,000 LLINs purchased with the FY 2011 funds, will be distributed through the universal coverage campaign scheduled for March 2013 to areas not targeted by the Global Fund Round 10.
- IPTp with SP will be available and implemented in all health facilities in the 14 prefectures and five communes of Conakry targeted by PMI. This activity is expected to increase the proportion of pregnant women receiving IPTp2 to at least 50% nationwide since SP is being made available by the Global Fund in the rest of the country.

Diagnosis/Treatment:

- Approximately one million RDTs will be procured and distributed to expand access to malaria diagnosis in the 14 prefectures and five communes of Conakry targeted by PMI. Although this will cover about one-third of the projected gap, RDT training and roll out will begin in 2012, therefore uptake may be slow in 2013 as health workers and facilities work to adopt national policies.
- Approximately 40,000 treatment kits for severe malaria will have been procured and distributed to health facilities nationwide.
- Approximately 2,000 health workers and community volunteers in the 14 prefectures and five communes of Conakry targeted by PMI will have been trained in case management including early care-seeking behavior, malaria diagnosis, prevention of malaria in pregnancy, and data management.

INTERVENTIONS – PREVENTION

Insecticide-Treated Nets (ITNs)

Background

The 2006-2010 National Malaria Control Strategy targets pregnant women and children under five for ITNs; but in 2007 the policy was amended to provide LLINs free of charge. Although yearly increases were noted in coverage indicators, they remained low through 2008 with only 12% children less than five year of age and 25% of pregnant women sleeping under LLIN the night before the survey.

After adoption of the 2006-2010 strategy, a consortium of private and civil partners was established to bring the malaria control interventions to scale nationally under the leadership of the Ministry of Health and Public Hygiene and the Ministry of Decentralization and Local Development. In June of 2009, this consortium, including UNICEF, WHO, CRS, Organization for Senegal River Management, *Faisons Ensembles*/USAID, *Médécins Sans Frontières* (MSF), Helen Keller International (HKI), PLAN Guinea, Orange, Rotary, and Shell, worked with the Ministry of Health and Public Hygiene to prepare a strategic plan for the distribution of LLINs provided by Global Fund Rounds 2 and 6, UNITAID, and World Bank. The GOG has adopted a policy to achieve universal coverage of bed nets with one bed net for every 1.8 person. Two LLIN distribution campaigns were carried out in late 2009. One took place in the five communes of Conakry where LLINs were distributed to cover all sleeping spaces in October 2009. In November, in the remainder of the country (33 prefectures), an integrated campaign (with measles vaccine, vitamin A and mebendazole) targeting children under five was conducted. Operational costs for the campaign were covered by UNICEF, WHO, PLAN Guinea, PSI, Organization for Senegal River Management, and CRS. Remaining stocks were deposited at district health offices (DPS) and were distributed free to pregnant women during their first ANC visit. After this campaign, the number of households with at least one LLIN had increased to 62% (NMCP Coverage Survey 2010 carried out in May 2010). Children under five and pregnant women sleeping under a LLIN increased to 60% and 47% respectively.

Currently, the country is experiencing LLIN stock-outs at health facilities, due to lack of funding. Where they are in stock, LLINs are given to pregnant women during their ANC visits. 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 due to the political unrest. The estimated gap for routine distribution of LLINs in 2011 was over 700,000 LLINs.

Although the country has not yet developed its 2011-2015 Strategy, the NMCP is planning for a universal coverage 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 Global Fund Round 10 will provide 3.2 million nets. The NMCP is soliciting other partners including IDB, UNICEF (UNITAID), and World Bank to assist in filling the gap of 3 million nets to cover the remainder of the country not targeted by the Round 10 grant. The LLIN need for the 2013 universal coverage campaign is summarized in the gap analysis table below.

Activities in last 12 months

At the time this MOP was approved, PMI activities had not yet been undertaken. However, with FY 2011 funds, PMI will procure 800,000 LLINs for use in the 2012/2013 national campaign. This includes the costs of delivery down to the prefectural level; nets will not be procured until campaign dates are set to avoid stocking charges in country. PMI will coordinate discussions between NMCP and partners staff to ensure adequate support for the planning, coordination, implementation, and evaluation of the national campaign.

Support for IEC/BCC for LLIN use will be part of the integrated communication package including malaria in pregnancy and case management. It will follow national standards and will be carried out in conjunction with similar activities other donors are doing in their respective target areas.

Population	10,741,101	11,074,076	11,417,373	Cumulative LLIN need reflects the ongoing LLIN need at an annual growth rate of 1.031% using a calculation of 1LLIN:1.8people and assuming no LLINs have been procured/distributed.
Cumulative LLIN need <i>(Does not factor in procurements)</i>	5,967,278	6,152,264	6,342,985	
Global Fund Target Area: 19 prefectures				
Population	5,580,122	5,753,107	5,931,454	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 1LLIN:1.8people.
Cumulative LLIN need <i>(Does not factor in procurements)</i>	3,100,067	3,196,170	3,295,252	
Absolute LLIN need <i>(Factoring in procurements in each year)</i>	3,100,067	3,196,170 <i>(3,100,067 gap + 96,103 add'l LLINs needed)</i>	183,030 <i>(83,948 gap + 99,082 add'l LLINs needed)</i>	
LLINs procured by GF R6 & R10	0	3,112,222	112,160	LLINs will be procured in 2012 and 2013 but will be distributed during the universal coverage campaign scheduled for March 2013.
GAP	3,100,067	83,948	70,870	
PMI Target Area: 14 prefectures and 5 communes of Conakry				
Population	5,160,979	5,320,969	5,485,919	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 1LLIN:1.8people
Cumulative LLIN need <i>(Does not factor in procurements)</i>	2,867,211	2,956,094	3,047,733	
Absolute LLIN need <i>(Factors in procurements in each year)</i>	2,867,211	2,156,094 <i>(2,067,211 gap + 88,883 add'l LLINs needed)</i>	1,457,733 <i>(1,366,094 gap + 91,639 add'l LLINs needed)</i>	
LLINs procured by PMI	800,000	790,000	0	LLINs will be procured with FY2011 and FY2012 funds but will be distributed during the universal coverage campaign scheduled for March 2013; additional LLINs may be programmed for routine distribution in 2013
GAP	2,067,211	1,366,094	1,457,733	
				47.8% gap remains for the universal coverage

				campaign in the PMI target area (PMI providing 1,590,000 of the 3,047,733 total LLINs needed)
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* Population figures and LLIN needs are taken from a gap analysis conducted by the MMCP in preparation for the PMI MOP team's visit (*Elements de Reponses pour la Planification de l'initiative President Americain de Lutte Contre le Paludisme [PMI] en Guinee 2011, 27 juillet 2011*).

Proposed activities with FY 2012 funding: (\$5,816,500)

1. *Procurement and delivery of LLINs*: Procure and deliver 790,000 LLINs to assist in the 2013 national universal coverage campaign. This funding will include the cost of the nets and delivery to the prefectures in the PMI target areas. (\$4,226,500);
2. *Distribution of LLINs*: Distribute 1,590,000 LLINs during the 2013 campaign. This funding will cover the cost of transporting the 1,590,000 LLINs purchased with FY 2011-12 funds to distribution sites, planning, training, supervision, and social mobilization/communication during the 2013 campaign. (\$1,590,000); and
3. *IEC/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 IEC/BCC see IEC/BCC section).

Indoor Residual Spraying (IRS)

Background

Indoor residual spraying is described in the 2006-2011 National Strategy as an intervention that is considered too costly for the country to undertake with existing funding. Nevertheless, the 2010 malaria coverage survey indicated that 8% of homes surveyed had been sprayed in the last 12 months. Conakry Region had the highest percentage of houses sprayed (19%). The other regions with more than 2% IRS coverage include Boke, Kankan, and Faranah, all areas with extensive mining. The mining companies, Rio Tinto, BHP Billiton and Vale have dedicated funds for malaria control interventions including IRS. BHP Billiton also supported insecticide susceptibility monitoring in the areas surrounding their mines.

The NMCP has expressed a desire to begin IRS operations in the country. Given the critical needs for LLINs and ACTs, PMI will not support IRS activities in FY 2012 but will support entomological surveys in a district (to be determined by NMCP) in preparation for IRS in FY 2013. In addition, PMI will continue to support insecticide resistance assays in sentinel sites begun with FY 2011 funds in each of the four ecological zones of Guinea.

Progress during the last 12 months:

Several entomologists are employed by the MOH: four at the NMCP, two at the National Public Health Laboratory and one at the center for research in Maferinyah. Many have been involved with planning of bed net campaigns and in re-impregnation of nets. Entomological monitoring capacity is very limited due to a lack of resources (e.g., no vehicles, trapping equipment, or

insectary). At the time this MOP was approved, PMI activities had not yet been undertaken. However, with FY 2011 PMI funds, MOH entomology staff will benefit from a one or two-week training course on entomological surveillance and insecticide resistance. The training will be planned in the coming year in consultation with the NMCP and appropriate partners. In addition, mosquito surveys and insecticide susceptibility assays will be carried out in each of the four ecological zones.

Proposed activities with FY 2012 funding: (\$175,000)

1. *Entomologic monitoring and capacity building*: Continued support for surveillance of vector 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).

Intermittent Preventive Treatment of Malaria in Pregnancy (IPTp)

Background

The NMCP adopted 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.

The first SP treatment is delivered at the time of the onset of quickening during the second trimester and is directly observed by the health worker. The second treatment is also given under direct observation 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).

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 in the last two years was only 3%. The 2010 NMCP malaria indicator coverage survey showed a great improvement in IPTp uptake to 47%

Progress during last 12 months:

At the time this MOP was approved, PMI activities had not yet been undertaken. However, looking forward, due to the fact that SP stocks outs are common throughout the country, PMI will 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. PMI expects delivery of about 325,000 SP treatments with FY 2011 funds to cover approximately 70% of the need in the target area. In addition, PMI will support training and supervision of health workers in IPTp and prevention of malaria in pregnancy and community sensitization to the importance of IPTp and preventing malaria in pregnancy.

Proposed activities with FY 2012 funding: (\$10,000)

1. *Procure sulfadoxine-pyrimethamine*: Procure 375,000 treatments of SP to cover needs in the 14 prefectures and five communes of Conakry for 2013 (187,500 estimated pregnancies). (\$10,000);
2. *IEC/BCC for IPTp*: PMI will support IEC/BCC to promote ANC clinic attendance and educate pregnant women and communities about the benefits of IPTp as part of a larger integrated IEC/BCC activity to satisfy needs for case management, LLINs, and IPTp. This activity will include support for community-level approaches, such as training of CHWs, as well as mass media (including local radio stations). Immunization outreach sessions will also be used as opportunities for educating women. (*Costs covered in IEC/BCC section*).
3. *Training for malaria in pregnancy*: PMI will continue to 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 on-the-job training on the treatment algorithm, and coaching. (*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 be part of an integrated approach for supervision at health facilities. (*Costs covered in Case Management Treatment section*).

INTERVENTIONS –CASE MANAGEMENT

Diagnosis

Background

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 2011-2015. No systematic survey of malaria treatment in Guinea exists, but a pilot survey in two regions conducted in collaboration with researchers from Medical Research Council in the Gambia found that at 12 health facilities (2 regional hospitals, 4 urban health centers, 3 rural health centers, and 3 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, a Global Fund-financed health facility survey of hospitals and health centers in 2010 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. According to the Global Fund health facility survey, 34% of health facilities had RDTs. In addition to rolling out RDTs in health facilities, the NMCP would like to roll out RDTs at the community level through CHWs. 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 is providing 312,000 RDTs in the 18 districts its health project covers. No health workers or CHWs in the PMI target areas have been trained in RDT use yet. The table below presents RDT needs for 2012 and 2013, as specified by the NMCP.

	2012	2013
Total RDT needs	8,484,606	9,898,451
Planned RDTs from Global Fund	2,050,219	1,039,341
Planned RDTs from World Bank	312,033	[Unknown]
Gap in RDTs	6,343,386	8,859,110

The calculation of RDT needs is based on the expected number of fever episodes from each age group from the need assessment. Also, factored into the calculation is the average service use rate (38.9%).

Progress during the last 12 months:

At the time this MOP was approved, PMI activities had not yet been undertaken. However, FY 2011 funds will be used to support several activities in PMI target areas, including a diagnostics capacity assessment; training of health workers and CHWs in RDT use; purchase of 10 microscopes, including reagents and other consumables; and support for the National Laboratory to enhance training, supervision, and quality control of microscopy at hospitals and health centers. It is anticipated that a substantial proportion of health workers and CHWs within the PMI target areas will have been trained in RDT use by the end of 2012. The NMCP estimates that 50% of fever cases will be seen in health facilities and 10% by CHWs. PMI will build on the in-country malaria diagnostic expertise to enhance national capacity for quality case management. The rest will mostly go to traditional healers for care.

Proposed activities with FY 2012 funding: (\$1,042,500)

1. *Procurement of RDTs:* The PMI will procure one million RDTs for health workers and CHWs to use for testing suspected malaria cases. It is anticipated that most health workers and CHWs in PMI target areas will have been trained in RDT use with FY 2011 funds, and those not yet trained will receive training using FY 2012 funds (see below).

The one million RDTs will be used both at health facility (health center and health post) and community levels by CHWs. (\$730,000);

2. *Procurement of microscopes and reagents/consumables:* FY 2012 funds will be used to purchase 20 microscopes and necessary reagents/consumables. Together with FY 2011 funds for microscopy, PMI FY 2012 funds will ensure that all regional and district hospitals in the PMI target areas (14 Prefectures in total) have at least one new microscope and reagents, and additional microscopes can be distributed to health centers without functional microscopes. (\$50,000);
3. *Support for quality assurance/quality control activities for microscopy:* In addition to providing support for in-service training for laboratory technologists in microscopy, PMI will work with the NMCP and National Laboratory (which resides within the National Institute of Public Health [INSP]) 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);
4. *Technical assistance for case management:* A CDC epidemiologist will provide technical assistance for improving malaria diagnostics at hospitals and health centers, as well as at the community level where CHWs are being trained in RDT use. (\$12,500);
5. *Training/refresher training in RDT use:* PMI will fund follow-up 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. (See Treatment section, below, for costs);
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. (See Treatment section, below, for costs); and
7. *Technical assistance for microscopy maintenance :* To improve the number of hospitals and health centers with effective microscopy services and enhance the sustainability of its investments, 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).

Treatment

Background

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 IV 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 or three. Since 2009, the Global Fund has financed procurement of ACTs nationally for Guinea. 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.

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, a Global Fund-financed health facility survey in early 2010 of 129 health facilities nationally 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 (*Pharmacie Centrale de Guinée*) have resulted in stock-outs of drugs for many conditions at peripheral levels in 2011 (see more below).

No systematic evaluation of the quality of malaria case management in Guinea exists, but a register review of 129 facilities included in a Global Fund-financed 2010 health facility 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:

At the time this MOP was approved, PMI activities had not yet been undertaken. However, FY 2011 funds will be used to buy quinine⁷ for severe malaria and an emergency procurement of 1,450,000 treatments of AS-AQ for Guinea, whose health facilities and CHWs were out of stock of most antimalarials beginning in spring of 2011. By 2012, problems with the Global Fund Round 6 grant should be resolved, and these funds can once again be used for nationwide ACT procurement. FY 2011 PMI funds will be used to train health workers and CHWs in PMI target areas in malaria case management, and regular supportive supervision will begin to reinforce appropriate malaria diagnosis and treatment. Using FY 2011 funds, an estimated total of 1,200 clinicians (200 at hospitals, 632 at health centers, and 350 at health posts) will receive training in malaria case management, including use of RDTs and treatment of uncomplicated and severe malaria. In addition, approximately 800 CHWs in PMI target areas will receive training in RDT use, treatment of simple malaria, and referral for patients with severe malaria. With technical

⁷ Guinea's current malaria case management policy recommends quinine for the management of severe malaria in adults and children. However, PMI will discuss with NMCP officials the possibility of revising Guinea's malaria case management policy to recommend artesunate for children for severe malaria, since WHO now recommends parenteral artesunate in the treatment of severe malaria in African children.

See: World Health Organization. Guidelines for the treatment of malaria, 2nd edition – Rev. 1. Accessed 9/2/11 from: http://www.who.int/malaria/publications/atoz/mal_treatchild_revised.pdf

support from FY 2011 PMI funds, the MOH will have elaborated a comprehensive and integrated approach to community case management by CHWs, including malaria diagnosis with RDTs and treatment with ACTs.

Proposed activities with FY 2012 funding: (\$1,000,000)

1. *Procurement of quinine for severe malaria:* PMI will procure 40,000 treatments for severe malaria in children, quinine, along with IV fluids, , 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);
2. *IEC/BCC for case management:* FY 2012 funds will be used to fund integrated behavior change communication and education activities for communities to improve behaviors related to malaria prevention and treatment. Activities will support appropriate care-seeking behaviors, particularly at the community level through CHWs. Particular emphasis will be placed on prompt care-seeking for fever and other symptoms of malaria. (See IEC/BCC section, below, for costs).
3. *Clinical training/refresher training in malaria case management:* Health workers at hospitals, health centers, and health posts who have not been trained using FY 2011 funds will receive training in RDT use and malaria case management using FY 2012 funds. CHWs not yet trained in RDT use, treatment of simple malaria and referral for patients with severe malaria will receive initial in-service training on these topics. A comprehensive refresher training schedule will be developed and implemented for health workers and CHWs who have already received initial training. (\$400,000); and
4. *Supervision of health workers and CHWs in malaria case management:* PMI funds will be used for enhanced 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. (\$400,000).

Pharmaceutical Management

Background

The Guinea pharmaceutical system is built around two major components which are the Directorate of Pharmacies and Laboratory and “*Pharmacie Centrale de Guinée*” (PCG). As the main instrument of the health commodities supply chain PCG, or Central Medicines Store, was created in 1992 by the GOG to supply health facilities nationwide. A “parastatal” organization, operating under the administrative oversight of the National Directorate of Pharmacies and Laboratory (DNPL), the PCG is intended to supply all public health facilities at all levels of the health system with quality drugs in a timely manner and in appropriate quantities. The 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 Solution (GMS)⁸ concluded that numerous bottlenecks hinder the performance of PCG, the most critical of 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; and
- Lack of coordination among the three disease programs (HIV, tuberculosis and malaria), which continue to evolve independently and make PCG more of a “rented” place for storing products than a key partner in the pharmaceutical supply chain management.

The GMS also provided key recommendations to address these bottlenecks and make the supply chain and the pharmaceutical system more responsive to the health system’s needs. However, few of the recommendations have been implemented to date. Another evaluation supported by USAID and conducted by *Faisons Ensemble*⁹ in 2009 reviewed all the assessments conducted on PCG during prior years. The evaluation confirmed the GMS findings and made several recommendations, most of which are designed to address the weaknesses of the supply chain management system in order to improve its performance.

PCG is not well equipped to meet the logistical challenges that the supply chain is facing, mainly distributing drugs at health service delivery points. In addition, the GOG does not provide regular financial support to PCG, which contributes to the stock-outs of drugs at the district and health facility levels. Another factor contributing to recurrent drug stock-outs is the lack of accurate and reliable drugs consumption data throughout the health system, making forecasting, procurement, and distribution of malaria commodities, mainly ACT drugs, a random exercise rather than a rational and informed quantification.

Besides PCG, Guinea has 387 private pharmacies nationwide, of which about 70% are located in Conakry. Those pharmacies sell a wide range of antimalarial drugs, ranging from branded drugs

⁸ Grant Management Solution (GMS): Technical assistance to PCG, Sub-Recipient of Global Fund to supply HIV/AIDS, Malaria and Tuberculosis commodities; Final Report; March 2009.

⁹ Report of the “Faisons Ensemble” Evaluation; March 2011, page iv.

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.

The legal and regulatory environment of the pharmaceutical system also needs to be reformed. 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. Guinea has created the School of Medicine and Pharmacy at the University of Conakry that trains pharmacists for the public sector, as well as for the private sector. Currently, no on-the-job training is provided to strengthen the capacity of pharmacists. Also, there is no performance evaluation leading to promotion in public sector pharmacists, which adds to the frustration generated by recurrent stock-outs of essential drugs.

Six faith-based organizations, multilateral and bilateral donors and mining companies also play a part in the pharmaceutical system. The existence of health and hygiene committees, mainly at the commune-level, provides a firm foundation for increased community participation in pharmaceutical system management. At the commune level, the health and hygiene committees are composed of stakeholders coming from surrounding villages, including women and men, who discuss health issues and participate in decision-making. The report of the evaluation of *Faisons Ensemble* Project conducted in March 2011 states: *“the use of earmarked funds, particularly from health accounts, proved to be manageable and produced some notable health benefits as well as governance benefits, including strengthening the capacity of civil society organizations such as COGES and some of the Health Mutuals to monitor the work of health professionals and to be better and more democratically managed internally”*. This offers the potential for strengthening civil society’s participation in strengthening the pharmaceutical system and advocacy to reduce stock-outs.

The PMI will work with other partners to improve supply chain management and the Logistic Management Information System (LMIS). To continue assisting the GOG with implementing the above mentioned recommendations, PMI will use FY 2012 funds to support the GOG’s efforts to continue improving the performance of the pharmaceutical system and create conditions for PCG and other key structures to ensure that malaria commodities are distributed to health facilities in a timely manner to avoid recurrent stock-outs.

Pharmacovigilance and Drugs Quality Control

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 with the PCG to control drug quality is not well coordinated, translating into a lack of collaboration. Among the national laboratory supporting partners is *Fondation Pierre Fabre*; a French foundation specialized in pharmaceutical system management. Their support includes provision of reagents, some laboratory and maintenance equipment, and training. Also, WHO has provided the national laboratory with a minilab to conduct drugs quality control in the field.

Progress during the last 12 months:

At the time this MOP was approved, PMI activities had not yet been undertaken. However, with FY 2011 funds, PMI will support an initial review and assessment of drug regulatory policies, logistics management systems, and pharmaceutical supply chain management, and will work on plans for reform and improvement of these key components of the overall pharmaceutical system in Guinea.

Proposed activities with FY 2012 funding; (\$380,000)

1. *Support for improving logistic management information systems:* Support the strengthening of 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. This activity includes procurement of computers, support for Internet connectivity, and capacity building for quantification at the central level (PCG, DNPL), as well as at the regional, prefectural and district levels. (\$180,000);
2. *Support pharmaceutical systems reform:* Support the reform of regulations governing the supply chain management system, including advocacy for signing a convention between the Government and PCG and improving the governance of PCG (renewal and functioning of the board, information sharing, civil society and private sector's participation, etc.). (\$100,000); and
3. *Support to improve drug regulatory capacity:* Support the 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).

INTEGRATION WITH OTHER GHI PROGRAMS

Facility-Based Integration

Background

USAID/Guinea's current health programs work not only on technical issues related to individual competencies to deliver health services but also on governance issues that relate to service sustainability.

Progress in the last 12 months:

PMI, together with the Global Fund, will support training of health workers and CHWs in all areas of primary health care delivery, including malaria. The PMI support to improving the pharmaceutical management systems, coupled with training and capacity building, will benefit the entire health care delivery system.

Proposed Activities with FY 2012 funding:

Covered under other sections

Community-Based Integration

Background

The MOH has invested heavily in CHWs to expand health care access to communities, especially in difficult-to-reach areas. Nationwide, more than 3,000 CHWs have been trained and provide health education, promotion, and basic curative care to surrounding communities. Guinea's MOH prioritizes integration of priority national health programs, including malaria, HIV/AIDs, neglected tropical diseases, nutrition, reproductive health and family planning, safe delivery, and epidemic surveillance.

The main issue for rolling out community case management has been the shortage of key commodities such as ACTs, RDTs, antibiotics, and ORS. USAID/Guinea has been supporting integrated activities at the community level through NGOs, focusing on governance and IEC/BCC, with the intent of empowering communities to serve themselves in the absence of reliable services in the public sector.

Progress during the last 12 months:

At the time this MOP was approved, PMI activities had not yet been undertaken. However, FY 2011 PMI funds will support a technical advisor to the MOH dedicated to helping public health officials draft a comprehensive and integrated community health worker policy and to standardize community case management guidelines nationally. PMI will also support communities and integrated health by training CHWs in community case management and by providing IEC/BCC materials and activities to communities. For instance, CHWs along with health workers will be trained in RDT use, and once trained will be supplied with RDTs to accompany the supplies of ACTs they will already have to insure that national guidelines are followed.

Proposed Activities with FY 2012 funding:

Covered under other sections

CAPACITY BUILDING AND HEALTH SYSTEMS STRENGTHENING

Background:

The Guinea NMCP is staffed with 11 professionals led by a coordinator and a deputy coordinator and comprises one entomologist, 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.

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 recently engaged in the recruitment of 1,300 health workers, including physicians, nurses, midwives, and laboratory technicians who are currently being 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 five 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.

Guinea possesses several training institutions that can work with the NMCP provide on-the job training as well as refresher training activities. One of them is the National Institute for Public Health (INSP) that 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 Guinea. 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 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.

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.

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 among donors to enable the NMCP to progressively fill service delivery gaps. In FY 2012, 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 involve approximately 15 to 20 health professionals, and will be partly funded with PMI funding. Funding will be provided by other donors supporting malaria control in Guinea.

Progress during the last 12 Months:

At the time this MOP was approved, PMI activities had not yet been undertaken. However, using FY 2011 funds, PMI will train NMCP and prefectural-level staff in health statistics and M&E, providing an opportunity for a larger group of people to be reached and to improve their skills in managing and using data.

Proposed activities with FY 2012 funding: (\$50,000)

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).

COMMUNICATION AND COORDINATION WITH OTHER PARTNERS

Background

Currently, Guinea has no formal or informal coordination mechanism to link malaria partners and create conditions for information sharing.

Roll Back Malaria Partnerships

Unlike many other PMI countries, the Roll Back Malaria Partnership has not met during the past four years. No other coordination mechanism has been put in place to enable technical discussions among key malaria support partners, including the private sector and NGOs, to share information, identify bottlenecks, and discuss solutions. As a result, an important communication gap exists with regards to who does what and where in the country.

The Country Coordinating Mechanism (CCM) for the Global Fund

Despite the political uncertainty the country has faced during the past three years, the Guinea Country Coordinating Mechanism (CCM) has functioned to the best of its capacity under the leadership of the Bishop of Conakry. The CCM encompasses 37 members from various sectors,

including the GOG, civil society organizations, and the private sector. As a result of the regular functioning of the CCM and the quality of leadership it provides to the NMCP, the country has been approved for Global Fund Round 10 Malaria Grant, mobilizing additional resources for malaria control in Guinea.

During the Malaria Operational Planning visit, the PMI team insisted on the need to strengthen donor coordination, reviving the Roll Back Malaria Partnerships with technical support from WHO and under the leadership of the NMCP. Taking advantage of the PMI resources, the MOH officials are considering making malaria coordination a priority, involving the private sector and civil society organizations in an effort to improve communication and information sharing.

Although no resources have been planned under PMI funding to support donor coordination during the first two years, the Guinea PMI team will be encouraged to put emphasis on coordination with the NMCP and other relevant partners. In future years, PMI should consider providing funds to support donor coordination, to create better conditions to achieve results and impact.

BEHAVIOR CHANGE COMMUNICATION

Background:

In its current Strategic Plan, the NMCP has clearly spelled out a comprehensive vision of its integrated communication to prevent and control malaria in Guinea, making communities the major actors of behavior change, advocacy, and social mobilization activities. The evaluation of the 2002-2006 Malaria Strategic Plan revealed the following factors hindering malaria prevention and control among the population:

- Weak knowledge of malaria (clinical signs, severity and transmission mode);
- Weak perception of risk associated with malaria;
- Late referral to health facilities for care seeking; and
- Lack of awareness of the impact of late treatment of fever among children less than five years of age.

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

Many partners including donors, international and local NGOs, and the private sector are supporting IEC/BCC activities, but no formal evaluation of IEC/BCC activities has been conducted by the NMCP. Despite the communication and social mobilization activities implemented at all levels, 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. To boost use of malaria prevention measures and case management services, PMI will support IEC/BCC activities at all levels including at the community level, in its target zones.

Progress during the last 12 months:

At the time this MOP was approved, PMI activities had not yet been undertaken. However, with FY 2011 funds, PMI will work with the NMCP to review and improve the national strategy on communication and to assist with its rollout to all 14 prefectures and five communes of Conakry in the PMI target area. PMI funded BCC activities will be designed in accordance with the revised malaria communication strategy and will be implemented targeting the group most at risk of malaria such as children less than five year of age and pregnant women. BCC interventions will also involve community leaders and women groups who will advocate for behavior change with regards malaria prevention and treatment. The Global Fund resources will help cover the rest of the country to ensure that clear and consistent messages are communicated, as well as uniform indicators and targets used to monitor progress and assess the impact of IEC/BCC activities.

Proposed activities with FY 2012 funding: (\$400,000)

1. *Support IEC/BCC for ITN and IPTp use as well as for case management (RDT and ACT use):* BCC will be part of an integrated communication package including ITN use and IPTp uptake, and will include community case management 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. (\$400,000).

MONITORING AND EVALUATION

Background

Malaria data in Guinea are generated through the routine health information system (HMIS) and special coverage surveys. Management of both routine data and special surveys sits within the *Bureau de Stratégie et Développement* (BSD) [Bureau of Strategy and Development] of the MOH, which has three primary mandates:

1. Planning and evaluation in the health sector;
2. Operational research; and
3. Managing the HMIS (known in Guinea as the SNIGS: *Système national des informations et gestion de santé*).

The HMIS includes routine data on uncomplicated and severe malaria cases, as well as data on IPTp. In 2009, the Global Fund added indicators of diagnostic confirmation (either with RDTs or microscopy) for all malaria cases. Within the HMIS, health center staffs collect and aggregate monthly health information reports from the health posts in their catchment area. The district health team in turn collects health information monthly from all health centers, compiles this, and forwards it on to the regional health team, which then forwards it to the central level.

Hospital statistics are sent directly by hospitals to the central level. Community-level statistics on malaria cases collected by CHWs are not integrated into the HMIS but are collected separately by the districts and sent to the national level. The lack of integration of community-level malaria statistics collected by the CHWs was noted as a problem several years ago, but still has not been remedied.

Until recently, health information was compiled by hand at the health center and district levels and entered into an electronic database at the national level. A 2008 Global Fund-financed audit of the HMIS found numerous problems with the system, including data that were not reliable, not timely, and not well used and disseminated. Information is delayed and a draft report of the 2008 health information statistics was only compiled in May 2011. As a result of the HMIS audit, a new director, who is a statistician/engineer/economist, was recently hired, and he has designed and implemented a new Access database for the HMIS. Ideally, district HMIS officers will directly enter health center data into the new Access database, which will be merged at the central level. Each district has an HMIS officer who was recently trained on Access, but the *Bureau de Statistique et de Développement* (BSD) director feels that they could benefit from further training. The new BSD director also plans to have Guinea's National Bureau of Statistics enter the backlog of annual data (for 2009, 2010, and ultimately 2011) into the Access database so that these reports can be generated more quickly.

Other sources of routine malaria data include the weekly epidemic surveillance report, which is gathered each week from health centers by the district HMIS officers and sent on to the National Prevention Department within the MOH. 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.

The NMCP has an M&E team of three core staff. In 2008, the NMCP developed a malaria M&E plan for 2008–2012. According to the NMCO Director of M&E, quality of routine malaria data is one of the biggest challenges currently for M&E. The NMCP is supposed to conduct twice-yearly supervision of the regional health offices, which in turn supervise the district health offices that collect data from the health centers. However, recent suspension of Global Fund Round 6 funds has halted the NMCP's M&E supervision. The NMCP M&E group does not appear to have a systematic review process for analyzing and using malaria data on regular basis.

Along with routine service data, national surveys include malaria indicators. In addition to the 2005 DHS and the 2007 MICS, malaria intervention coverage surveys were conducted in 2009 and 2010 with support from the Global Fund. However, no regional- or national-level parasitemia or anemia estimates exist yet in Guinea.

Progress during the past 12 months:

At the time this MOP was approved, PMI activities had not yet been undertaken. However, FY 2011 funds will help support inclusion of a malaria module in the 2012 DHS, which is expected to take place between April and July, 2012. The 2012 DHS will generate the first national estimates of parasitemia in Guinea. In addition to national estimates on coverage of key malaria

interventions, DHS data will also provide under-five mortality estimates as a baseline for evaluating malaria control impact after 2012.

FY 2011 funds will also be used for M&E training for regional and district officers, in particular the HMIS officers, with a focus on routine data collection and use. Along with training in M&E and statistics for the NMCP, as well as technical assistance for M&E from CDC, it is anticipated that the quality of routine data collection on malaria cases will begin to improve and will more accurately capture suspected and confirmed malaria cases at all levels of the health system.

Proposed activities with FY 2012 funding: (\$225,000)

1. *Health facility survey:* PMI will fund a health facility survey with FY 2012 funds to assess diagnostic capacity and drug stocks at hospitals and health centers, parasitemia levels among patients using the health care system, and case management practices of health workers (including use of diagnostic tests, correct treatment of malaria, under diagnosis, and overtreatment). The health facility survey will include a representative sample of health facilities nationwide that can generate a national picture of malaria diagnosis. The timing of the survey will be closely coordinated with the NMCP and MOH to ensure it occurs after national scale up of RDTs and completion of health worker RDT training. (\$200,000);
2. *Technical assistance for M&E:* FY 2012 funds will pay for an M&E expert to provide technical support to the NMCP for its new M&E strategy. The current NMCP M&E strategy is for 2008–2012, and technical assistance from CDC will assist the NMCP with its second-generation M&E strategy. (\$12,500);
3. *Training in M&E:* Training in M&E will continue for those district and regional health officers who have not yet received training using FY 2011 funds. Training will target the regional-level and district-level malaria coordinators and statisticians. Training will emphasize data collection, indicator creation, and data use for decision-making. The training program will involve NMCP M&E staff to develop standardized indicators and processes for monitoring routine malaria statistics, on a regular basis. (*See Case Management Treatment section, above, for costs*); and;
4. *Technical assistance for therapeutic efficacy study on ACTs:* Global Fund Round 6 money is planned to fund five therapeutic efficacy studies in collaboration with the National Institute of Public Health, the School of Medicine, and the National Rural Health Research Institute in Guinea. To ensure that the results of these drug efficacy studies can be used to fulfill PMI's requirement to evaluate ACT resistance every other year, PMI will fund technical assistance from a CDC expert on drug efficacy studies. (\$12,500).

STAFFING AND ADMINISTRATION

Two health professionals will be recruited as Resident Advisors to oversee PMI activities in Guinea, one representing CDC and one representing USAID. In addition, one Foreign Service

National will be hired to support the PMI team. All PMI staff members will be 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 will be interviewed and evaluated jointly by USAID and CDC.

The two PMI professional staff 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 s/he designates, the CDC 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 2012 funding: (\$901,000)

1. *USAID technical staff*: Support one resident advisor and Foreign Service National to support malaria activities. (\$501,000); and
2. *CDC technical staff*: Support one resident advisor. (\$400,000).

Table I
President's Malaria Initiative – Guinea
Year four (FY 2012) 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	5,216,500
TBD	PMI Target Areas	LLIN distribution, IEC/BCC, and Supervision	2,390,000
	Nationwide	TA for microscopy repair, Training of NMCP staff, and Health Facility Survey	300,000
TBD	PMI Target Areas	Training of health workers and CHWs	400,000
Systems for Improved Access to Pharmaceuticals and Services	National Level	Capacity development in logistics management, pharmaceutical systems reform, and improving drug regulatory capacity	380,000
Improving Malaria Diagnostics	PMI Target Areas	Quality assurance and control for microscopy, and National Reference Lab capacity building	200,000
TBD	Nationwide	Vector surveillance, insecticide resistance, and capacity building for entomologists	150,000
Centers for Disease Control Interagency Agreement	National	Technical Assistance for Entomology, Diagnostics, M&E, and Efficacy Study	62,500
	Conakry	One Resident Advisor	400,000
USAID/Guinea	Conakry	One Resident Advisor and One Locally-engaged Staff	501,000
TOTAL			10,000,000

TABLE 2
President's Malaria Initiative – Guinea
Planned Obligations for FY 2012 (\$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	4,226,500	PMI Target Areas	Procure and deliver 790,000 LLINs to assist in the 2013 national universal coverage campaign. This funding will include the cost of the nets and delivery to the prefectures in the PMI target areas.
2. Distribution of LLINs	TBD	1,590,000	PMI Target Areas	Distribute 1,590,000 LLINs during the 2013 campaign. This funding will cover the cost of transporting the 1,590,000 LLINs purchased with FY2011-12 funds to distribution sites, planning, training, supervision, and social mobilization/communication during the 2013 campaign.
3. IEC/BCC for LLIN use	TBD	(Costs covered in IEC/BCC section)	PMI Target Areas	IEC/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		\$5,816,500		
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

Proposed Activity	Mechanism	Budget	Geographic Area	Description of Activity
				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		
Malaria in Pregnancy				
1. Procure treatments of sulfadoxine-pyrimethamine (SP)	USAID/Deliver Project	10,000	PMI Target Areas	Procure 375,000 treatments of SP to cover all of the needs in the 19 PMI-supported prefectures for 2013 (187,500 estimated pregnancies). Treatment will be available in the public sectors only.
2. IEC/BCC for IPTp	TBD	(Costs covered in IEC/BCC section)	PMI Target Areas	Support IEC/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 IEC/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.

Proposed Activity	Mechanism	Budget	Geographic Area	Description of Activity
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		\$10,000		
CASE MANAGEMENT				
Diagnosis				
1. Procure rapid diagnostics tests (RDTs)	USAID/Deliver Project	730,000	PMI Target Areas	Procure 1,000,000 RDTs to begin scaling up RDT use after training of health workers and community health volunteers using FY2011 funds.
2. Procure microscopes and consumables	USAID/Deliver Project	50,000	PMI Target Areas	Procure 20 microscopes, reagents, slides and repair materials for hospitals.
3. Quality assurance/quality control activities for microscopy	IMaD	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.
4. TA for diagnostics	CDC IAA	12,500	Nationwide	One TA visit from CDC to support improved diagnostic capacity.
5. Training/refresher training in RDT use	TBD	(Costs covered in Case Management/Treatment	PMI Target Areas	Refresher training in PMI target areas on malaria case management, including correct RDT use at all

Proposed Activity	Mechanism	Budget	Geographic Area	Description of Activity
		Section)		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 RDT use	TBD	(Costs covered in Case Management/Treatment Section)	PMI Target Areas	Integrated supervision of health workers and CHWs focusing on malaria diagnostics, including correct 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: Diagnostics		\$1,042,500		
Treatment				
1. 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.
2. IEC/BCC for case management	TBD	(Costs covered in IEC/BCC section)	PMI Target Areas	FY2012 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 IEC/BCC supported in 2012 will target prevention activities, including use of LLINs and IPTp. IEC/BCC activities will also support appropriate care seeking behaviors, particularly at the community level through use of CHWs. Particular

Proposed Activity	Mechanism	Budget	Geographic Area	Description of Activity
				emphasis will be placed on prompt care-seeking for fever and other symptoms of malaria.
3. Clinical training/refresher training in malaria case management	TBD	400,000	PMI Target Areas	Training in RDT use and malaria case management for health workers at hospitals, health centers, and health posts who have not been trained using FY2011 funds. Training of CHWs not yet trained in RDT use, in treatment of uncomplicated malaria and referral for patients with severe malaria. Develop and implement a comprehensive refresher training schedule for health workers and CHWs who have already received initial training.
4. Supervision of health workers and CHWs in malaria case management	TBD	400,000	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 (<i>Département Préfectoral de Santé</i>) and regional health team staff (<i>Département Régional de Santé</i>) 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.
Subtotal: Treatment		\$1,000,000		
Pharmaceutical Management				
1. Logistic management information systems	Systems for Improved Access to Pharmaceuticals and Services	180,000	National and Regional Level	Strengthen of 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

Proposed Activity	Mechanism	Budget	Geographic Area	Description of Activity
				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	100,000	National Level	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	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		\$380,000		
CAPACITY BUILDING				
1. Support malariology course in Guinea	TBD	50,000	National and Prefectural Levels	Support a malariology course to take place in Guinea for 15 to 20 participants, in collaboration with WHO, the National Public Health Institute and other donors supporting malaria in the Guinea.
Subtotal: Capacity Building		\$50,000		
BEHAVIOUR CHANGE COMMUNICATION				

Proposed Activity	Mechanism	Budget	Geographic Area	Description of Activity
1. IEC/BCC for ITN and IPT use as well as for use of case management (RDT and ACT use)	TBD	400,000	PMI Target Areas	IEC/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: BCC		\$ 400,000		
MONITORING AND EVALUATION				
1. Health facility survey	TBD	200,000	Nationwide	Health facility survey to assess diagnostic capacity and drug stocks at hospitals and health systems, parasitemia levels among patients using the health care system, and case management practices of health workers (including use of diagnostic tests, correct treatment of malaria, under diagnosis, and overtreatment). This will be done in collaboration with <i>Institut National de Santé Publique</i> .
2. Technical assistance for M&E	CDC IAA	12,500	Nationwide	Technical support to the NMCP for its new M&E strategy. The current NMCP M&E strategy is for 2008–2012, and technical assistance from CDC will assist the NMCP with its second-generation M&E strategy.
3. Training in M&E	TBD	(Costs covered in Case Management/Treatment Section)	Nationwide	Training in M&E district and regional health officers who have not yet received training using FY 2011 funds. Training will target the regional-level and district-level malaria coordinators and statisticians
4. Technical assistance for therapeutic efficacy study on ACTs	CDC IAA	12,500	Global Fund Target Areas	Technical assistance for Global Fund-supported drug efficacy studies.
Subtotal: M&E		\$ 225,000		

Proposed Activity	Mechanism	Budget	Geographic Area	Description of Activity
In-country Management and Administration				
1. USAID Resident Advisor and Locally Engaged Senior Malaria Advisor	USAID	501,000	Conakry	Support for one USAID PMI Advisor and one USAID locally-engaged senior malaria advisor as well as one CDC PMI Advisor.
2. CDC Resident Advisor	CDC IAA	400,000	Conakry	
Subtotal: In-country Management and Administration		\$901,000		
GRAND TOTAL		\$10,000,000		