This Malaria Operational Plan has been endorsed by the U.S. Global Malaria Coordinator and reflects collaborative discussions with the national malaria control programs and partners in country. If any further changes are made to this plan, it will be reflected in a revised posting.

PRESIDENT'S MALARIA INITIATIVE

Malaria Operational Plan

Fiscal Year 2012 (Year Two)

DEMOCRATIC REPUBLIC OF CONGO

NOVEMBER 04, 2011

TABLE OF CONTENT

ABBREVIATIONS AND ACRONYMS

ACT	Artemisinin-based combination therapy
AL	Artemether-lumefantrine
ANC	Antenatal clinic
AS-AQ	Artesunate-amodiaquine
BCC	Behavior Change and Communication
CCM	Country Coordinating Mechanism (of the Global Fund)
CDC	Centers for Disease Control and Prevention
CDR	Regional Distribution Centers
CIDA	Canadian International Development Agency
CNOS	National Council of Health Non-Governmental Organizations
DfID	Department for International Development (British)
DHS	Demographic and Health Survey
DPM	Department of Pharmacies, Medicines, and Traditional Medicine
DRC	Democratic Republic of Congo
FY	Fiscal Year
Global Fund	Global Fund to Fight AIDS, Tuberculosis, and Malaria
GDRC	Government of the Democratic Republic of Congo
GHI	Global Health Initiative
IEC	Information, education, communication
IMCI	Integrated management of childhood illnesses
INRB	*Institut National de Recherches Biomédicales* (National Institute for Biomedical Research)
IPTp	Intermittent preventive treatment for pregnant women
IRS	Indoor residual spraying
ITN	Insecticide-treated net
KOICA	Korea International Cooperation Agency
LLIN	long-lasting insecticide-treated net
M&E	Monitoring and Evaluation
MICS	Multiple Indicator Cluster Survey
MIS	Malaria Indicator Survey
MOH	Ministry of Health
MOP	Malaria Operation Plan
MOH	Ministry of Health
MSH/IHP	Management Science for Health – Integrated Heath Project
NGO	non-governmental organization
NMCP	National Malaria Control Program
PARSS	*Projet d'Appui à la Réhabilitation du Secteur de la Santé* (World Bank)
PHC	Primary Health Care
PMI	President's Malaria Initiative
PMURR	*Projet Multisectoriel d'Urgence pour la Réhabilitation et la Reconstruction* (World Bank)
PNDS	*Plan National de Développement Sanitaire* (National Health Development Plan)
RBM	Roll Back Malaria
RDT	Rapid diagnostic test

RFA	Request for application
SANRU	*Santé Rurale* (USAID rural primary health care project)
SNAME	*Système d'Approvisionnement en Médicaments Essentiels* (National System for Procurement of Essential Medicines)
SNIS	*Système National d'Information Sanitaire (*National Health Management Information System)
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), effort 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, and tuberculosis. 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. With passage of the 2008 Lantos-Hyde Act, funding for PMI is now authorized through Fiscal Year (FY) 2014. Programming of PMI activities follows the core principles of GHI: encouraging country ownership and investing in country-led plans and health systems; increasing impact and efficiency through strategic coordination and programmatic integration; strengthening and leveraging key partnerships, multilateral organizations, and private contributions; implementing a woman- and girl-centered approach; improving monitoring and evaluation; and promoting research and innovation.

The United States Agency for International Development (USAID) has been supporting malaria control efforts in the Democratic Republic of Congo (DRC) for more than ten years. During the past five years, USAID malaria funding in DRC rose significantly: from about $7 million annually in FY2007 and FY2008, to $15 million in FY2009 and finally $18 million in FY2010. DRC has become the sixteenth PMI country with a budget of $35 million for FY2011. Malaria is a major health problem in the country, accounting for an estimated 40% of outpatient visits by children under five and 40% of the overall mortality in children under five. Implementation of large-scale malaria control activities in DRC faces serious challenges. The country's health infrastructure is very weak and it is estimated that only about 25% of the population has access to health facilities. An additional complicating factor is that external donor support of health activities in DRC is fragmented geographically.

The 2007 Demographic and Health Survey (DHS) showed very low coverage rates of major malaria prevention and control measures. Only 9% of households owned one or more insecticide-treated nets (ITNs), and only 6% of children under five and 7% of pregnant women had slept under an insecticide-treated mosquito net the night before the survey. The 2010 Multiple Indicator Cluster Survey (MICS) found that 51% of households own at least one bed net and that 38% of children under five of age and 43% of pregnant women had slept under a bed net the night before the survey. The proportion of children under five years of age with fever treated with artemisinin-based combination therapy (ACT) within 24 hours of the onset of illness and the proportion of pregnant women receiving two doses of intermittent preventive treatment (IPTp) were less than 1% and 5%, respectively, but t implementation of those interventions only began in 2006.

Between 2006 and 2010, USAID focused on assisting the National Malaria Control Program (NMCP) of DRC to scale up a package of malaria prevention and treatment measures in all 1,432 health facilities within 80[1] targeted health zones in four provinces (East and West Kasai, South Kivu, and Katanga). On February 2010, DRC signed a 5-year, $383 million Round 8 malaria grant with the Global Fund to Fight AIDS, Tuberculosis, and Malaria (Global Fund). The Global Fund has approved the Round 10 malaria proposal and the DRC will probably receive additional resources ($170 million) during the next five years (2012-2016) to accelerate malaria prevention and control. The DRC is also a

[1] **Global Fund is supporting 10 of these 80 health zones in round 8 (2009-2014)**

World Bank Malaria Booster Program country and is receiving approximately $130 million in malaria funding over the next four to five years. More recently, the British Department for International Department (DfID) committed $64 million (£41milion) until 2014 to support campaign bednets distribution and a primary healthcare project in 20 health zones. UNICEF, the World Health Organization (WHO), the Korea International Cooperation Agency (KOICA) and others have been partners with the NMCP in scaling up interventions.

This Malaria Operational Plan (MOP) for FY2012, , was developed during a planning visit carried out in February-March 2011 with participation of USAID/Kinshasa, USAID/Washington, the Centers for Disease Control and Prevention (CDC), the NMCP, and other major partners. The activities that PMI is proposing to support fit in well with the NMCP's revised National Malaria Control Strategy (2011-2015) that is being aligned with the new five-year National Health Development Plan (PNDS: 2011-2015). The activities are designed to complement activities supported under the Global Fund Round 8 grant, the expected Global Fund Round 10 funding, the World Bank Malaria Booster Program, the Department for International Department and Korea International Cooperation Agency. With FY2012 funding, PMI will expand malaria control support not only to the 112 health zones in four provinces currently targeted by USAID, but also will include one new province, Orientale, adding 24 health zones previously scheduled to be supported by the Africa Development Bank. Thus, in FY2012, PMI will provide malaria prevention and treatment services to a total of 136 health zones in five provinces (West Kasai, East Kasai, South Kivu, Katanga and Orientale Province). This represents 26% of all the 515 health zones in the country.

Insecticide-treated nets (ITNs): The revised NMCP's National Malaria Control Strategy (2011-2015) supports a three-pronged strategy for distribution of ITNs: distribution of free nets through mass campaigns, routine distribution of free nets through antenatal clinics (ANCs) and child health clinics, and commercial sales of full-cost nets. During the past three years, USAID has funded distribution of more than two million long-lasting ITNs (LLINs) in the 80 targeted health zones. With the increased malaria funding available in FY2011, an 2 million LLINs were procured and will be distributed free through a mass campaign to achieve universal coverage in Katanga Province. Another 650,000 LLINs will be used in FY2011 to sustain routine distribution through ANCs and child health clinics in Katanga, South Kivu, East Kasai and West Kasai Provinces. In FY2012, PMI resources will be used to procure 1.1 million LLINs for free distribution, to achieve universal coverage in the Maniema Province, while 1 million LLINs will be procured to meet the needs for routine distribution in five provinces including the Orientale Province.

Prevention of malaria in pregnancy: More than 85% of women in DRC attend an ANC at least once during their pregnancy. Although implementation of intermittent preventive treatment in pregnancy (IPTp) in the DRC began in 2006, scale up has gone slowly and, as of 2007, only 5% of pregnant women were receiving their two IPTp treatments. With FY2011 funding from PMI, the USG's support to IPTp scale-up will expand to 112 health zones in the four targeted provinces and will be used to continue to procure and distribute sulfadoxine-pyrimethamine (SP) for IPTp, provide refresher training of health workers, and information, education, and communication (IEC) to increase demand for and use of the recommended two doses of SP during pregnancy. With FY2012 PMI funding, 1.5 million doses of SP will be procured for malaria prevention in pregnant women.

Malaria case management: With FY2009 and FY2010 resources, USAID has supported the scale up of artesunate-amodiaquine (AS-AQ) treatment in all health facilities in the 80 targeted health zones. With FY2011 PMI resources, this support will expand to 112 health zones in those four provinces, with procurement of 6.4 million AS-AQ treatments, together with drugs and supplies for the treatment of severe malaria, refresher training of health workers in case management, IEC/BCC to support the use of AS-AQ, and technical assistance to the NMCP and Ministry of Health (MOH) to strengthen the pharmaceutical management system at the national, provincial, and health facility levels in those 112 health zones. With FY2012 funding, PMI will support the procurement of 8.4 million AS-AQ for treatment of uncomplicated malaria cases at the health facility level and artesunate suppository and injectable quinine and related supplies for pre-referral and treatment of severe malaria treatment. For patients who do not tolerate ACT, PMI will procure oral quinine. To confirm malaria cases before treatment and in accordance with the WHO's recommendations, PMI supports progressive scale up of the use of rapid diagnostic tests (RDT). A total of 4 million RDTs will be procured and distributed with FY2012 funding to improve malaria diagnosis in the five focus provinces covering 136 health zones.

Monitoring and Evaluation: The NMCP's monitoring and evaluation (M&E) framework is aligned with strategies promoted by the RBM Partnership. The current M&E plan covering the period 2009-2013 focuses on improving the National Health Information System (*Système National d'Information Sanitaire* or SNIS), and addressing data collection problems and conducting evaluations. The NMCP and partners are refining the plan as part of the revised NMCP Strategic Plan to align with the 2011-2015 National Health Development Plan (PNDS). The SNIS has developed national reporting standards and training guides, has defined national quality assurance standards for data collected, and has encouraged production of twice-yearly provincial bulletins. Though partners have increased their support for improving the SNIS, the system remains weak and fragmented due to lack of timely and complete data, poor data quality, and limited capacity for analyzing, reporting and using information to strengthen the program. The results of the 2007 DHS will provide the baseline measurement for PMI-supported activities. A malaria indicator survey (MIS) proposed for 2011 may not be implemented given the time constraints and the plan to conduct a DHS in 2012. PMI's FY 2012 support will focus on preparations for a MIS in 2013, strengthening of the SNIS including an assessment of the NMCP's data management system, and technical assistance and training for expanding insecticide resistance monitoring in sentinel sites throughout the country.

Health System Strengthening and Integration: Consistent with GHI principles, PMI is intensifying its efforts to build in-country capacity and integrate malaria activities with other USG programs. The health system in the DRC, as in other countries in the region, suffers from lack of qualified health workers and resources to provide quality health care, as well as weak coordination of donor and civil society support. PMI funds will be used with other health funds (HIV, Maternal and Child Health, and Family Planning) to support the training and supervision of health workers at the health facility as well as the community levels in order to ensure quality of malaria prevention and case management. Current primary health care activities include the prevention and treatment of malaria and HIV/AIDS, Maternal and Child Health, and Family Planning services offered in the 80 health zones that have been supported with USG funding. In addition, PMI laboratory strengthening activities, including procurement of equipment and training of laboratory technicians, will be well integrated with similar activities supported by the President's Emergency Plan For Aid Relief (PEPFAR). Finally, FY2012

PMI funding will be used to continue strengthening the supply chain management system malaria commodities more effectively in the long term.

INTRODUCTION

GLOBAL HEALTH INITIATIVE AND THE PRESIDENT'S MALARIA INITIATIVE

Malaria prevention and control is a major foreign assistance objective of the USG. 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, monitoring and evaluation; 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 has now been extended through FY2014 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 will be achieved by continuing 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 indoor residual spraying (IRS).

The DRC was selected as a PMI country in FY2011, although USAID had supported malaria control efforts there for more than ten years with substantial funding of $15 million in FY 2009, $18 million in FY 2010. Prior to the country selection, large-scale implementation of ACTs and IPTp began in 2010 and is making progress rapidly with support from USG and other partners. This FY 2012 MOP presents a detailed implementation plan for the DRC based on the PMI Multi-Year Strategy and Plan and the NMCP's revised 5-year strategy. It was developed in consultation with the NMCP, and with participation of national and international partners involved with malaria prevention and control in the country. The activities that PMI is proposing to support fit in well with the National Malaria Control Strategy and Plan and build on investments made by PMI and other partners to improve and expand malaria-related services, including the Global Fund for HIV, Tuberculosis and Malaria (Global Fund) malaria grants. This document briefly reviews the current status of malaria control policies and

interventions in DRC, describes program 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 FY2012 activities.

MALARIA SITUATION IN THE DEMOCRATIC REPUBLIC OF CONGO

The DRC is the third largest country in Africa (after Algeria and Sudan) and the fourth most populated in Africa. It has a population of approximately 68.3 million people,[2] 32% of whom live in urban areas. It straddles the equator and shares borders with nine countries – Congo Brazzaville, Central African Republic, Sudan, Uganda, Rwanda, Burundi, Tanzania, Zambia, and Angola – five of which are PMI countries. Administratively, the country is divided into 11 provinces, 25 districts, 21 cities, 145 territories and 77 municipalities. The DRC is one of the poorest countries on the African continent, ranking 168th out of 169 countries ranked in the world in terms of the 2010 human development index; an estimated 80% of the population lives on less that $1 per day. According to the 2007 DHS, the under-five mortality rate is 148/1,000 live births and maternal mortality rate is 549/100,000 live births. Life expectancy at birth is just 43 years.

Figure 1: Map the DRC with the provinces and neighboring countries

[2] ***Plan National de Développement Sanitaire*** **(National Health Development Plan) 2011-2015**

In 2003, the DRC emerged from a seven-year long armed conflict, during which the government was only able to maintain power in the western part of the country. Following the 2003 peace accords, the eastern part of the country has become more accessible, but continuing flare ups between opposing political factions make security problematic and an estimated two million displaced people add to the challenge of providing health services in the region. The first nationwide elections ever held in DRC took place in August 2006.

The country's vast size, its numerous large rivers, and the poorly maintained road system make travel very difficult and many areas are inaccessible for many months each year. Public telecommunication systems are only beginning to be developed. The capital, Kinshasa, provincial capitals, larger towns and most secondary cities have cellular telephone networks.

Currently, DRC has 393 general reference hospitals and 8,266 lower-level health facilities. The health system in DRC consists of three levels:

- A central level, which includes the office of the Minister of Health, the General Secretary of the MOH, and Directorates and disease-specific programs;
- An intermediate level made up of the 11 provincial health departments covering 65 health districts with a Minister of Health appointed by each provincial government. Each department has program offices corresponding to the central level and a provincial reference laboratory all under oversight of a provincial medical Inspector appointed by the central government. The provincial health departments are expected to provide technical and logistic support to the health zones; and
- A peripheral, operational level, which consists of 515 health zones, each with a population of 100,000-150,000 and about 15-20 health centers. The health zones are supervised by a Chief Medical Officer.

Malaria is reported by the MOH to be the principal cause of morbidity and mortality in the DRC. It is estimated that 97% of the population lives in zones (between 300 and 1,000 meters altitude) with stable transmission lasting 8-12 months per year. The highest levels of transmission (hyper- and holoendemic zones) are in the north and west of the country. The remaining 3% of the population lives in highland or mountainous areas (mostly in North Kivu, South Kivu and Katanga Provinces), which are prone to malaria epidemics. As is the case throughout tropical Africa, the greatest burden of malaria morbidity and mortality falls on pregnant women and children under five years of age. According to MOH reports, malaria accounts for more than 40% of all outpatient visits and for 40% of deaths among children under five years of age.

Plasmodium falciparum is the most common species of malaria, accounting for 95% of infections. The epidemiology of malaria can be divided into three zones: equatorial, tropical and highland. The equatorial zone, which is typically found in the forest and post-forest savanna regions of Central Africa, is noted for its intense transmission and is capable of reaching an entomological inoculation rate of 1,000 infected bites per person per year. The tropical zone of savannas where the rainy season lasts from five to eight months, . The highland zone is located to eastern high altitude regions (1,000 – 1,500 m) where malaria transmission is unstable and greatly dependent on temperature, rain and topography. The major vector is *Anopheles gambiae*, but *An. funestus* predominates in the highlands of the eastern part of the country.

CURRENT STATUS OF MALARIA INDICATORS

The most up-to-date information on the status of malaria prevention and control interventions in DRC comes from the 2007 DHS and MICS 2010. NMCP targets for 2015 are also summarized in the table below.
The 2007 DHS reported household ownership of any net in DRC to be 28% and ownership of an ITN at 9% versus 51% for the MICS (2010). This may be explained by mass distribution held in four provinces after the DHS and before the 2010 MICS was completed. Only 6% of children under-five surveyed had slept under an ITN the previous night in the 2007 DHS compared with 38% in the MICS. With the DHS, only 5% of pregnant women had taken one and two or more does of SP for IPTp. Pregnant women sleeping under an ITN rose from 7% in 2007 to 43% in the 2010 MICS.

The DHS also showed weak case management of malaria in children under-five. Only 17% of children with a fever in the last two weeks were treated with an antimalarial drug the same day or the next day after onset of the fever. Of those treated, less than 1% had received an ACT, while 10% received quinine, the second-line treatment. The MICS did not collect data on IPTp and ACTs coverage.

Indicator	2007 DHS	MICS 2010	NMCP 2015 Targets
Households with ≥ 1 ITN	9%	51%	>80%
Children ≤ 5 year sleeping under an ITN the previous night	6%	38%	>80%
Pregnant women who slept under an ITN the previous night	7%	43%	>80%
Women who received ≥ 2 doses of IPTp during their last pregnancy in the last two years	5%	N/A	>80%
Children ≤ 5with fever in the last two weeks who received treatment with an ACT within 24 h of onset of fever	<1%*	N/A	>80%

***Although a total of 17% of children under five received an antimalarial drug the same day or next day after onset of fever, most were treated with quinine; SP and Amodiaquine were also prescribed.**

NATIONAL MALARIA CONTROL PLAN AND STRATEGY

Taking into account its epidemiological profile, DRC is focused on scaling up proven high-impact malaria interventions. The strategies used in this process were adopted by the DRC in 2002 and updated in 2007 and 2009, while considering the recommendations of the WHO and the Global Malaria Action Plan goal to reduce malaria burden (morbidity and mortality) to 50% in 2010 and 75% in 2015, with respect to the 2000 baseline. The National Strategic Plan 2009-2013 was revised for 2011 – 2015 to align with the National Health Development Plan (NHDP).

While the National Malaria Control Strategy has not changed during the past year, several policies and approaches were amended. The NMCP originally targeted free LLINs for high risk groups only (children under five and pregnant women) with mass distribution campaigns and through routine

channels starting in 2008. The NMCP policy has now shifted towards achieving universal coverage (one net for two people or three nets per household) by 2012 ; improved case management in health facilities combined with increased use of rapid diagnostic tests (RDTs) nationally; and community-based treatment of fever with ACTs and community education.

Per WHO guidelines, the NMCP recommends biological confirmation of suspected malaria cases either by RDT or microscopy where available.

Progress toward National Malaria Strategic targets

The 2011-2015 National Malaria Strategy of DRC sets ambitious targets for ITN coverage to move from control to elimination. With 97% of population at risk of malaria, the coverage targets for the control phase of DRC's strategic plan calls for reaching about 80% of the population at risk of malaria with LLINs. DRC is planning to reach these targets in late 2012.

MULTILATERAL AND BILATERAL DONORS IN MALARIA CONTROL

Many donors are contributing to malaria control efforts in DRC. The health zones supported by these donors depend on one hand on the non-governmental organizations (NGOs) they have traditionally funded as well as on decisions made by the MOH in assigning them to different provinces and areas of the country.

Global Fund: The major donor for malaria control activities in DRC is the Global Fund. In Round 3, DRC received a five-year malaria grant for $53.9 million that ended in June 2009 and supported activities in 119 of 515 health zones of the country. A follow on $383 million Round 8 grant is being implemented in same geographic areas. More recently, the country secured $170 million Round 10 $170 million grant to cover the period (2012-2016).

The World Bank: The Booster Program Phase I was implemented through two World Bank projects: 1) DRC Health Sector Rehabilitation Project (referred to as PARSS), a 4-year, $150 million project with a $30 million Malaria Booster Program component providing a package of malaria prevention and treatment services; and 2) a $180 million Emergency Urban and Social Rehabilitation Project (referred to as PMURR), an urban development project that included a $13 million, one-time procurement and distribution of two million long lasting insecticide-treated nets (LLINs) to Kinshasa town and province (now completed). The current project will contribute an additional $100 million (Booster Program Phase II), which was announced in April 2010, as an extension to the Health Sector Restructuring Support (PARSS) Project as well as fill the gap of LLINs for mass distribution campaigns over the next two years.

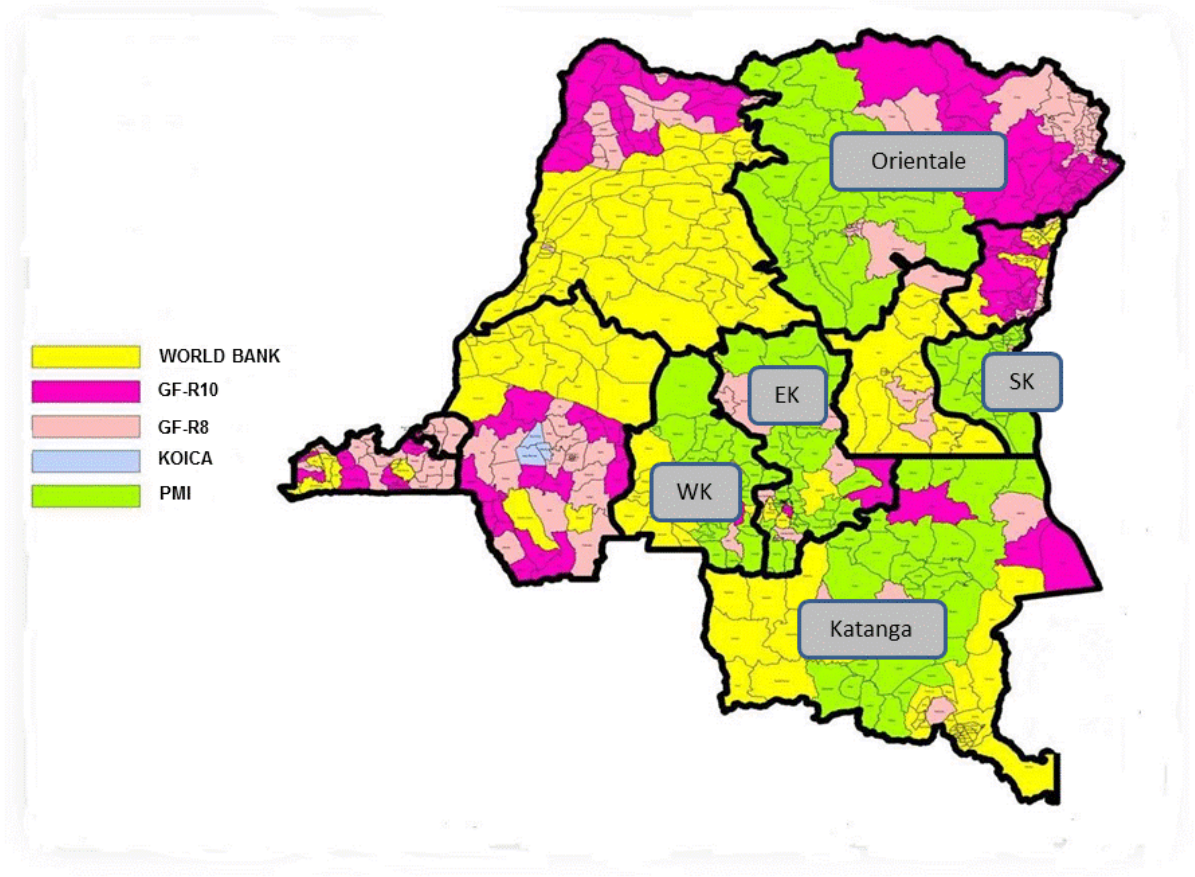
Department of International Development - DfID: will invest $64 million (£41milion) to support campaign bednets distribution in two major provinces: Equateur and Kinshasa as well primary healthcare project in 20 health zones.

PMI: The US Government's malaria funding to DRC increased from a level of $1-3 million per year between 2000 and 2006, to $7-8 million in FY2007 and FY2008, and to $18 million in FY2010. This funding, together with maternal and child health, tuberculosis, HIV/AIDS, and family planning

funding has been used to support a comprehensive primary health care project in all health facilities in 80 health zones in four provinces: Katanga, East Kasai, West Kasai, and South Kivu where USAID had been supporting health service delivery. In 2010, DRC became a PMI focus-country with an FY2011 budget of $34.9 million, to expand malaria services from 80 health zones to 112 health zones, covering 22% of the 515 health zones nationwide. In FY2012, PMI will continue to focus its activities in the 112 health zones while adding 24 new ones in Orientale Province, initially planned to receive support from the African Development Bank. The PMI support will then cover 136 health zones representing approximately 19 million people for 26% nation coverage.

In addition to the above-listed donors, support for malaria control has come from UNICEF, the Korean International Cooperation Agency , the African Development Bank, the Canadian International Development Agency , WHO and the British Department for International Development , UNITAID also made a one-time donation of $27.5 million, which has been used to purchase 5.5 million LLINs, distributed in 2009 and early 2010. Since 2006, the Government of the DRC (GDRC) has provided approximately $2 million annually to the NMCP for staffing costs, infrastructure and some commodities; since then funding for salary support has continued at about the same level but no funding is provided for commodities.

Figure 2: Proposed Partner Support of Malaria Activities by Health Zone – 2011



GOAL AND TARGETS OF THE PRESIDENT MALARIA INITIATIVE

In the DRC, PMI aims at expanding malaria control efforts to reach large areas with key interventions, achieving a 50% reduction in malaria burden (morbidity and mortality), in at-risk populations when compared with the 2007 baseline established in DRC's last demographic and health survey (DHS)

As such, by the end of 2014, PMI will assist the DRC to achieve the following targets in populations at risk for malaria:

- More than 90% of households with a pregnant woman and/or children under five will own at least one ITN;
- 85% of children under five will have slept under an ITN the previous night;
- 85% of pregnant women will have slept under an ITN the previous night;
- 85% of pregnant women and children under five will have slept under an ITN the previous night or in a house that has been sprayed with IRS in the last 6 months when appropriate;
- 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 will have ACTs available for treatment of uncomplicated malaria; and
- 85% of children under five with suspected malaria will have received treatment with an ACT within 24 hours of onset of their symptoms.

EXPECTED RESULTS — FY2012 (YEAR TWO)

By the end of FY2012, the following targets will have been met:

Prevention:

- 2.1 million LLINs will be procured and distributed to families in universal coverage campaigns in Maniema Province and routine services within the provinces of South Kivu, East and West Kasai, Katanga and Orientale;
- 1.5 million sulfadoxine-pyrimethamine (SP) treatments will be distributed to pregnant women during ANC visits in the provinces of South Kivu, East and West Kasai, Katanga and Orientale; and
- 4,000 health workers in 136 health zones in five provinces will be trained or re-trained in Malaria in Pregnancy who will have received supervision visits from the higher level of the health system.

Treatment:

- 8.4 million AS-AQ treatments will be procured and 4 million treatments will have been distributed to health facilities in the 136 focus health zones. This procurement will cover 136 USAID supported zones as well as provide a buffer stock of ACT treatments to respond to gaps in areas outside PMI zones. ;
- Approximately 50,000 treatment kits for the management of severe malaria will be procured;
- Approximately 102,000 doses of rectal artesunate will be procured to support pre-referral for severe malaria cases;

- Approximately 4 million RDTs will be procured and at least 2 million distributed together with training and ongoing supervision in their use;
- 4,000 health workers will be trained or re-trained in malaria and case management and supervised in the treatment of uncomplicated and severe malaria.

INTERVENTIONS: PREVENTION AND CASE MANAGEMENT

PREVENTION ACTIVITIES

Insecticide-Treated Nets

Background

Prior to 2008, most nets were distributed through routine services at health facilities. The 2007 DHS showed household ownership of one or more ITNs was 9% nationwide, with use by children under five years of age at 6% and by pregnant women at 7%. To scale up ownership and use, rapidly and equitably, the NMCP established a multi-year cycle of mass distribution campaigns by province. Campaigns initially targeted vulnerable children, and were integrated with measles vaccination, vitamin A supplementation and deworming with mebendazole. Kinshasa conducted the first stand-alone campaign targeting universal coverage in 2008, followed by campaigns in Maniema and Orientale Provinces in 2009. USAID contributed $1 million to the distribution costs for the latter two campaigns to cover the logistics cost of the 5.5 million nets provided by UNITAID, and UNICEF and other partners provided operational support. For campaigns planned in 2011, the NMCP has identified a gap of about 2 million nets in the Katanga Province, which PMI plans to fill. Also in 2011, the NMCP is conducting a universal coverage campaign since May 2011 in the two Kasai and the Bas-Congo provinces with over 9 million LLINs provided by the Global Funds Round 8. The universal coverage distribution of bed nets in the Katanga Province was rescheduled from early 2012 to September 2011 to avoid coinciding with national elections.

The National Malaria Control Strategy promotes collective and individual protection measures against vectors: 1) use of LLINs; 2) indoor residual spraying (IRS); 3) destruction of mosquito larvae and 4) habitat modification. The last three measures are supported only in limited parts of the country`

The NMCP has recently revised its National Malaria Strategic Plan to align it with the newly adopted PNDS (PNDS: 2011-2015). The revised Strategic Plan maintains the focus on achieving high LLIN availability and use among the general population, through reaching universal coverage of all persons. The goal is to ensure that at least 80% of persons at risk of malaria sleep under an LLIN. The NMCP follows a three-pronged strategy for distributing LLINs: a) distribution of free LLINs through large-scale integrated or stand-alone campaigns; b) routine distribution of free nets to pregnant women at ANC and to children under five years of age at pre-school clinics; and c) private sector sales of full cost nets. In some health zones such as East Kasai, health facilities charge a user fee of $0.50 per net. The strategy for achieving universal coverage (one LLIN per two persons per WHO interim guidelines) is to distribute three nets per household, mostly through mass campaigns. Under its revised strategic plan, the NMCP plans to start a new cycle of universal coverage campaign in 2012.
With the assumption of replacing nets every three years, the tables below presents the LLINs distribution schedule to implement the universal coverage strategy by 2015.

LLIN mass campaigns 2009-2015: Resources and gaps

S/N	Year	Province	Population to cover	Required LLINs	Gap	Funding/partners	Status of universal coverage
1	2009	Orientale	8,808,609	4,893,672	0	UNITAID-UNICEF-USAID/PMI	Round 1-completed
2	2009	Maniema	1,865,490	1,036,383	0	UNITAID-UNICEF-USAID/PMI	Round 1-completed
3	2010	Bandundu (2 districts)	1,703,856	946,587	0	World Bank-UNICEF	Round 1-completed
4	2011	Bas Congo	2,861,561	1,589,756	0	Global Fund-PSI	Round 1-completed
5	2011	West Kasai	6,279,053	3,488,363	0	Global Fund-PSI	Round 1-completed
6	2011	East Kasai	7,864,070	4,368,928	0	Global Fund-PSI	Round 1-ongoing
7	2011	Equateur (2 districts)	1,668,600	927,000	0*	DfID-PSI	Round 1-ongoing
8	2011	North Kivu	5,742,916	3,190,509	0*	World Bank-UNICEF	Round 1-early 2012
9	2011	South Kivu	4,339,013	2,410,563	0*	World Bank-UNICEF	Round 1-early 2012
10	2011	Katanga	9,541,674	5,300,930	0*	World Bank-USAID/PMI-UNICEF	Round 1-early 2012
11	2012	Kinsahsa	7,411,989	4,117,772	0	DfID-PSI	Round 1-early 2012
12	2012	Bandundu (3 districts)	5,040,000	2,800,000	0	World Bank-UNICEF	Round 1-early 2012
13	2012	Equateur (5 districts)	5,980,874	3,322,708	0	DfID-PSI	Round 1-early 2012
14	2013	Orientale	9,914,215	5,507,897	0	Global Fund-PSI	Renewal
15	2013	Maniema	2,017,616	1,120,898	0	USAID/PMI	Renewal
16	2014	Bas Congo	3,035,830	1,686,572	1,686,572	TBD	Renewal
17	2014	West Kasai	6,661,447	3,700,804	3,700,804	TBD	Renewal
18	2014	East Kasai	8,342,992	4,634,995	4,634,995	TBD	Renewal
19	2014	Equateur (2 districts)	1,770,218	983,454	983,454	TBD	Renewal
20	2014	North Kivu	6,092,660	3,384,811	3,384,811	TBD	Renewal
21	2014	South Kivu	4,603,259	2,557,366	2,557,366	TBD	Renewal
22	2014	Katanga	10,122,762	5,623,757	5,623,757	TBD	Renewal
23	2015	Kinsahsa	7,863,379	4,368,544	4,368,544	TBD	Renewal
24	2015	Bandundu (5 districts)	5,346,936	2,970,520	2,970,520	TBD	Renewal
25	2015	Equateur (5 districts)	6,345,109	3,525,061	3,525,061	TBD	Renewal
	Total		141,224,128	78,457,849	33,435,884	TBD	Renewal

Source: NMCP – November 2011
***Gap is likely since campaign was delayed a year and population could have changed.**

Poor donor coordination is a major obstacle to implementing an effective LLIN program. In FY2010 and FY2011, USAID provided funding to support the development of a centralized database for LLINs, which should improve the NMCP's ability to track LLIN inputs geographically and target its

funding requests. The PMI Resident Advisors will continue working closely with the NMCP to help build its coordination capacity, and help monitor the implementation of this centralized database. Until 2011, the NMCP quantified its LLIN needs as one net per two persons. As of February 2011, the NMCP now follows WHO guidelines to calculate needs as one net for every 1.8 persons to avoid past problems with net shortages. DfID has committed to cover all net needs in Kinshasa and Equateur provinces in 2012.

The 2010 MICS showed that nationally, ITN ownership was 51%, and that 38% of children under five years of age and 43% of pregnant women had slept under an ITN the night before the survey. This represents significant progress in terms of ownership and use since the 2007 DHS

To maintain the LLIN coverage post-campaign, the National Strategy includes distribution of LLINs through routine ANC and pre-school clinics, but the distribution network and infrastructure are inadequate to ensure regular supplies. Monitoring the distribution of routine LLINs is a challenge, as health workers themselves have been known to divert some nets for their own use. Nevertheless, the NMCP and partners stress the importance of continuing some level of support for the routine system. UNICEF has funded a series of pre- and post-LLIN campaign surveys conducted by the Kinshasa School of Public Health, which measured indicators not only on LLIN ownership and use, but on treatment of fever, IPTp, and prevalence of anemia and parasitemia in children ages 6-59 years of age. A pre-campaign study completed in Orientale Province in September 2010 found the following: 43% of households owned an LLIN, 30% of children under five years of age had slept under an LLIN the previous night, 31% of pregnant women had slept under an LLIN the previous night, 67% of children ages 6-59 months were anemic (5.2% severely anemic), 24% of the same children had parasitemia (by finger stick), and only 0.04% of children with fever in the previous 2 weeks had received an NMCP-approved malarial treatment within 24 hours.

USAID FY2010 funding has supported the NMCP's efforts to develop a national malaria BCC national strategy that will raise awareness on the importance of ownership and use of ITNs. The strategy will use culturally appropriate techniques to address such issues as LLIN replacement, hanging, use, care and repair. In addition, partners funded by USAID have started developing a comprehensive BCC package of activities aimed at promoting behavior change and increasing the use of malaria commodities among the population.

In the absence of information on LLIN durability, the NMCP recommends replacing nets after three years of utilization. However, the NMCP cites anecdotal reports suggesting that nets in some areas last no more than 18 months, unlike manufacturers' guidelines of 3-5 years. In 2009, WHO funded the *Institut National de Recherches Biomédicales* - National Institute for Biomedical Research (INRB) to conduct a study of vector susceptibility to insecticides in one sentinel site in each of four provinces: Bas Congo, Kinshasa, Equateur and South Kivu. The objective was to determine vector susceptibility to five insecticides known to be present in DRC, especially the pyrethroids used to impregnate the nets. Mosquitoes were found to be resistant to deltamethrin, lambdacyhalothrin and DDT in all four sites but were susceptible to permethrin in the Kinshasa site. Resistance to malathion was detected only in the South Kivu site. The results confirm the need to continue insecticide resistance testing nationwide to monitor the efficacy of present and future vector control strategies. .

Progress during Last Twelve Months

To assist DRC to successfully scale up to universal coverage, PMI procured 2 million LLINs of the 5.3 million needed to support a mass net distribution in Katanga, the most populated province in DRC. World Bank will support procurement and distribution of the remaining 3.3 million. In addition, in 2010 more than 800,000 LLINs were procured with PMI funding for distribution through routine services in health facilities.

The PMI has supported zonal- and community-level BCC/IEC activities. The NMCP and partners have developed a national integrated BCC/IEC strategy for malaria control interventions which includes the promotion of correct LLIN use. PMI is in an early stage of providing technical assistance and support to the NMCP to establish surveillance of LLIN insecticidal loss and possibly physical. Results from the LLIN monitoring will help inform vector management strategy. PMI through a partnership between C-Change and PSI, DRC Global Fund Round-8 principal recipient handling mass nets distribution in three of the eleven provinces this year, collaborate in the development and field tested radio spots and TV ads emphasizing usage of LLIN as protection mean to prevent malaria to strengthen complement the campaign activities. Additionally, USAD is providing institutional and infrastructural support to 10 out of 119 Global Fund health Zones. As such some 20,000 nets were loaned to Global Fund and additional 20,000 distributed with USG funds.

***Planned Activities with FY 2012 funding* ($16,712,500)**

In its second year, PMI will continue supporting implementation of LLIN mass distribution campaigns in one province, complemented by routine distribution and communication activities to promote ownership and use. The PMI will fully support the 1,100,000 nets needed for Maniema Province in 2013. The NMCP plans advocacy and resource mobilization with other donors to cover the gaps through 2015.

- Procure and distribute 1.1 million LLINs to fully cover the LLIN universal coverage campaign in the Maniema Province, scheduled for 2013. The funding includes the cost of nets along with household registration, delivery from port to distribution site, planning, training and supervision, and social mobilization/ communications and net hang-up promotion. Emphasis will be placed on training and supervising community workers to ensure net use ($7,700,000);
- Procure and deliver one million LLINs through routine antenatal and child health clinics in 136 health zones in Katanga, South Kivu, East Kasai, West Kasai and Orientale Province. The cost covers local distribution from the health zone to health facility as well as storage, IEC/BCC and supervision costs ($ 6,000,000);
- Support the distribution cost for one million LLINs for routine services in target health zones. Funds requested include local distribution costs previously not covered, and reflect the high costs of air shipment in country. ($2,000,000). Support IEC/BCC activities to raise awareness among the population on ownership and use of bed nets, mainly by the vulnerable groups. Also storage of LLINs and supervision are included in this activity ($1,000,000).
- Provide technical assistance for campaign planning and observation. CDC will provide an advisor to assist with planning the campaign and with monitoring the quality of net distribution, communications, and data reporting ($12,500).

Indoor Residual Spraying

The DRC has limited experience in implementing IRS and although the NMCP's National Malaria Plan calls for IRS, it limits this activity to the four health zones where mining companies are operating. One company, Tenke Fungurume Mining, has conducted yearly rounds of IRS since 2008 as a part of their malaria control program in 10 of 18 health areas in the Fungurume Health Zone, Katanga Province. This program, which included universal coverage with LLINs, achieved a 60% reduction in incidence of malaria in the workforce and a 56% reduction of malaria prevalence in school age children. This program has offered training activities to help surrounding areas initiate a malaria program but, to date, IRS activities are limited to Fungurume Health Zone. Because IRS is a technically and logistically challenging malaria intervention, PMI will not support IRS activities with FY2012 funds. When significant progress has been made in the scale up of LLIN coverage and of usage of IPTp and ACTs, this decision will be re-evaluated.

Malaria in Pregnancy

Background:

In 2003, the MOH adopted IPTp with SP for prevention of the adverse consequences of malaria in pregnant women and their newborns. The national policy recommends administration of two doses of SP, at least a month apart, during the second and third trimesters of pregnancy at the time of routine ANC visits. Pregnant women who are HIV positive are expected to receive three doses of SP. Women attending an ANC pay a standard fee for a prenatal card; this fee includes all ANC services along with the cost of SP and an LLIN. Information about the IPTp doses is recorded in clinic registers.

The 2007 DHS survey found that more than 85% of pregnant women attend an ANC at least once in DRC and 79% make two visits. In spite of this, only 5% of pregnant women received two doses of SP during ANC visits, and only 7% slept under an ITN the night before the survey. According to the NMCP, many factors explain the weak percentage of pregnant women receiving two doses of SP including frequent stock outs of SP, late ANC attendance, and the fee charged for the ANC consultation. However, since these fees help ensure the functioning of the health facilities and the payment of incentives (*primes*) for the workers; they may be difficult to remove.

The NMCP and the Reproductive Health Program coordinate their activities and malaria has been integrated into the reproductive health training modules, although some duplication of training between the two programs does occur. The NMCP and Reproductive Health Program are developing a common action plan where the latter will coordinate IPTp provision through ANC care.

Progress during the last 12 months

Currently, most of the major donors fund ANC services in the health zones they support, but not all health facilities in these zones are covered, except for the 80 USAID-supported zones. Supplies of SP for ITPp are purchased and distributed by each partner, as are LLINs. Overall, stock outs of SP are reported to have become less frequent, since the SP formerly used as the first-line drug for the treatment of uncomplicated malaria is now available for IPTp. In those health zones that are not supported by a specific partner, stock outs are more frequent. LLINs, stock outs appear to be more

frequent since the NMCP has prioritized distribution through campaigns, thus limiting the supply available for routine services.

In 2011, PMI procured 1.1 million SP for free distribution during ANC visits.

Through the WHO-National Program Officer, who is funded by PMI, the PMI Resident Advisor included, PMI has provided technical support to ensure that the NMCP and the Reproductive Health Program complement each other, and that donor support is well coordinated, extending coverage to as many health zones as possible.

The new USAID bilateral health service delivery program now operates in 80 health zones, providing a full package of malaria services as well as all other basic health services. Starting in FY 2011, malaria services will be expanded to 112 health zones.

Planned Activities with FY 2012 funding *($1,000,000)*

With FY 2012 funding, PMI will expand to 24 health zones in Orientale Province. PMI funding for malaria in pregnancy interventions will continue to support IPTp and provision of LLINs at ANCs in 136 USAID-supported health zones, to be carried out through two separate funding mechanisms:

- Procure SP for ANCs in health facilities in 136 health zones. Using the quantification for these 136 health zones done by a PMI implementing partner, a total of 1.5 million SP treatments will be required to provide 100% coverage ($100,000), and

- Provide initial and/or refresher training to health facility staff and community health workers on malaria in pregnancy interventions including counseling strategies on use of LLINs during pregnancy and the importance of early attendance at ANC, providing two treatments of IPTp according to national policy, and proper recording of interventions for program monitoring, in 70 health zones through current Integrated Primary Healthcare Project ($450,000) ; and in 66 additional PMI-supported health zones through a new bilateral mechanism (under procurement) ($450,000).

CASE MANAGEMENT ACTIVITIES

Malaria Diagnosis

Background:

According to the national malaria treatment policy in DRC, every febrile patient regardless of age should undergo parasitological testing for malaria Implementation of this new policy is still underway. As of May 2011, the treatment of malaria in most peripheral health facilities in DRC was still based on clinical diagnosis alone. Malaria microscopy is only available in larger health centers and hospitals, but little is known about the quality of those diagnoses. As yet, no plans exist to introduce RDTs at the community level; however, the Kinshasa School of Public Health with support of CIDA has recently conducted a study assessing the feasibility of this strategy in Bas Congo Province. Preliminary results

show that RDTs can be used effectively at the community level. Quantification of RDT needs is detailed in the table below:

Needs	YEAR				
	2011	2012	2013	2014	2015
RDT (Units)	22.869.087	47.110.319	36.392.722	43.731.921	25.739.359

Procurement of laboratory diagnostic equipment and supplies is done by individual donors according to the needs for the health zones they support. Most microscopes are binocular and use electricity or a mirror for lighting; no regular maintenance of the microscopes is provided. There is no charge for RDT diagnosis in the facilities in these ten heath zones; however, patients in most other health zones do pay a fee for a package of services that includes diagnostic testing.

Progress during the last 12 months

PMI supported the revision of the training modules for laboratory diagnostic in accordance with WHO 2010 guidelines and IMaD completed the first training of trainers of trainers in malaria microscopy and RDTs for national level and PMI supported provinces. In February 2011, PMI supported training in microscopy and RDT for 56 representatives of the focus provinces of Katanga, South Kivu, East and West Kasai. The National Institute for Biological Research has been responsible for quality assurance and control in 119 health zones supported by Global Fund, but some challenges in terms of frequency and quality of supervisory visits have been identified and alternatives are being considered.

In the 112 health zones where USAID is working, training in RDT use has been integrated with training on malaria in pregnancy and malaria case management. This includes the ten health zones where the Global Fund also provides services.

Planned Activities with FY2012-funding ($4,400,000)

Malaria laboratory diagnosis is a key component of good case management and it is imperative that patients with fever are adequately tested before antimalarial treatment is prescribed. In FY2012, PMI will continue to support the strengthening of malaria diagnosis (both microscopy and RDTs) in health facilities in the 136 health zones supported by PMI. The following activities are planned:

- Procure 4 million RDTs for use in the 136 health zones in the five provinces to support malaria diagnosis. These tests will be placed in health facilities where close supervision of health workers can be assured ($3,000,000);

- Support training for national level diagnosis experts in microscopy and RDTs and support reference laboratories at national and provincial levels. Activities will include microscopy and RDT training of trainers. This activity will allow to continue supporting the DRC efforts in the implementation of laboratory testing at provincial level, institutionalization of quality control strategies, development of a team of trainers and supervisors for microscopy and RDTs, and WHO accreditation ($500,000); and;

- Provide training and supervision to laboratory staff and health workers performing malaria RDTs and also cover distribution costs of RDTs in the 70 PMI-supported health zones ($450,000) through current Integrated Primary Heath Care Project,

- and in 66 additional PMI-supported health zones ($450,000) through a new bilateral mechanism under procurement.

PHARMACEUTICAL MANAGEMENT AND MALARIA TREATMENT

Pharmaceutical management system

Background:

The pharmaceutical sector in DRC is highly fragmented, with inadequate governmental oversight. Multiple parallel pharmaceutical supply systems exist for public sector health facilities and the supply system for any particular health facility depends largely on the donor supporting the health zone where the facility is located. The MOH Directorate of Pharmacies, Medicines, and Traditional Medicine (DPM) oversee the pharmaceutical sector. In 2007, a WHO evaluation recommended an overhaul of the DPM with the creation of an independent medical agency that would generate and retain its own revenue and operate independently from political influence. USAID is working with essential drug suppliers and other partners in country to improve and expand the pharmaceutical system in DRC.

In 2002, the MOH established the National System for Procurement of Essential Medicines (SNAME) with the objective of centralizing procurement of essential medicines through a non-profit central purchasing agency, known as FEDECAME, and decentralizing the distribution of medicines in peripheral areas through a network of 30–40 regional distribution depots (*Centrales de Distribution Regionale*; CDR). These CDRs are non-profit private depots that the MOH has contracted to serve as regional warehouses for the public sector pharmaceutical supply system. FEDECAME has three primary responsibilities: procurements for the public sector pharmaceutical supply system, quality assurance of those products, and technical and logistical support for the CDRs.

Given the fragmented nature of the pharmaceutical system in the country, responsibility for estimating drug requirements depends on whether the partner supporting the health zone or the MOH program is following a 'push' or 'pull' pharmaceutical supply system. Accurate and reliable consumption and/or morbidity data are not available to inform quantification. Methods for quantifying needs vary widely across the country depending on the health zones and donor partner requirements. Quantification methods may also differ depending on the requirements of disease-specific programs. Given the absence of reliable consumption or morbidity data, pharmaceutical supply needs are quantified based on dispensing data (at best), on the popularity of the pharmaceuticals (at worst), or on any "method" in-between, from demographic data to availability of funds.

FEDECAME is only authorized to procure those products listed on the national essential medicines list. All procurements are done via open tenders, with approximately 98% representing international open tenders. Donors and other MOH partners who do not procure through FEDECAME are responsible for either paying a 6.6% importation tax, or obtaining a waiver from the Ministry of Finance. Most groups rely on private clearing and forwarding agents, and private transportation

companies to transport medicines and supplies to the depots or offices in the health zones. Ground transportation within the country is one of the major challenges to the pharmaceutical supply system. The primary mode of transportation for pharmaceutical supplies after their arrival at a port of entry is via air, although even air transport services are limited. The CDRs are generally well run and well organized, with appropriate storage conditions including shelving and pallets, temperature control, security, and designated re-packaging areas.

The drug quality assurance system in DRC is weak. No WHO-certified testing laboratory exists, although the GDRC has identified four private sector laboratories that should be used for testing all imported pharmaceuticals. There is currently no pharmacovigilance system, although the MOH signed a decree creating a national system and has developed an implementation plan. Therapeutic efficacy monitoring of antimalarials will be supported by the Global Fund Round 10 grant. Therapeutic efficacy tests will be implemented by Kinshasa School of Public Health Pharmacovigilance Unit.

Governance issues are another concern in the pharmaceutical system. Even though no major leakages have been reported, no comprehensive system is in place to ensure accountability of commodities procured by donors. A major challenge within the pharmaceutical sector is the non-payment of salaries, particularly of staff working at the health facility level. Some donors provide a '*prime*' (bonus) to supplement the salaries of the staff in the health zones they support, while others including USAID, do not. As these staff are the same ones responsible for managing the health facility's finances and the cost-recovery funds, misappropriation of funds can occur.

National treatment policy and practice: In March 2005, the MOH changed its first-line treatment for uncomplicated malaria from SP to artesunate amodiaquine (AS–AQ) and made oral quinine the recommended treatment for patients who failed to respond to AS–AQ. For pregnant women, quinine is the antimalarial of choice, and AQ–SP is an alternative after the first trimester of pregnancy. Parenteral quinine is the recommended treatment for severe malaria in all patients.

The new treatment policy was implemented beginning in 2006, but scale up has been slow. By the end of 2012, it is expected that ACTs will be in use in all 515 health zones as each will have a donor supporting provision of the ACTs. Although training is done by partners, the NMCP makes sure trainings are conducted according to set guidelines because more than 365 institutions train healthcare personnel in DRC, and some do not follow or are not aware of current NMCP guidelines in their training.

The MOH has approved case management with ACTs at the community level and the roll out of this policy has already begun in some health zones. In PMI-supported health zones, more than 400 community health workers are already providing ACT to malaria patients. Under the leadership of the MOH, DRC has been implementing Integrated Management of Childhood Illness (IMCI) since December 2005. As of September 2010, IMCI-trained site "*relais"* were providing services at 716 community sites, covering approximately a population of 1,7 million.

The following table shows the expansion in the number of Community Case Management sites:

Number of:	**Dec 05**	**Sept 06**	**Sept 07**	**Sept 08**	**Sept 09**	**Sept 10**
Provinces covered	1	3	6	9	10	10
Health Zones with trained site *relais*	1	8	30	52	78	94
CCM sites with trained site *relais*	12	54	224	510	716	1,117
Population of CCM sites (estimated)	10,869	82,598	506,192	743,984	900,726	1,692,379

The NMCP has set what is probably an unrealistic high coverage target for malaria treatment by 2015, indicating 80% of patients with a fever will have been diagnosed and treated according to national guidelines at all levels of the health system. According to the 2007 DHS, the country is still far from reaching this target, as only 17% of children under-five were treated with any antimalarial drug and fewer than 1% had received an ACT within 24 hours of the onset of their fever.

Currently, the AS–AQ being used in DRC comes from in India (Ipca Laboratories and Cipla Pharmaceuticals) as well as Morocco (SANOFI) The presentation is fixed co-formulated packs for four different age groups, 0–11 months, 1–5 years, 6–13 years and more than 13 years old. Most AS–AQ is procured and distributed by partners to the health zones they are targeting, bypassing the central MOH pharmaceutical management system (FEDECAME) but using (CDR). This means that national information on ACT usage is fragmented and incomplete. In those health zones where the Global Fund is supporting malaria control activities, drugs are provided through a "push" system (supply driven), but this is being converted to a "pull" system (demand driven). The Global Fund supported health zones are providing RDTs and ACTs free of charge, but the patient has to pay a consultation fee ranging from 250 to 500 Congolese francs (US$0.25 to $0.50). Reports from various partners indicate that there have been problems with acceptance of AS–AQ, apparently due to the side effects of AQ.

The treatment of uncomplicated malaria cases, since 2005, is based on ACT; if unsuccessful, quinine in tablet form is recommended. Despite the bitter taste, oral quinine remains the alternative treatment in cases of intolerance to AQ-AS. These instances should be very infrequent and health workers will be trained to pay special attention to support patient's adherence to the regimen. Rectal artesunate is recommended as a pre-referral drug at health facility level. Severe cases are managed at the hospital level with parenteral administration of quinine.

In the 112 USAID-supported health zones, training of health workers in the prevention of malaria in pregnancy is carried out in an integrated fashion with training in malaria case management. In those health zones where USAID is implementing activities, a seven-day training course is provided to the

health zone management team and a three-day course for the chief nurse and deputy in each health facility in the zone.

With the deterioration of the public health system in DRC, the private sector has flourished and a variety of antimalarial drugs are also available for purchase without prescription in shops and pharmacies, including numerous different presentations of SP, quinine, and ACTs as well as artemisinin monotherapies.

Progress during the last 12 months

In 2010, nearly 4 million AS–AQ treatments were procured by PMI and distributed through USG implementing partners. An additional 3 to 5 million treatments are in the FY2011 plans. Patients pay $0.25 for each child treatment (0–6 years and 7–13 years) and $0.50 for an adult treatment consultation included; these costs have been standardized across most USG-supported health zones enforcing a cost-recovery approach.

A total of 47 members of the health zone team have been trained along with 722 health facility staff in 2009during the first quarter of 2010 in the management of uncomplicated and severe malaria, and also pre-referral treatment. These workers are supervised once a month by a member of the health zone management team. Refresher training is done as part of these supervisory visits.
The following table shows the national estimated AS–AQ needs for the public sector in DRC. These calculations were presented as part of DRC's strategic plan and were done by the NMCP in coordination with partners working in malaria in the country. The number of malaria episodes by the different age groups, utilization rates of the public sector, and the impact of prevention strategies were all considered in these calculations:

1. Proportion of population by age groups: 0–11 months = 4%; 1–5 years = 16%; 7–13 years = 25%; >13 years = 55%; growth rate from 2011 = 2.9/1,000.
2. Estimated health facility utilization rate (portion of needs to be covered by PMI) = 25%.
3. Average number of malaria episodes per year for the 0–11 months = 2; 1–5 year age group = 4; 7–13 year age group = 2; >13 years age group = 1.
4. Percentage of malaria cases treated with AS–AQ at health zones supported by PMI = 100%.
5. Percentage of patients with intolerance who would require quinine = 3%.
6. Estimated cost of AS–AQ fixed dose for 0–11 months = $0.31; 1–6 years = $0.31; 7–13 years = $0.55; >13 years = $0.86.
7. Cost of quinine (300mg) = $0.036.

Drug/Formulation	**Patient**	**Year**				
		2011	**2012**	**2013**	**2014**	**2015**
AS+AQ (25/67.5mg) fixed-dose blister	Children 0–11 months	185.256	381.628	589.616	708.522	834.031
AS+AQ (50/135mg) fixed-dose blister	Children 1–5 years	817.995	1.685.069	2.603.432	3.128.458	3.682.642

AS+AQ (100/270mg) fixed-dose blister	Children 6–13 years	2.770.885	5.708.022	4.409.447	5.298.686	3.118.655
AS+AQ (100/270mg) fixed-dose blister	>13 years old	2.919.514	6.014.200	4.645.969	5.582.906	3.285.939

Planned Activities with FY2012-funding ($8,962,500)

Ensuring prompt, effective, and safe ACT treatment to a high proportion of patients with malaria in DRC represents one of the greatest challenges for the NMCP and its partners, given the weaknesses in the country's pharmaceutical management system, continued poor access to health services by a large number of Congolese, and the lack of accurate laboratory diagnostic capabilities. The complexity of AS–AQ implementation must not be underestimated with its short shelf-life, the high cost of ACTs in commercial markets ($10–$15 per treatment), the risk of substandard or counterfeit drugs, and the high levels of coverage that need to be attained.

With FY2012 funding, PMI will support the following activities in the 136 health zones targeted by USAID:

- Procure approximately 8.4 million co-formulated AS–AQ treatments for case management of uncomplicated malaria ($4,700,000);

- Procure 70,000 kits of quinine and related supplies (intravenous fluids, needles, and tubing) for the treatment of severe malaria ($500,000);

- Procure approximately 100,000 doses of rectal artesunate for pre-referral treatment of malaria ($100,000);

- Procure 200,000 doses of oral quinine for uncomplicated cases of malaria with intolerance to AS–AQ ($350,000);

- Support in-service training of facility and community-based healthcare workers responsible for the management of both severe and uncomplicated malaria and also support the distribution costs of commodities within provinces. Services will be provided through two separate mechanisms, the current bilateral mechanism covering 70 health zones for $700,000, and the new bilateral under procurement covering 66 health zones for $700,000

- Support IEC/BCC efforts related to malaria treatment, including the use of AS–AQ and laboratory testing to improve demand for and appropriate and timely use of ACTs for malaria case management through mass media and intrapersonal communication channels in 70 health zones using the current bilateral mechanism ($300,000) and in 66 additional health zones using the new bilateral mechanism under procurement ($300,000) – ($600,000);

- Strengthen the supply chain management for drugs and RDTs. This activity will include forecasting AS–AQ and SP needs, procurement, inventory management, and drug management systems and complete an end-use verification activity (500,000);

- Build capacity to provide community case management with ACTs. This activity will encompass identifying, training, equipping and supervising the *relais communautaires (community health workers)* to promote early and appropriate treatment seeking behavior ($800,000); and

- Provide technical assistance visits by CDC Atlanta staff to activities related to case management, in particular, on assisting with issues related to training of health care workers and community case management ($12,500).

EPIDEMIC SURVELLANCE AND RESPONSE

Approximately two million residents, or about 3% of the Congolese population, live in areas at risk of epidemic malaria in the provinces of Katanga Orientale and North and South Kivu in eastern DRC. These areas include 41 health zones and are the same ones where political instability has caused major population displacements, complicating any response to upsurges in malaria incidence. The last epidemic reported occurred among refugees in 2007-2008 and DRC depended on international partners for assistance in controlling this outbreak. The revised National Malaria Control Strategy (2011-2015) has set a target for 2011 of controlling 80% of the outbreaks (defined as a doubling of the number of cases when compared with the two previous years). In spite of these directives, nothing has been put in place at the provincial level to ensure early detection and response to epidemics. No emergency stocks of medicines exist and no one has training in epidemic detection and response.

Disease surveillance is carried out under the coordination of the *Direction de la Lutte Contre la Maladie*. Unfortunately, plans for containment of malaria epidemics have not been finalized, and the MOH continues to rely on partners working in these provinces to assist with any outbreaks. WHO has prepared a proposal to support NMCP efforts to improve epidemic surveillance and response in the four provinces. The two-year project targeting seven million people would result in a map of the epidemic zones, completed guidelines for control and management of malaria epidemics, and training of personnel. Given other priorities, PMI will not fund these activities in FY 2012. However, the PMI Resident Advisors will provide technical guidance on the development of this system and help identify other partners' support. . The option of supporting epidemic surveillance and response planning in each province will be discussed in the future.

INTEGRATION WITH OTHER GLOBAL HEALTH INITIATIVE PROGRAMS

The GHI promotes a new operational model to meet its dual objectives of achieving significant health improvements and creating an effective, efficient and country-led platform that ensures the sustainable delivery of essential health care and public health programs. The DRC was selected a BEST country late 2010 and a GHI country in March 2011. The PMI is committed to supporting the integration of activities from planning to implementation stages at the health facility and community level. Although the strategic framework for GHI in DRC is still under development, examples of application of GHI principles in on-going and planned initiatives supported by PMI are incorporated into the MOP:

Encourage country ownership and invest in country-led plans: PMI supports implementation of the NMCP Strategy. The DRC PMI team with the NMCP conducts quarterly reviews of PMI implementing partners. This MOP reflects national priorities and policies as described in the new 2011-2015 National Health Development Plan.

Increase impact through strategic coordination and integration: For many years the USG has supported the GDRC promotion of integrated service delivery, including integration of malaria control with HIV, Maternal, Reproductive and Child Health, and Family Planning services offered in the 80 health zones supported by USAID. In FY2011, PMI will coordinate with PEPFAR's laboratory activities, building upon integrated training and supervision support to malaria services are expanded.

Build sustainability through health systems strengthening: PMI is supporting revitalization of the National Referral laboratory in malaria diagnosis and entomology; providing opportunities for training in data management, and; facilitating supervision at the zonal level to contribute to improved health worker performance.

Improving metrics and monitoring and evaluation: PMI is an active member of the NMCP Malaria Task Force for strategic coordination, monitoring and evaluation. In 2011, PMI is supporting a routine data collection and quality assessment in four of 11 provinces. Also, in 2012, PMI will contribute to a nationwide DHS, following the last one conducted in 2007.

Implement a woman-girl centered approach: PMI will continue its support of communication strategies to encourage the adoption of preventive behaviors and appropriate treatment among pregnant women and young children. This includes promoting early ANC attendance (including supporting LLIN and SP distribution at ANC clinics to pregnant women) and support surveillance and effective treatment of malaria in pregnancy. Midwives and female community health workers have been targeted for training on malaria in pregnancy. Finally, with PEPFAR acceleration plan focusing Prevention Mother to Child Transmission, PMI will work to improve access by HIV-positive women to a third dose of SP during pregnancy.

Strengthen and leverage key partnerships, multilateral organizations, and private engagement: PMI is playing a key facilitation role with the Global Fund, World Bank, WHO and other development partners to identify and resolve technical and funding gaps for the implementation of the DRC National Malaria Strategic Plan. The PMI is collaborating with the World Bank and UNICEF to jointly fund the 2011 net distribution campaign in Katanga Province. USAID served as Vice-Chair of the Country Coordinating Mechanism (CCM) and has hired a Global Fund Liaison to facilitate strategic coordination of interventions.

Promoting research and innovation: PMI supports operational research targeted on key program components, pre-referral drugs for treatment of severe malaria to inform national policies and strategies.

CAPACITY BUILDING AND HEALTH SYSTEMS STRENGTHENING

Background:

During the past two years, the MOH has demonstrated leadership over malaria control activities, a clear commitment on integrating health services at health facility and community levels to improve access to health care services. The RBM Partnership supported the completion of a national level Needs Assessment in April 2008 and the DRC was successful with its $383 million Round 8 Global Fund malaria grant application. Also, coordinated donors-supported efforts have led the country to a successful submission to the Global Fund Round 10 for a $170 million grant for 2012-2016. In the meantime, the NMCP reviewed and updated the current National Malaria Strategic Plan (2009-2013) to align it with the recently adopted PNDS 2011-2015.

The NMCP has about 52 professional staff members who work at the national and provincial levels in eight areas: prevention, surveillance, case management, epidemiology, partnership; operational research, social mobilization, monitoring and evaluation, administration and financial management. At the provincial level four to five staff members work on malaria; the Provincial Malaria Coordinator, one to two assistant nurse(s) or supervisor(s), a data manager , and a driver. There is a shortage of logistical and vector control staff to coordinate supply chain management and monitor insecticide resistance and other activities.

The health system in the DRC, as in other countries in the region suffers from lack of qualified health workers and the provision of quality health care is a major challenge.

The challenge of procuring and distributing malaria commodities (LLINs, ACTs, SPs, severe malaria kits, RDTs, etc.) in the 515 health zones in the DRC justifies the need to continue strengthening the supply chain management system. PMI with the MOH and civil society will continue its support in this area, including reinforcing data collection and analysis on use of malaria commodities for better forecasting and planning.

Progress during the last twelve months

In FY2011, PMI has engaged in a variety of evaluation-related activities to help the NMCP plan more effective interventions, including development of a monitoring and evaluation (M&E) strategy and plan, the development of a database on ITN distribution, post-campaign surveys of ITN ownership and use, and evaluation of the role of the private sector in malaria treatment.

Since August 2010, PMI provided 10 out of 60 scholarships needed to strengthen NMCP capacity at various levels through a 6 weeks malariology course organized in Kinshasa by WHO AFRO and University of Kinshasa. All PMI supported provinces NMCP Coordinators and key staff at central level were prioritized for the training.

The USG has funded a malaria technical advisor through WHO, based within the NMCP, to help develop policy guidelines and organize effective supervision and monitoring systems.

Planned Activities with FY2012 funding **($525,000)**

PMI FY2012 funding will be used to continue supporting the technical advisor position at the NMCP (National Professional Officer). At the provincial level, the NMCP has identified an acute need to strengthen the capacity of malaria focal persons related to implementing partner coordination, operational planning, and technical expertise in overall malariology, entomology, communications and M&E. As in FY 2011, PMI will support the cost of five participants in Malariology course. Focused assistance in training is critical in these areas, especially coordination and operational planning. For the latter two areas, PMI will put special emphasis on supporting a multi-partner national Malaria Task Force at the central and provincial levels, including meetings, report dissemination, and support for technical assistance for coordination and an annual program review. In FY11, PMI will support hiring of malaria specialist through Management Science for Health/Integrated Heath Project (MSH/IHP) to fill the capacity gap in the South Kivu Province.

Using an integrated approach, PMI will continue supporting efforts to improve health workers' performance in the targeted zones. PMI FY2012 funds will be used with other health funds (HIV, Maternal and Child Health and Family Planning) to strengthen the pools of trainers trained in FY2011 at the provincial levels. These trainers, in turn, will train health facility and community-based workers to provide high quality malaria prevention and case management services. Laboratory staff will receive training in order contribute to improving malaria diagnosis and the central laboratory and provincial laboratories will be strengthened to conduct supervision and quality assurance/quality control.

PMI FY2012 malaria funding will be used for the following capacity-building activities:

- Continue support to the Country Coordination Mechanism, as well as national and provincial malaria task force teams, to help address the NMCP's desire to improve coordination of government, donor and civil society malaria program activities and resources ($100,000);

- Support the organization and participant attendance for annual international malariology training course. The course will be held in the DRC in order to enable attendance by a large number of malaria program focal persons from all levels of the health sector. The course will provide training on state-of-the-art malaria program interventions, and update participants on new global and national policies and strategies. ($50,000);

- Conduct a national-level training workshop for provincial-level staff on communications, entomology, and M&E. These workshops will be focused on building technical expertise in areas that the NMCP feels provincial-level staff are especially weak. ($100, 000)

- Continue support to the WHO-recruited NPO Malaria specialist to reinforce the NMCP capacity to plan and develop policy and guidelines ($75,000).

COMMUNICATION AND COORDINATION WITH OTHER PARTNERS

The DRC has five main communication and coordination mechanisms: The "*Comité National de Pilotage*" - Steering Committee for the Coordination of National Health Development Plan (PNDS),

the Donors Group (*Group Inter-Bailleurs de Santé*), the Global Fund CCM, the Malaria Technical Working Group and the PMI Partners' Meeting.

Steering Committee for the Coordination of National Health Development Plan (PNDS):
The "*Comité National de Pilotage*" is the highest level coordination mechanism established by the MoH to oversee the implementation of the next five-year National Health Development Plan (PNDS 2011-2015)

Donors Group:
Limited to health sector donors, the Donors Group (also called Group Inter Bailleurs Santé – GIBS) meets monthly to plan and coordinate activities throughout the country, such as the LLIN mass distribution campaigns. This group does not have a mandate specific to malaria activities or a direct implementation role. Following the MOH annual review held in February 2010, this group is now part of a subcommittee within the "*Comité National de Pilotage*" led by the MOH. USAID will lead the GIBS starting in June 2011 and providing logistical support to hold the meetings.

Country Coordinating Mechanism:
The CCM meets regularly with health sector stakeholders to review options and plans for submission of proposals to the Global Fund, to keep abreast of progress towards start-up of activities and grant implementation, and to provide administrative and financial oversight of the Principal Recipients. The CCM does not, have any direct role in implementation of malaria activities. The PMI staff and USAID Global Fund Liaison participated in developing and reviewing the successful Round 10 proposal. USAID co-chairs the CCM as the second Vice-President, and also provides technical assistance through the Global Fund Liaison Advisor and through the USAID-funded Grant Management Solutions, helping to build the capacity of the CCM.

Malaria Technical Working Group:
In 2010, the MOH established a new coordinating framework called the "*Comité National de Pilotage*" where the Malaria Technical Working Group is led by the Director of Disease Control of the MOH at the national level, and the Provincial Chief Medical Officer "*Médecin Inspecteur Provincial*" at the provincial level. This group meets quarterly and in emergency situations. It is an open forum for coordination and technical discussions at the national level including civil society and, more recently, with the private sector. During the development of the PMI FY 2012 MOP, the PMI stakeholders' meeting was held as an extraordinary meeting of this working group. The group has improved donor coordination, as illustrated by improved joint planning for certain provinces to revise the map of malaria donor assistance in the country. In 2010 and 2011, the provincial extensions of the Malaria Technical Working Group were reinvigorated in four provinces, with support from PMI.

PMI Partners' Meeting

In April 2011, PMI and NMCP started quarterly all-partner meetings as part of the review process for PMI-funded activities. The purpose of these reviews is to update on program progress, identify challenges, and provide solutions in implementing PMI-supported activities and helping the NMCP to reach its targets.

PRIVATE SECTOR PARTNERSHIPS

For decades, faith-based NGOs have been providing health care in DRC, mostly in rural areas. Private sector clinics and health facilities provide almost 60% of health care services in DRC. Faith-based clinics and hospitals are known to have a better outreach and a good record of providing quality health care to hard-to-reach populations. The revised Malaria Strategic Plan indicates that of the 493 hospitals, 165 (33.5%) are owned by religious groups and 67 by parastatal companies.

The National Council of Health Non-Governmental Organizations (CNOS), a network of health NGOs has been involved during the past five years as a key partner in malaria control. The CNOS assumes high level responsibilities on the Global Fund CCM, attends meetings called by the NMCP, and expects to become more active in the future, for example in the ITN distribution campaigns. The CNOS also is becoming more engaged in raising communities' awareness on use of ITNs and ACTs. Other private sector partners in malaria in the DRC include the national Red Cross and the private nursing schools. The Red Cross volunteers support health activities including promotion of good health practices such as hygiene and sanitation at the community level. With 105,000 volunteers, the Red Cross also operates a pediatric referral hospital that manages severe malaria cases mainly in underserved populations. The private nursing schools in Kinshasa and Katanga offer training opportunities to hundreds of health workers every year, either using their own resources, or with donors' sponsorship. Training in malaria is offered using materials approved by the NMCP.

Even though there is no specific funding programmed for this activity in FY2012, PMI will promote increased participation of the private sector (including civil society) in malaria control efforts. PMI will continue to coordinate with various private organizations such as the Global Business Coalition and the United Nations Foundations, as they extend this support to malaria control in the DRC. Activities include support to the NMCP to pursue private sector and civil society's involvement in the Malaria Task Force. Private nursing schools may be considered in providing initial and refresher training to health workers on malaria prevention and case management

BEHAVIOR CHANGE COMMUNICATION

Since FY2009, USAID has funded support to behavior change communication (BCC) activities related to malaria in DRC. USAID has supported the development of a national communication strategy that will be implemented by all partners and coordinated by the NMCP. Due to delays in recruiting implementing staff, the implementation of BCC activities only started only in FY2011.

In FY2012, PMI will support implementation of the national communication strategy, mainly in the five provinces supported by USAID/DRC. Behavior change communication activities will be focused on raising awareness of health workers, religious leaders, community health workers, community groups and other malaria stakeholders on the importance of hanging and sleeping under bed nets and using other malaria commodities for prevention and treatment of malaria. In compliance with PMI BCC guidance, BCC support will utilize local effective communication channels that are culturally sound and familiar to the communities and target populations.

Details and costs of BCC activities are included in the prevention (LLINs, malaria in pregnancy) and case management sections of this plan.

MONITORING AND EVALUATION

Background:

The NMCP's monitoring and evaluation (M&E) framework is aligned with strategies promoted by the RBM Partnership. The M&E plan, revised in March 2010 and covering the period 2009-2013, focuses on improving the National Health Information System (*Système National d'Information Sanitaire* or SNIS), addressing data collection problems and conducting evaluations. The NMCP and partners are in the process of refining their plan as part of the revised NMCP strategic plan to align with PNDS 2011-2015.

The SNIS Division is located in the Primary Health Care Development Section of the Ministry's General Secretariat. It is divided into 12 subsections, including one for Monitoring and Evaluation of Priority Health Programs. In March 2011, the SNIS developed a five-year, $9.7 million strategic plan (2011-2015) to strengthen its capacity for evaluation, management and planning of its services to the Ministry of Public Health (MSP) at each level of the health system. The objectives are to provide high quality and timely data at each level for improved decision-making; data analysis at each level; and development of ways to promote use of information to improve health service operations, planning, advocacy, and development of strategies and policies. Each health zone is to achieve a minimum capacity for providing services: a computer for data management, trained staff and adapted tools for standard health information collection and reporting. By 2015, the MSP aims to have a national database in place supported by monitoring activities and meetings at each level to analyze and validate data. A national Strategic Information Center attached to the MSP's General Secretariat would promote integration and coordination of the different components of the SNIS. While the challenges that the SNIGS faces are enormous, the plan does provide an important framework with strategic priorities, emphasizing the need to standardize methods, tools and reporting. Among the achievements reported by the SNIS Division was the drafting of a framework for monitoring and evaluating its performance at the health zone level.

Though partners have increased their support for improving the SNIGS, the system remains weak and fragmented due to lack of timely and complete data, poor data quality, and limited capacity for analyzing, reporting and using information to strengthen the program. As designed, the approach is for health facilities to collect its routine information and transmit it on a monthly basis to the health zone level, which in turn sends it to the provincial and national levels for summary, analysis and reporting. The SNIGS has developed national reporting standards and training guides, and has defined national quality assurance standards for the data collected. It has also encouraged production of twice-yearly Provincial bulletins, though as of December 2010 only Kinshasa, North Kivu and Katanga provinces had produced these bulletins.

The system depends greatly on the interest and responsiveness of facility staff and zonal chief medical officers, and on the presence of donor support. As only about 25% of the population can access health facilities, the facility-based data collection system will not capture most cases of malaria or other priority diseases. Training manuals were developed and distributed to the provinces, but the persons trained often change jobs or are hired away by partner organizations. While standard facility registers and checklists exist, they are often only available and used in health zones supported by a partner. Some facilities resort to reproducing registers and forms by hand, and without follow up, tend to omit

information needed from the standard forms. Conducting good quality data analysis and validation at the health zone level is a challenge and even more so at intermediate levels where different offices process and transmit data to their own national headquarters in an uncoordinated manner. Health facility staff may complete multiple forms beyond those of the MSP, often as required by donors with a specific program focus or purpose.

The SNIGS has developed a standard data management software (GESIS) that was operational in 160 (31%) of 515 health zones as of December 2010. The SNIGS remains concerned, however, about a number of parallel information systems and software packages that partners have developed to help standardize reporting. WHO's assistance has focused on improving data quality and improving provincial-level data management capacity. It plans to provide a laptop to each provincial data manager, and is in the process of installing a Global Malaria Program package in each province. The USAID-supported *Santé Rurale* (SANRU) Project developed a District Health Information Software package to support transfer of data from the health zones to districts by e-mail. Certain health zones in four provinces (South Kivu, East and West Kasai and Katanga) were provided equipment and training, but with the end of project funding, the future of this activity is unclear. The SNIS is taking the lead to call all partners together to review the different systems and to reach some consensus as to the way forward. The Global Fund Round 8 provided US $2.4 million to support the SNIS and computerized health information system in 119 health zones, largely for training. In 2010, the European Commission-supported 9th Health Program (PS9FED) allocated Euros 539,211 (approximately $ 776,000) to support the SNIS in four provinces (South Kivu, East and West Kasai and Orientale); however, funding for this activity has been delayed.

To complement routine data collected through the SNIS, WHO supports a sentinel surveillance system in 11 sites (one per province), with plans to expand to 30 sites. Surveillance is conducted for three target groups: children under 5 years of age, persons over 5 years and pregnant women. Information is collected on malaria morbidity (cases reported and laboratory confirmed), persistence of fever and laboratory-confirmed malaria following treatment, SP doses given to pregnant women, RDTs and microscopy, and LLIN distribution in ANC and pre-school clinics. Data is available for 2009-2010, though information about its quality and use for program decisions is unclear. Though PMI will not support the system in FY 2012, it will consider such support in the future once more is understood about its operations and effectiveness.

A Malaria Indicator Survey (MIS) financed by the Global Fund was scheduled for 2011, but will likely not be conducted due to delays in planning and its proximity to the 2012 DHS. PMI will join other partners to support this DHS, which will include province-level estimates. PMI will encourage delaying the next MIS until 2014, to avoid conducting national household surveys in consecutive years.

Progress during the last 12 months

While PMI-funded M&E activities have not started, USG FY2010 funding and efforts by the current USAID PMI Resident Advisor have set the stage for full implementation of these activities. Activities planned with Measure Evaluation to support monitoring and evaluations have been delayed. To speed up implementation, a new Scope of Work has been developed with Measure Evaluation and in consultation with the National Malaria Control Program, using FY 2010 carryover funding. The new

Scope of Work includes data quality assessment and support to development of a national monitoring and evaluation plan as part of the revised national malaria strategic plan.

The USAID PMI Advisor is working closely with the NMCP and WHO to develop a comprehensive M&E strategy, and assisting in planning for the DHS 2012. Additional FY2010 funds were transferred to WHO to conduct an assessment of routine data collection and quality, and of pre-service training on malaria provided to nurses in four provinces. Work on the insecticide resistance monitoring is described in the ITN section.

Planned Activities with FY2012 funding ($800,000)

- Continue support for species identification and insecticide resistance monitoring and sentinel sites in FY 2011 supported provinces and add sites in the Orientale Province. ($125,000)

- Provide CDC technical assistance with insecticide resistance monitoring in sentinel sites. ($12,500)

- Support training and supervision to central and provincial-level NMCP staff in data collection, analysis, quality control and use for program decision making. This activity includes a data quality assessment and an evaluation of the computer network system used by the NMCP. The evaluation of the computer network will review how to incorporate the various reporting forms being completed by health facility staff both for the Ministry of Health and for donors-specific request. The NMCP will also receive support in developing a national monitoring and evaluation plan as part of the revised national malaria control strategy ($150,000)

- Provide technical assistance to the NMCP and partners in planning, developing questionnaires, implementing and conducting data analysis for a proposed 2014 MIS. ($500,000); and

- Provide CDC technical assistance with the national monitoring and evaluation planning, support capacity building for routine data management. ($12,500).

STAFFING AND ADMINISTRATION

Two health professionals will be hired as Resident Advisors, one representing CDC and one representing USAID. The USAID PMI Resident Advisor has served since late 2009, and a CDC PMI Resident Advisor will be recruited for posting in late 2011. In addition, two Foreign Service Nationals will be hired to support the PMI team, a Commodities Specialist and a Malaria Program Specialist. All PMI staff members are part of a single inter-agency team. 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 evaluated and/or interviewed jointly by USAID and CDC, and both agencies will be involved in hiring decisions, with the final decision made by the individual agency.

The two PMI resident advisors will work together to oversee all technical and administrative aspects of PMI, including finalizing details of the project design, implementing malaria prevention and treatment activities, monitoring and evaluation of outcomes and impact, and reporting of results. Both

staff members report to the USAID Mission Director or his/her designee. The CDC staff person is 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.

Locally-hired staff to support PMI activities either in Ministries or in USAID will be approved by the USAID Mission Director. 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 will need to be approved by the USAID Mission Director and Controller..

Planned Activities with FY2012 funding **($1,600,000)**

Salaries and support costs of one USAID and one CDC Technical Advisor, and two USAID FSNs, including equipment, ICASS, other Mission taxes and fees, and other associated expenses. ($1,600,000)

TABLE

Democratic Republic of Congo
Planned Malaria Obligations for FY 2012 (USD $34,000,000)

Proposed Activity	Mechanism	Budget (*commodities)*	Geographic area	Description of activity
PREVENTIVE ACTIVITIES				
ITNs				
Procure long-lasting insecticide treated bed nets (LLINs) for mass campaigns	UNICEF	7,700,000 *(7,700,000)*	Maniema	Provide LLINs to cover all 1.1 million nets required to achieve universal coverage in the Maniema Province. This includes the cost of nets delivery, social mobilization, IEC/BCC and pre-post campaign evaluation.
Procure LLINs for routine distribution through ANC and EPI clinics	DELIVER	6,000,000 *(6,000,000)*	136 health zones in five (5) provinces (West Kasai, East Kasai, South Kivu, Katanga and Orientale)	Provide LLINs to support routine services
Distribution costs for routine LLINs from port to distribution points	MSH/IHP and New RFA	2,000,000 (1 million for each partner)	136 health zones in five (5) provinces (West Kasai, East Kasai, South Kivu, Katanga and Orientale)	Support the distribution cost for 1 million LLINs @ $2/net for routine services in target health zones (local distribution costs previously not covered ; high costs due to air shipment in country)
IEC/BCC for routine distribution, storage and supervision	TBD	1,000,000*(1 million LLINs@$1/ne)t*		Support IEC/BCC activities to raise awareness among the population on ownership and use of bed nets, mainly by the vulnerable groups. Also storage of LLINs and supervision are included in this activity.

Proposed Activity	Mechanism	Budget (*commodities)*	Geographic area	Description of activity
Provide CDC technical assistance for campaign planning and observation	CDC/IAA	12,500		Assist campaign organizers in the NMCP and among partners to plan monitoring and logistics activities, and serve as an observer to help ensure quality and resolve problems in implementation.
SUBTOTAL: Insecticide-treated bed nets		**$16,712,500** ***($13,700,000)***		
Malaria in Pregnancy				
Procurement of SP	DELIVER	100,000 (*100,000*)	136 health zones in West Kasai, East Kasai, Katanga, South Kivu and Orientale	Procure 1.8 million SP treatments for 950,000 expected pregnant women in the 136 health zones, including ANC registers, cups, water, etc. to all pregnant women.
Training and supervision of facility and community-based health workers in malaria in pregnancy, and IEC/BCC related to malaria in pregnancy	IHP	450,000	70 health zones in four provinces (West Kasai, East Kasai, Katanga and South Kivu)	Train health workers with initial or refresher courses in 70 health zones in 4 provinces. This includes health workers from both public and private sectors. Conduct supervision and IEC/BCC activities.
	New RFA (TBD)	450,000	66 health zones in five provinces (West Kasai, East Kasai, Katanga and South Kivu and Orientale)	Train health workers with initial or refresher courses in 66 health zones in 5 provinces, including the Orientale Province. This includes health workers from both public and private sectors. Conduct supervision and IEC/BCC activities
SUBTOTAL: Malaria in Pregnancy		**$1,000,000** ***($100,000)***		

Proposed Activity	Mechanism	Budget (*commodities)*	Geographic area	Description of activity
TOTAL: Prevention		**$17,712,500** ***($13,800,000)***		
CASE MANAGEMENT ACTIVITIES				
Diagnosis				
Procurement of RDTs	DELIVER	3,000,000 *(3,000,000)*	136 Health Zones in five provinces(West Kasai, East Kasai, Katanga and South Kivu and Orientale)	Procure and distribute about 4 million RDTs to support malaria diagnosis in 136 health zones in five provinces, in compliance with NMCP case management guidelines.
Provide training in Africa-based institutions to national-level diagnostic Experts in microscopy and RDTs. Support reference laboratories at national and provincial levels for microscopy and RDTs training of trainers	TBD with INRB sub-grants	500,000	National and Provincial	Supervise and implement system of quality control in reference laboratories, assist in preparation for accreditation and provide equipment
Train and supervise laboratory technicians and other health workers to perform RDTs at the health zone level and to distribute RDTs at the health zones and health facility levels.	MSH/IHP	450,000	70 health zones in four provinces (West Kasai, East Kasai, Katanga and South Kivu)	Support training activities to strengthen capacity of laboratory technicians and other health workers to perform RDTs at the health zone and health facility levels.
	New RFA	450,000	66 health zones in five provinces (West Kasai, East Kasai, Katanga and South Kivu and Orientale)	

Proposed Activity	Mechanism	Budget (*commodities)*	Geographic area	Description of activity
SUBTOTAL: Diagnostics		**$4,400,000** ***($3,000,000)***		
Pharmaceutical Management and Treatment				
Procurement of AS-AQ	DELIVER	4,700,000 *(4,700,000)*	136 health zones in five provinces (West Kasai, East Kasai, Katanga, South Kivu and Orientale)	Procure 8.4 million AS-AQ treatments for uncomplicated malaria, both for health facilities and community case management (8.4 million treatments.
Procurement of drugs and supplies for treatment of severe malaria	DELIVER	500,000 *(500,000)*	136 health zones in five provinces (West Kasai, East Kasai, Katanga, South Kivu and Orientale)	Procure 70,000 kits with quinine for treatment of severe malaria
Procurement of drugs for pre-referral treatment of malaria	DELIVER	100,000 *(100,000)*	136 health zones in five provinces ((West Kasai, East Kasai, Katanga, South Kivu and Orientale)	Procure 102,000 doses of rectal artesunate for management of referral
Procurement of oral quinine	DELIVER	350,000 *(350,000)*	136 health zones in five provinces (West Kasai, East Kasai, Katanga, South Kivu and Orientale)	Support the procurement of 200,000 doses of oral quinine for cases of ACT intolerance.
Training and supervision of facility and community-based health workers trained in case management, and support drug distribution costs to health facility level	MSH/IHP	700,000	70 health zones in four provinces (West Kasai, East Kasai, Katanga and South Kivu)	Support training and supervision activities to strengthen facility and community-based health workers in 136 health zones in 5 provinces to manage malaria cases in an integrated fashion per NMCP guidelines. This activity includes support to distribution of malaria drugs to health facilities in these 13 6health zones.
	New RFA	700,000	66 health zones in five provinces (West Kasai, East Kasai, Katanga, South Kivu and Orientale)	

Proposed Activity	Mechanism	Budget (*commodities)*	Geographic area	Description of activity
IEC/BCC related to case management	MSH/IHP	300,000	70 health zones in four provinces (West Kasai, East Kasai, Katanga and South Kivu)	Support the cost of promoting use of malaria treatment commodities and services through IEC/BCC activities
	New RFA	300,000	66 health zones in five provinces (West Kasai, East Kasai, Katanga, South Kivu and Orientale)	
Strengthen the supply chain management for drugs and RDTs including end use verification	SIAPS	500,000	136 health zones in five provinces (West Kasai, East Kasai, Katanga, South Kivu and Orientale)	Contribute to on-going SPS support activities for supply chain management and addressing stock-outs, testing storage conditions (temperature, humidity) for drugs and RDTs including $100,000 for end use verification system
Build capacity to provide community case management services	MSH/IHP	400,000	70 health zones in four provinces (West Kasai, East Kasai, Katanga and South Kivu)	Support integration of community case management of malaria with other IMCI activities
	New RFA	400,000	66 health zones in five provinces (West Kasai, East Kasai, Katanga, South Kivu and Orientale)	
CDC Technical Assistance for case management	CDC/IAA	12,500		Support capacity building for case management data management
SUBTOTAL: Pharmaceutical Management and Treatment		**8,962,500 (5,650,000*)***		
TOTAL: Case Management		**$13,362,500 *($8,650,000)***		

Proposed Activity	Mechanism	Budget (*commodities)*	Geographic area	Description of activity
CAPACITY BUILDING				
Continue support country coordination mechanism at the national and provincial levels (malaria task force committees)	TBD	100,000	National and provincial	Support multi-partner National Malaria Task Force at the central and provincial levels, including meetings, report dissemination, support to technical assistance for coordination, annual review
Facilitate annual international malariology training course	WHO	50,000	National and Provincial	Support the training of five (5) medical doctors of health experts at the national and the provincial levels to attend the international malariology training courses organized by WHO in the DRC.
Support the conduct of a national-level training workshop for provincial-level staff on communication and monitoring and evaluation	WHO	100,000	National and Provincial	Support in-country training sessions for national and provincial levels staff in communication (IEC/BCC) and in monitoring and evaluation. The two trainings which are also organized at the international level will enable an increased number of participants in the DRC.
Support to WHO Technical Advisor	WHO	75,000	Nationwide	Strengthen the capacity of the NMCP at the national level in strategic planning, policies, guidelines and M&E planning through support for a WHO Technical Advisor
TOTAL: Capacity Building		**$325,000** ***($0)***		

Proposed Activity	Mechanism	Budget (*commodities)*	Geographic area	Description of activity
MONITORING AND EVALUATION				
Insecticide resistance monitoring	TBD (with INRB)	125,000	West Kasai, East Kasai, Katanga, South Kivu and Orientale	Continue support for species identification and insecticide resistance monitoring and sentinel sites in FY 2011-supported provinces and add site in the Orientale Province
Insecticide resistance monitoring technical assistance	CDC IAA	12,500	TBD	Assist the INRB and NMCP to conduct and monitor insecticide resistance monitoring through sentinel sites
Provide training for central and provincial-level NMCP staff in data collection, analysis, quality control and use for program decision making	Measure Evaluation	150,000	National (NMCP), West Kasai and East Kasai	Support training and supervision to central and provincial-level NMCP staff in data collection, analysis, quality control and use for program decision making. This activity includes a data quality assessment and an evaluation of the computer network system used by the NMCP. The NMCP will also receive support in developing a national monitoring and evaluation plan as part of the revised national malaria control strategy
Planning and implementation of 2014 MIS	Measure DHS III	500,000	Nationwide	Provide technical assistance to the NMCP and partners in planning, developing questionnaires, implementing and conducting data analysis for the MIS.
Monitoring and evaluation technical assistance	CDC IAA	12,500	TBD	Assist national M&E planning, support capacity building for routine data management
TOTAL: Monitoring and		**$800,000** ***($0)***		

Proposed Activity	Mechanism	Budget (*commodities)*	Geographic area	Description of activity
Evaluation				
IN-COUNTRY MANAGEMENT AND ADMINISTRATION				
In-country staff and administrative expenses	USAID/CDC	1,600,000	NA	Salary, benefits and related administrative costs for USAID and CDC Malaria Advisors and one or more Locally-hired employees as well as Mission and Embassy ICASS costs – Evaluation
TOTAL: Management and Administration		**$1,600,000 ($0)**		
GRAND TOTAL		**$34,000,000** ***($25,350,000)***		

*** Global Fund round 8 supports 10 out of 80 USAID health zones**

Table: President's Malaria Initiative – Democratic Republic of Congo
Year 2 (FY 12) Budget Breakdown by Partner ($000)

S/N	Partner Organization	Geographic Area	Activity	Budget
1	IHP	70 health zones in four provinces (West Kasai, East Kasai, Katanga, South Kivu)	- Training of facility- and community-based health workers and lab technicians - Supervision of health workers - Capacity building for CCM - Training of laboratory technicians in use of RDTs with a focus at the health zone level - Transportation costs of commodities and IEC/BCC	3,300
2	New RFA	66 health zones in five provinces (West Kasai, East Kasai, Katanga, South Kivu and Orientale)	- Training of facility- and community-based health workers and lab technicians - Supervision of health workers - Capacity building for CCM - Training of laboratory technicians in use of RDTs with a focus at the health zone level - Transportation costs of commodities and IEC/BCC - Hiring of one malaria specialist in four provinces	3,500
3	Measure Evaluation	NMCP, West Kasai and East Kasai and Orientale	- Training for central and provincial-level NMCP staff and preparation of 2013 MIS	150
4	Measure DHS III	Nationwide	- Technical assistance to NMCP for MIS 2013	500
5	SIAPS	West Kasai, East Kasai, Katanga, South Kivu and Orientale	- Strengthening of supply chain management including end use verification	500

6	DELIVER	West Kasai, East Kasai, Katanga, South Kivu and Orientale	- Procurement of LLINs, ACTs, RDTs, Severe malaria drugs and laboratory supplies	14,750
7	TBD-Change	National and provincial	-Continue support country coordination mechanism at the national and provincial levels (malaria task force committees) - IEC/BCC mass campaign	1,100
8	IMaD	West Kasai, East Kasai, Katanga, South Kivu and Orientale	- Support to reference laboratories at the national and provincial levels, capacity building and quality control	500
9	TBD	West Kasai, East Kasai, Katanga, South Kivu and Orientale	- Insecticide resistance monitoring	125
10	WHO	Kinshasa	- WHO malaria technical advisor -Support to annual malariology training -Support to national level training on communication and monitoring and evaluation	225
11	USAID	Nationwide	- Staff, administrative and management costs for USAID Resident advisors and FSNs	900
12	CDC/ IAA	Nationwide	- Technical support - Staff, administrative and management costs for CDC resident Advisor	750
13	UNICEF Malaria	Maniema and Orientale	- Mass campaign	7,700
	TOTAL			**34,000**