

This Malaria Operational Plan has been approved by the U.S. Global Malaria Coordinator and reflects collaborative discussions with the national malaria control programs and partners in country. The final funding available to support the plan outlined here is pending final FY 2016 appropriation. If any further changes are made to this plan it will be reflected in a revised posting.



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## PRESIDENT'S MALARIA INITIATIVE



# **PRESIDENT'S MALARIA INITIATIVE**

**Democratic Republic of the Congo**

**Malaria Operational Plan FY 2016**

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## ABBREVIATIONS and ACRONYMS

ACT	Artemisinin-based combination therapy
ANC	Antenatal care
AL	Artemether lumefantrine
AS-AQ	Artesunate-amodiaquine
BCC	Behavior change communication
CCM	Country coordinating mechanism (of the Global Fund)
CDC	Centers for Disease Control and Prevention
CDR	<i>Centrale de Distribution Régionale des médicaments essentiels</i>
CHWs	Community health workers
DFID	U.K. Department for International Development
DHS	Demographic and Health Survey
DPS	<i>Division Provinciale de la Santé</i> (Provincial Health Division)
DRC	Democratic Republic of the Congo
FBO	Faith-based organization
FY	Fiscal year
Global Fund	Global Fund to Fight AIDS, Tuberculosis and Malaria
HMIS	Health management information system ( <i>Système National d'Information Sanitaire – SNIS</i> )
iCCM	Integrated community case management
IEC	Information, education, communication
INRB	<i>Institut National de Recherche Bio-Médicale</i> (National Institute for Biomedical Research)
IPTp	Intermittent preventive treatment for pregnant women
IRS	Indoor residual spraying
ITN	Insecticide-treated mosquito net
LMIS	Logistics management information systems
M&E	Monitoring and evaluation
MICS	Multiple Indicator Cluster Survey
MIP	Malaria in pregnancy
MIS	Malaria indicator survey
MoH	Ministry of Health
MOP	Malaria Operational Plan
NGO	Non-governmental organization
NMCP	National Malaria Control Program
PMI	President's Malaria Initiative
RDT	Rapid diagnostic test
SP	Sulfadoxine-pyrimethamine
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USG	United States Government
WHO	World Health Organization

## I. EXECUTIVE SUMMARY

When it was launched in 2005, the goal of the President's Malaria Initiative (PMI) was to reduce malaria-related mortality by 50% across 15 high-burden countries in sub-Saharan Africa through a rapid scale-up of four proven and highly effective malaria prevention and treatment measures: insecticide-treated mosquito nets (ITNs); indoor residual spraying (IRS); accurate diagnosis and prompt treatment with artemisinin-based combination therapies (ACTs); and intermittent preventive treatment of pregnant women (IPTp). With the passage of the Tom Lantos and Henry J. Hyde Global Leadership against HIV/AIDS, Tuberculosis, and Malaria Act in 2008, PMI developed a U.S. Government Malaria Strategy for 2009–2014. This strategy included a long-term vision for malaria control in which sustained high coverage with malaria prevention and treatment interventions would progressively lead to malaria-free zones in Africa, with the ultimate goal of worldwide malaria eradication by 2040-2050. Consistent with this strategy and the increase in annual appropriations supporting PMI, four new sub-Saharan African countries and one regional program in the Greater Mekong Sub region of Southeast Asia were added in 2011. The contributions of PMI, together with those of other partners, have led to dramatic improvements in the coverage of malaria control interventions in PMI-supported countries, and all 15 original countries have documented substantial declines in all-cause mortality rates among children less than five years of age.

In 2015, PMI launched the next six-year strategy, setting forth a bold and ambitious goal and objectives. The PMI Strategy for 2015-2020 takes into account the progress over the past decade and the new challenges that have arisen. Malaria prevention and control remains a major U.S. foreign assistance objective and PMI's Strategy fully aligns with the U.S. Government's vision of ending preventable child and maternal deaths and ending extreme poverty. It is also in line with the goals articulated in the RBM Partnership's second generation global malaria action plan, *Action and Investment to defeat Malaria (AIM) 2016-2030: for a Malaria-Free World* and World Health Organization's (WHO) updated *Global Technical Strategy: 2016-2030*. Under the PMI Strategy 2015-2020, the U.S. Government's goal is to work with PMI-supported countries and partners to further reduce malaria deaths and substantially decrease malaria morbidity, towards the long-term goal of elimination.

The Democratic Republic of Congo (DRC) was selected as a PMI focus country in FY 2011.

This Fiscal Year (FY) 2016 Malaria Operational Plan presents a detailed implementation plan for the DRC, based on the strategies of PMI and the National Malaria Control Program (NMCP). It was developed in consultation with the NMCP and with the participation of national and international partners involved in malaria prevention and control in the country. The activities that PMI is proposing to support align 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 to Fight AIDS, Tuberculosis, and Malaria (Global Fund) malaria grants. This document briefly reviews the current status of malaria control policies and interventions in the DRC, describes progress to date, identifies challenges and unmet needs to achieving the targets of the NMCP and PMI, and provides a description of activities that are planned with FY 2016 funding.

PMI support to the DRC falls under the United States Agency for International Development (USAID) Country Development Cooperation Strategy, approved in May 2014, which integrates

investments in the areas of education, stabilization, and conflict mitigation, democracy and governance, health, social protection, economic growth, responsible minerals trade, food security, and humanitarian assistance into three crosscutting Development Objectives.

The proposed FY 2016 PMI budget for the DRC is \$45 million. PMI will support the following intervention areas with these funds:

**Insecticide-treated nets (ITNs):** Under current NMCP guidance, the DRC seeks to achieve high ownership and use of an insecticide-treated net (ITN) among the general population, by ensuring that at least 80% of people at risk of malaria sleep under an ITN. The NMCP Strategic Plan 2016-2020, soon under development, will likely enforce this guidance. The NMCP promotes a three-pronged strategy for distributing ITNs: 1) distribution of free ITNs through large-scale integrated or stand-alone campaigns; 2) routine distribution of free nets to pregnant women during antenatal care (ANC) and to children under five years of age during child care visits, as well as via additional distribution channels including schools and the community; and 3) private sector sales of full-cost and/or subsidized nets.

PMI procured 2.85 million nets in 2014 of which 1.25 million were procured in collaboration with United Nations Children's Fund (UNICEF), to contribute to the mass distribution campaign in the Equateur Province, starting in July 2015. Preliminarily for 2014, 139,831 ITNs have been distributed in 138 PMI-supported health zones, and distribution in the 43 additional health zones has recently begun. Although difficulties in logistics and transportation have hindered routine distribution, PMI has still managed to distribute 567,831 ITNs to ANCs and childcare clinics in 138 health zones since 2011.

PMI-funded studies show the advantages of adding new continuous distribution channels through schools and at the community level in order to maintain necessary coverage levels. While the advantages of adding continuous distribution channels are of great interest to the NMCP and PMI, this activity will not be explored until the gaps for mass distribution campaigns running through 2017 are filled. It is hoped that with additional funding in the near future, piloting continuous distribution through school and community based channels will be feasible. With FY 2016 funding, PMI will procure 4.6 million ITNs for distribution through mass campaigns and routine distributions using ANC services and immunization services.

**Indoor residual spraying (IRS):** Currently, PMI support is being used to conduct standard entomological surveillance including species identification and insecticide resistance monitoring, and to build capacity of key personnel to conduct and manage an entomological surveillance program. With FY 2016 funds, PMI will continue to support surveillance and support capacity building within the NMCP and other national structures to conduct entomological surveillance. The revised NMCP Strategic Plan includes IRS, but the Ministry of Health is not currently implementing this activity. At this time, mining companies carry out IRS in villages that immediately surround mining sites, where their workers reside.

**Malaria in pregnancy (MIP):** Since 86% of women in the DRC attend two or more ANC visits during their pregnancies, the ANC platform serves as an excellent platform on which to build the MIP program. Implementation of IPTp began in the DRC in 2006, but scale-up has been slow and hampered by a weak supply chain. In 2015, PMI's support for IPTp is being scaled-up to 181 health zones in 13 targeted new provinces, where PMI supports: procurement and

distribution of sulfadoxine-pyrimethamine (SP) for IPTp, refresher trainings of health workers on treatment of malaria in pregnancy, and behavior change communication (BCC) to increase demand for and use of IPTp. FY 2016 resources will be used to emphasize refresher training on recent IPTp policy changes and provision of IPTp at every ANC visit after the first trimester. PMI will procure and distribute 3 million SP treatments to meet expected needs in PMI-targeted health zones. PMI will also procure ITNs for distribution in ANC clinics (described in the ITN section) along with ACTs and quinine (described under case management) for use in the treatment of malaria in pregnant women.

**Case management and pharmaceutical system management:** PMI supports supply chain management systems improvements in the DRC to increase adherence to appropriate antimalarial treatment policies. With FY 2016 funding, activities will focus on the scale-up of antimalarial treatment with ACTs, the implementation of rectal artesunate for pre-referral of severe cases and refresher training of healthcare workers in malaria diagnostics using microscopy or a rapid diagnostic test (RDT). In addition, PMI will support the ongoing transition to the use of injectable artesunate for severe malaria. PMI will also continue to expand and improve case management at the community level via the integrated community case management (iCCM) platform. Current efforts have led to considerable improvements in timely access to antimalarial treatment.

With FY 2016 funding, PMI will support 181 health zones in 13 new provinces through the procurement 10.5 million ACT treatments, 300,000 doses of rectal artesunate for pre-referral treatment for cases of severe malaria identified at the community level and 62,000 treatments of injectable artesunate for treatment of severe malaria cases. No RDTs will be procured to account for existing pipeline. Finally, PMI will also support training and supervision of health workers in case management to improve adherence to national guidelines and strengthen Ministry of Health (MoH) case management capacity.

**Health system strengthening and capacity building:** PMI continues to support the health system to deliver the minimum package of malaria services in health facilities, and promote the use of preventive measures and case management services at the community level. The supply chain management and distribution system continues to pose serious challenges to the delivery of services, creating recurrent stockouts and surpluses of malaria commodities, mainly ACTs, RDTs and SP, due to the lack of quality consumption data to quantify commodity needs. Also, despite efforts to improve the leadership of the NMCP and reinvigorate the program staff, the NMCP's capacity to coordinate still needs improvement. During the past 18 months, PMI increased its efforts to strengthen the health system by adding an additional in-country supply chain management partner to facilitate the procurement of commodities and improve distribution of commodities to end users. PMI has also invested in capacity building to improve the logistics management information system (LMIS) and increased access to malaria technical knowledge and practices by health officers and service providers. With FY 2016 funding, PMI will continue to enhance capacity building, particularly the implementation of the recommendations from the assessment of NMCP organizational capabilities, training service providers and supportive supervision in new health zones. Furthermore, PMI will support increased storage capacity of the Regional Distribution Centers' logistic support to improve supply chain responsiveness to the needs of health zones and health facilities.

**Behavior change communication (BCC):** Since its inception in the DRC, PMI has supported BCC activities in targeted health zones to promote use of malaria preventive measures and treatment services. The malaria package of services has been supported with an array of BCC activities including mass media to support the ITN mass distribution campaigns, community radio spots, community mobilization, training of healthcare providers, and interpersonal communication tools. These efforts aim at increasing the use of ACTs as a first-line treatment for malaria, coverage of IPTp for prevention of malaria in pregnancy, the use of ITNs, treatment-seeking behavior, and the sensitization of communities on malaria symptoms and danger signs.

In FY 2016, PMI will continue to implement the national communication strategy in PMI-supported health zones. PMI supported BCC activities aim to raise awareness of health workers, community leaders, community health workers, community groups, school students and other malaria stakeholders on the importance of malaria prevention and treatment. Messages will be integrated into BCC activities throughout the health portfolio to leverage the effectiveness and reach of interventions. PMI will also engage government officials, donors, parliamentarians and the private sector for greater advocacy for increased resources for malaria control, and for greater coordination of BCC activities in the health sector.

**Monitoring and evaluation (M&E):** The DRC has made significant progress in M&E during its first five years as a PMI focus country. PMI support for M&E has included technical assistance and training to national-level NMCP staff through a PMI-funded senior M&E advisor, who was hired in July 2013 and sits at the NMCP to provide direct technical assistance and support at the national level. The PMI strategy is to support M&E focuses on three levels: national, provincial, and the health zone. The USAID Mission, through PMI, was a primary contributor to the 2013 Demographic and Health Survey (DHS), which was completed in early 2014. The final report was disseminated in September 2014.

In addition, while DHIS 2 is being scaled up, the MoH continues to use the malaria specific instruments (Form III) for routine data collection in PMI supported-provinces. PMI also trains provincial level supervisors to collect, compile, and analyze health zone data, as well as supervise targeted health zones in order to improve reporting completeness and timeliness.

With FY 2016 funding, PMI will implement a new Malaria Indicator Survey to provide updated information on coverage and impact of malaria interventions in 2017. The need to strengthen routine health facility surveillance in the DRC has been well documented and PMI will continue to support routine surveillance enhancement. Multiple assessments of data quality and community case management have highlighted serious challenges with routine data collection at the health facility and community levels. In order to address this critical need, PMI undertakes enhanced routine reporting in selected sites. These activities will include supervision, training for monitoring and reporting activities, printing and distribution of standardized registers and data collection forms, and technical assistance to strengthen data use at the health facility level. These enhanced sites will serve as model sites and will be replicated to enhance routine surveillance.

**Operational research (OR):** PMI will not fund any new operational research in this MOP.

## II. STRATEGY

### 1. Introduction

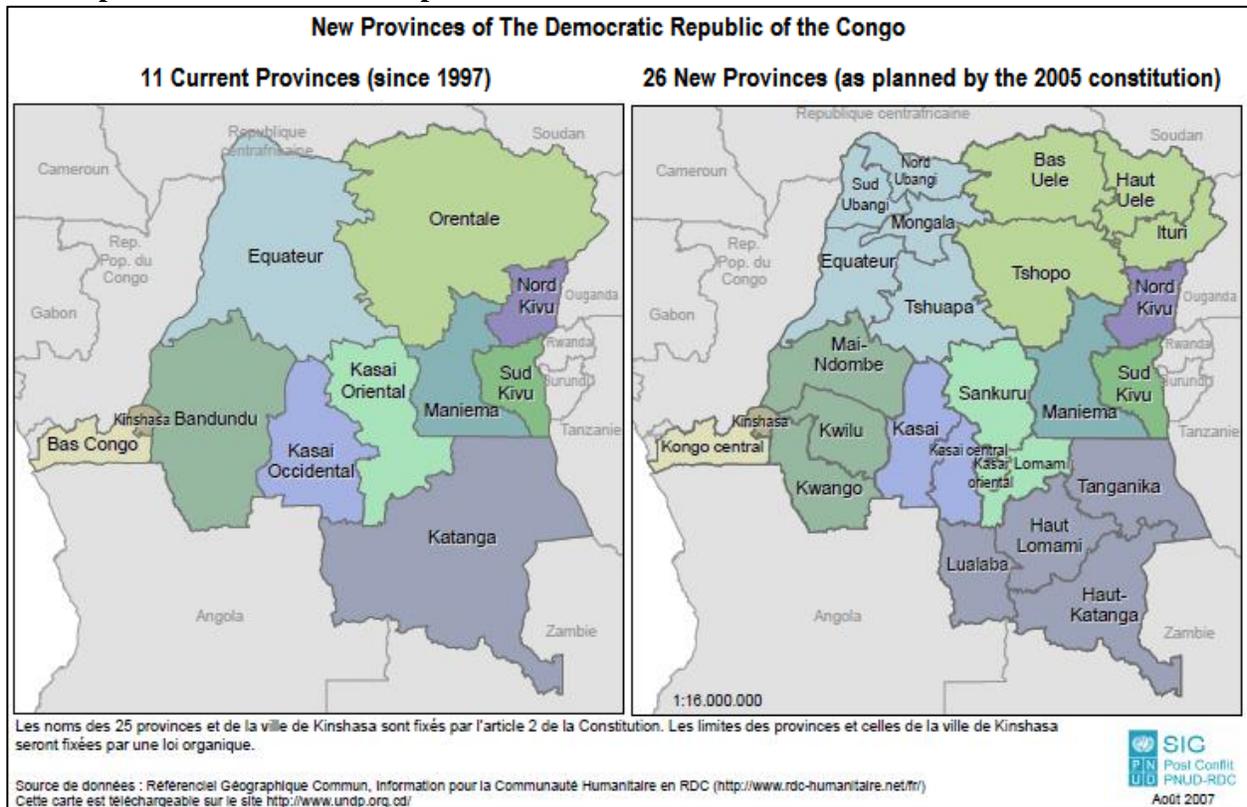
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**Figure 1: Administrative map of the Democratic Republic of the Congo showing both the 11 old provinces and the 26 new provinces**



## 2. Malaria situation in the DRC

The Democratic Republic of the Congo is the second largest country by area in Africa (after Algeria) and the third most populated in Africa. Since the last national census was conducted in 1984, population estimates for the DRC range between roughly 77 million to 92 million people<sup>1</sup>, the majority of whom live in rural areas. It shares borders with nine countries—Congo, Brazzaville, Central African Republic, Sudan, Uganda, Rwanda, Burundi, Tanzania, Zambia, and Angola—the last six of which are also PMI focus countries. The DRC is one of the poorest countries in the world, ranking second to the bottom (186<sup>th</sup> out of 187 countries) in terms of the 2014 human development index; an estimated 80% of the population lives on less than \$1 per day. According to the 2013-14 DHS, the under-five mortality rate is 104/1,000 live births, a significant reduction from the previous rate of 158/1,000 (Multiple Indicator Cluster Survey 2010).

Malaria is reported by the Ministry of Health (MoH) to be the principal cause of morbidity and mortality in the DRC. It is estimated that 97% of the population lives in zones with stable transmission lasting 8 to 12 months per year (at between 300 and 1,000 meters altitude). The highest levels of transmission occur in zones situated 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

<sup>1</sup> Population from 1984 census applying standard growth rate measures estimates the population to be roughly 77 million, whereas measures based on country immunization data provide a population estimate of roughly 92 million.



### 3. Country health system delivery structure and MoH organization

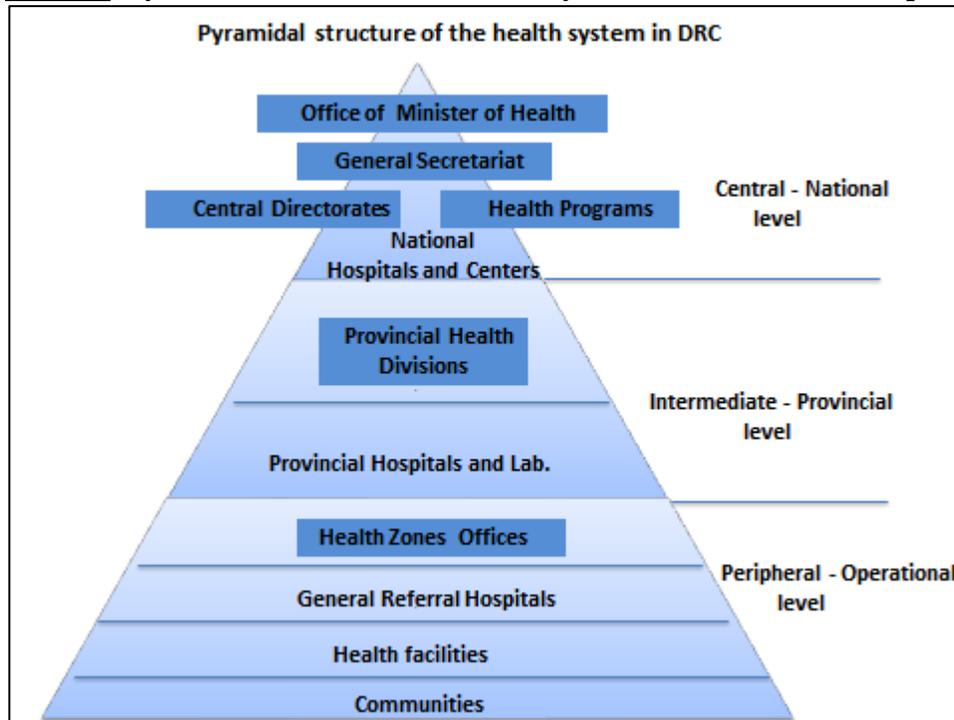
The health system in the DRC has three levels (Figure 3): a central level, which includes the office of the Minister of Health, the Secretary General of the MoH, and the Directorates of national disease-specific programs (HIV/AIDS, TB, malaria, etc.); an intermediate level composed currently of 11 provincial health divisions (upcoming 26); and the peripheral level with 516 health zones with more than 8,000 health centers (approximately 15-20 health centers per health zone). Over half of all health zones are supported by faith-based organizations (FBOs) or other non-governmental organizations (NGOs). The health system also uses two types of unpaid community-based health workers called *relais communautaire*. Community health promoters (*relais communautaire promotionnel*) carry out health promotion and community mobilization activities, while community treatment workers from iCCM sites (called *relais des sites de soins communautaire*) provide treatment for diarrhea and fever, refer malnourished children to health facilities, and distribute a limited package of family planning commodities. Community treatment workers are selected based on a higher level of education and having an established source of remuneration, independent of their health work.

Each of the 516 health zones has a general referral hospital. Faith-based organizations run 34% of these hospitals, which are integrated into the public health system. In most health zones supported by FBOs and NGOs, the MoH pays government workers' salaries, and provides additional salary supplemental incentives, known as *primes*. FBOs and NGOs often provide additional *primes* to health workers as well as providing essential drugs, laboratory equipment, commodities, and in-service training. As of 2009, the MoH estimates that 256 health zones—roughly half—are supported through service delivery contracts with FBOs or NGOs.

The DRC has a tiered essential medicines supply system under the National Essential Medicine Supply Program, consisting of a centralized pharmaceutical procurement system through the nonprofit association (Federation of Essential Medicine Procurement Agencies), combined with a decentralized warehousing and distribution system supported by existing distribution hubs. The United States Government, European Union, and Belgium Corporation are providing significant technical assistance in supply chain management at various levels of the system to build country pharmaceutical management and drugs distribution capacity.

Currently, the ongoing subdivision of the 11 old provinces into 26 new provinces impacts the country health system. The process started with the Ministerial Decree of November 3, 2012 establishing the new 26 Provincial Health Divisions in the Democratic Republic of Congo. The MoH has issued a decree establishing new provincial health departments within each of the 26 new provinces. The MoH is also in the process of restructuring its organization. As currently planned, the NMCP will become a unit of the Disease Control Directorate by the end of 2015.

**Figure 3: Pyramidal structure of the health system in the Democratic Republic of the Congo**



#### **4. National malaria control strategy**

The current National Strategic Plan 2013-2015 provides a clear strategy for malaria control. The National Malaria Control Program has a schedule of activities to be carried out in the last six months of this year, to develop the National Malaria Strategic Plan 2016-2020. This new Plan will guide PMI support for fiscal year 2016. The NMCP does not expect to have major changes in the general strategy. However, if the new strategic plan includes changes in the implementation of activities, these changes will be considered in the reprogramming stage of the FY 2016 Malaria Operational Plan.

The National Malaria Control Program focuses on the following strategies:

- Malaria prevention with an emphasis on individual and collective protection through ITNs, IRS, the treatment of mosquito breeding sites, and the improvement of housing and the environment, as well as prevention of malaria in pregnancy through intermittent preventive treatment for pregnant women.
- Improved case management by promoting diagnostic confirmation of malaria and appropriate treatment at all levels of the health system
- Effective responses to malaria epidemics and public health emergencies by building capacity for early detection and rapid response, strengthening surveillance, and promoting workforce development and staff expertise.
- Improved program management achieved through a reorganization of the National Malaria Control Program, strengthening the skills of staff, and mobilizing funding to have more resources available.
- Increased public awareness and knowledge by emphasizing advocacy; promoting information, education, and communication (IEC), as well as community mobilization

- Appropriate management of commodities and strengthening of the whole supply chain management at all levels by improving quantification of commodities using estimates of consumption and not population; strengthening the knowledge and skills of the staff; and strengthening the quality assurance of drugs and commodities in general
- Access to quality data for decision-making by strengthening monitoring and evaluation efforts, improving epidemiological surveillance, and conducting the operational research needed to address priorities

## 5. Updates in the strategy

The NMCP has updated case management in the current National Plan with the following new policy changes:

- Artemeter-lumefantrim (AL), has been included in the list of drugs to be used for uncomplicated malaria in both public and private sectors.
- Injectable artesunate has been added as the drug of choice for severe cases of malaria and health care providers are being educated on this treatment change. The use of parenteral artesunate as treatment of severe malaria has begun and will be phased in over a three-year period, it is expected to be widely used by 2017 but the country may continue to procure quinine with its own resources.

## 6. Integration, collaboration, and coordination

Many donors are contributing to malaria control efforts in the DRC, the most important of which are:

**The Global Fund:** The major donor for malaria control activities in the DRC is the Global Fund. On November 2014, under the new funding model, the Global Fund approved \$341.5 million (including \$36.6 million of incentive funding) for malaria prevention and control activities in the DRC over a three-year (2015-2017) period. Through this grant, the coverage of health zones will be increased from 219 to 308 health zones. The Global Fund will continue to invest in the following main interventions: 1) ITNs for distribution via mass distribution campaigns and through routine systems; 2) support for diagnostic testing, case management, and IPTp; 3) public awareness efforts; and 4) strengthening of the National Health Information System and M&E through selected sentinel sites. In addition, the Global Fund with the U.K. Department for International Development (DFID) will co-finance the private sector ACT subsidy pilot project in Kinshasa, providing over 12 million ACTs and 1 million RDTs.

**The World Bank:** In early May 2014, the World Bank announced the development of a new grant for the DRC for a total of \$1 billion for all sectors. The health project of the grant *Health System Strengthening for Better Maternal and Child Health Results Project* is a five-year (2015-2019) \$229 million award. The project will focus on outputs through results/performance based financing rather than providing inputs. There is no specific line item for malaria and the size of the malaria component is yet unknown.

**The U.K. Department for International Development:** A 5-year £182 million (~\$275 million) integrated health project in 56 health zones was recently awarded by DFID and contains a significant malaria component. Some of these health zones overlap with the PMI expansion project areas. Additionally, £39.5 million (~\$60 million) will support ongoing ITN distribution

campaigns in two to three old provinces, as well as strengthen NMCP capacity and support the introduction of ACTs in the private sector.

In addition to the above-mentioned major donors, support for malaria control will continue to come from UNICEF, KOICA, the Sweden International Development Agency, and the Canadian International Development Agency, as well as technical assistance from the Clinton Foundation and WHO. Since 2006, the Government of the DRC (GDRC) has provided approximately \$2 million annually to the NMCP for staffing costs, infrastructure, and some commodities. In addition, the GDRC has recently contributed \$500,000 in cost share to the Global Fund. Also the government is implementing an \$80 million phase 1 *Projet d'Equipement des Structures Sanitaires* for construction and equipment of reference hospitals and health centers in targeted underserved areas.

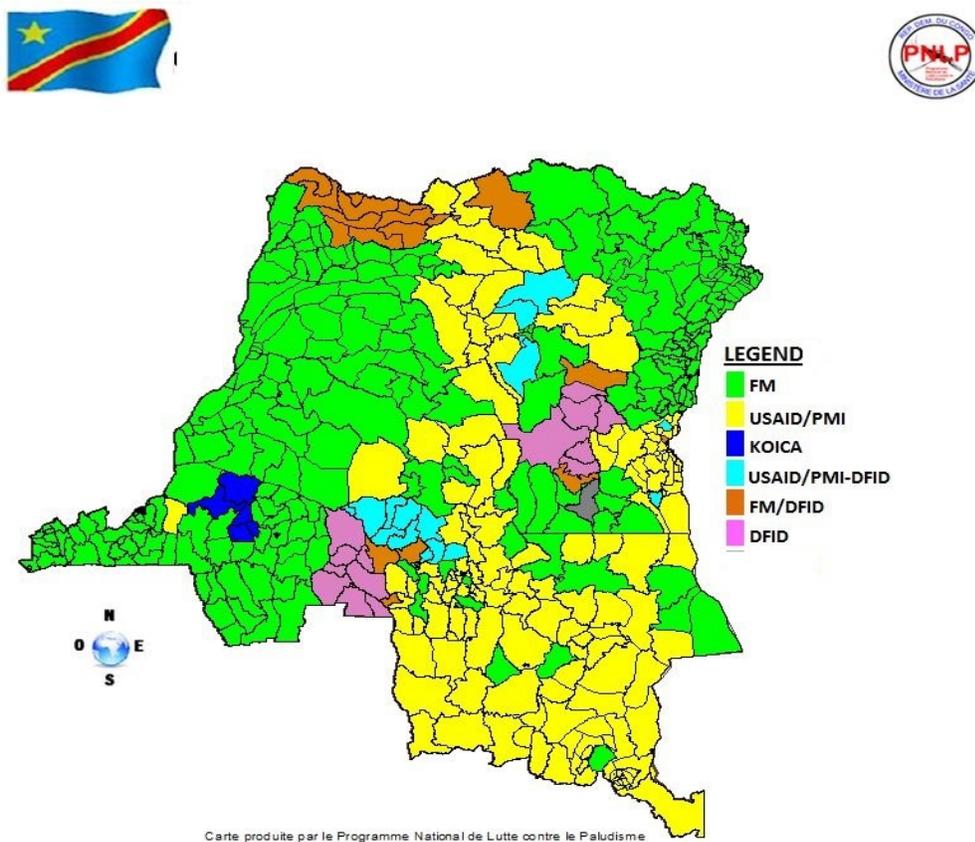
Private sector support comes from Tenke Fungurume Mining Company, which has conducted yearly rounds of IRS since 2008 as a part of their malaria control program in 10 of 18 health areas in the Fungurume health zone, in Katanga Province. This program, which included universal coverage with ITNs, achieved a 60% reduction in incidence of malaria in the workforce and a 56% reduction of malaria prevalence in school age children.

**USG Funding:** The USAID Health Office manages integrated and focused programs in malaria, HIV/AIDS, maternal and child health, family planning and reproductive health, water, sanitation and hygiene, nutrition, and tuberculosis, with an FY 2015 budget of \$156 million. The PMI program is an essential portion of the USAID Health Office, and leverages the different funding streams to have a holistic health system support and response in the DRC. The PEPFAR program anticipates \$62 million funding each year and is undergoing a strategic and geographic pivot to high burden health zones to support and complement country efforts in the three old provinces of Kinshasa, Katanga, and Orientale overlapping with PMI.

Figure 4 displays the geographic coverage of health zones by partner. Currently, the Global Fund is covering 308 health zones, PMI 181, DfID 56, and KOICA 5. There are 34 health zones that have their malaria programs jointly covered from support by two partners (14 health zones by DfID/PMI and 20 health zones by Global Fund/DFID). While the NMCP and partners work hard to ensure that activities are not duplicated, the NMCP is working to harmonize support in these 34 health zones over the next two years and have a single donor responsible for all malaria related activities in each of these health zones. For further efficiency, partner support to health zones are being restructured according to the 26 new provinces, so that one partner will cover a new province in entirety.

PMI will continue advocating for evolving dialogue between donors supporting malaria and the MoH in order to improve the distribution of donors by health zones and reduce the fragmentation of malaria control activities across the new provinces and health zones.

**Figure 4: The Democratic Republic of the Congo malaria donors' distribution map by health zones**



Note:

1. Global fund (GF)= FM (French acronym) covers 308 Health Zones (HZs);
2. PMI = 181 HZs;
3. DFID = 56 HZs;
4. KOICA = 5 HZs

**The DRC has five communication and coordination mechanisms for the health sector:**

- The **Steering Committee for the Coordination of National Health Development Plan** (*Comité National de Pilotage*) is the highest level coordination mechanism established by MoH to oversee the implementation of the next five-year National Health Development Plan (2016-2020).
- The **Donors Group** (also called *Group Inter Bailleurs Santé*) meets monthly to plan and coordinate activities throughout the country, such as the ITN mass distribution campaigns.
- The **Country Coordinating Mechanism (CCM)**, which 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 is currently undergoing restructuring and will merge into the Steering Committee as a Commission in the near future. The CCM does not have any direct role in implementation of malaria activities. The PMI staff and the USAID Global Fund liaison have participated in developing and reviewing country proposal submissions. USAID co-chairs the CCM as the first vice-president, and also provides technical assistance through the Global Fund Liaison Advisor and through the USAID-funded Grant.

- The **Malaria Technical Working Group – Task Force**: This open forum is chaired by the Disease Control Directorate and meets quarterly for coordination and technical discussions at the national level as well as with each province. Meetings also include representatives of civil society and, more recently, the private sector. During the development of the PMI FY 2016 Malaria Operational Plan (MOP), a Task Force meeting was held, the MOP team members participated, and the NMCP presented the agreed-upon activities in the PMI FY 2016 MOP. 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.
- The **PMI Partners’ Meeting**: Initiated in April 2011, NMCP, PMI and partners meet quarterly for program review and coordination.

## 7. PMI goals, objectives, strategic areas, and key indicators

Under the PMI Strategy for 2015-2020, the U.S. Government’s goal is to work with PMI-supported countries and partners to further reduce malaria deaths and substantially decrease malaria morbidity, towards the long-term goal of elimination. Building upon the progress to date in PMI-supported countries, PMI will work with NMCPs and partners to accomplish the following objectives by 2020:

- Reduce malaria mortality by one-third from 2015 levels in PMI-supported countries, achieving a greater than 80% reduction from PMI’s original 2000 baseline levels.
- Reduce malaria morbidity in PMI-supported countries by 40% from 2015 levels.
- Assist at least five PMI-supported countries to meet the World Health Organization’s (WHO) criteria for national or sub-national pre-elimination.<sup>2</sup>

These objectives will be accomplished by emphasizing five core areas of strategic focus:

- Achieving and sustaining scale of proven interventions
- Adapting to changing epidemiology and incorporating new tools
- Improving countries’ capacity to collect and use information
- Mitigating risk against the current malaria control gains
- Building capacity and health systems towards full country ownership

To track progress toward achieving and sustaining scale of proven interventions (area of strategic focus #1), PMI will continue to track the key indicators recommended by the Roll Back Malaria Monitoring and Evaluation Reference Group (referred to in other literature and documents as RBM MERG) as listed below:

- Proportion of households with at least one ITN

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<sup>2</sup> [http://whqlibdoc.who.int/publications/2007/9789241596084\\_eng.pdf](http://whqlibdoc.who.int/publications/2007/9789241596084_eng.pdf)

- Proportion of households with at least one ITN for every two people
- Proportion of children under five years old who slept under an ITN the previous night
- Proportion of pregnant women who slept under an ITN the previous night
- Proportion of households in targeted districts protected by IRS
- Proportion of children under five years old with fever in the last two weeks for whom advice or treatment was sought
- Proportion of children under five with fever in the last two weeks who had a finger or heel stick
- Proportion receiving an ACT among children under five years old with fever in the last two weeks who received any antimalarial drugs
- Proportion of women who received two or more doses of IPTp for malaria during ANC visits during their last pregnancy

## **8. Progress on coverage/impact indicators to date**

The 2013-14 DHS provides the most up-to-date information on the status of malaria prevention and control interventions in the DRC. The NMCP targets for 2015 are also summarized in Table 1 below.

The 2013-14 DHS report shows that the DRC is making significant progress, with very promising trends in malaria indicators and all-cause mortality compared to the 2010 Multiple Indicator Cluster Survey (MICS) results. A few highlights from the report include: 1) the increase in the use of ITNs by children under five, from 38% to 56%; 2) the increase of ITN use by the pregnant women, from 43% to 60%; 3) the increase of households owning at least one ITN, from 51% to 70%; and d) the decrease in malaria prevalence in children under five, with a rate of 34.1% by polymerase chain reaction (PCR), 30.8% obtained by RDTs, and 22.6% obtained through microscopy tests. The under-five mortality decreased from 158/1,000 live births in 2010 to 104/1,000 live births in 2013. However, further gains in ITN access and usage and in uptake of IPTp can be made. Treatment seeking for febrile children <5 years was 55% in the latest DHS, with testing and treatment with an ACT at only 19% each—a key case management and BCC challenge for the DRC to address.

**Table 1: Evolution of Key Malaria Indicators in the DRC from 2007 to 2014**

Indicator	2007 DHS	2010 MICS	2013-14 DHS	NMCP 2015 Targets
% Households with at least one ITN	9%	51%	70%	>80%
% Households with at least one ITN for every two people	N/A	N/A	25%	N/A
% Children under five who slept under an ITN the previous night	6%	38%	56%	>80%
% Pregnant women who slept under an ITN the previous night	7%	43%	60%	>80%
% Households in targeted districts protected by IRS	N/A	N/A	N/A	N/A
% Children under five years old with fever in the last two weeks for whom advice or treatment was sought	N/A	N/A	55%	N/A
% Children under five with fever in the last two weeks who had a finger or heel stick	N/A	N/A	19%	>80%
% Children receiving an ACT among children under five years old with fever in the last two weeks who received any antimalarial drugs	<1%*	N/A	19%	>80%
% Women who received two or more doses of IPTp during their last pregnancy in the last two years	5%	N/A	14%	>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.

## 9. Other relevant evidence on progress

Apart from completing the 2013-14 DHS, no national surveys were conducted during 2014.

The Field Epidemiology and Laboratory Training Program (FELTP) started in the DRC in January 2013. Currently there are 3 active cohorts of FELTP residents, making up 37 residents, nine of whom (3 from each respective cohort) have been assigned to the NMCP and receive further training in malaria.

Among possible malaria projects to be carried out by the FETP students, are:

1. Conduct an evaluation of bed net coverage and factors associate with use and non-use
2. Health care facility evaluation to look at provider practices around malaria case management
3. Assist in an in vivo study of the efficacy of first line antimalarials

4. Evaluate malaria surveillance system (how well timely, and accurate data are collected and transmitted to designated office).
5. Conduct epidemic surveillance, identify malaria outbreak, conduct investigation and coordinate appropriate response.

## **10. Challenges and opportunities**

### *Challenges*

Although the country receives support from various donors to cover the 516 health zones with a minimum package of malaria services, major challenges remain to enable the health system to deliver the level and quality of services needed to ensure full coverage and reduce the malaria burden. Supervision activities have been conducted but will need to be strengthened to ensure more consistent quality in health facilities. Furthermore, while the decentralization process to the 26 new provinces provides certain opportunities, it may also exacerbate existing challenges.

The lack of an effective and reliable supply chain and distribution system is a pervasive challenge for the entire health sector. The lack of adequate roads continues to plague all efforts to deliver health care in hard-to-reach health zones. The regional commodity warehouses, known as *Centrale de Distribution Régionale des médicaments essentiels* (CDRs) do not have adequate transportation to reach these zones, nor do the health zones have reliable means to pick up their drugs supplies from CDRs in a timely manner. In most old provinces, CDRs must solicit private transportation services, with the risk of damaging or diverting the drugs. Despite notable progress with partners' support, the supply chain system cannot meet the objectives set forth in the National Malaria Strategic Plan.

### *Opportunities*

As most CDRs across the DRC function under the statute of not-for-profit associations, they are more amenable to enforcing principles of transparency and accountability. This represents a unique opportunity to promote good governance within the supply chain system, and creates conditions for adequate development of CDRs. Also, the progressive implementation of the decentralization policy, which creates 26 provinces in the place of the current 11, and recent willingness of the government to increase investment in health infrastructure and equipment, provides a good opportunity to increase access to higher quality in both health facilities and the community.

Also, the willingness of the government to put more investment in health infrastructures and equipment provides a good opportunity to increase access to health care infrastructure and better health services at the health facility, as well as at community levels.

### III. OPERATIONAL PLAN

#### 1. Insecticide-treated nets

##### NMCP/PMI objectives

Under current NMCP guidance, the DRC seeks to achieve high ownership and use of ITNs among the general population, by ensuring that at least 80% of persons at risk of malaria sleep under an ITN. The NMCP Strategic Plan 2016-2020, soon under development, will likely maintain this guidance. The NMCP promotes a three-pronged strategy for distributing ITNs: 1) distribution of free ITNs through large-scale integrated or stand-alone campaigns; 2) routine distribution of free nets to pregnant women during ANC clinics, to children less than one year of age at pre-school clinics, and via additional distribution channels including schools and the community; and 3) private sector sales of full-cost and/or subsidized nets.

##### Progress since PMI was launched

Since 2011, the DRC and international partners (DFID, Global Fund, PMI, UNICEF, the World Bank) distributed more than 40 million ITNs in universal coverage campaigns in all provinces, complemented by routine distribution in health facilities. As a result of these efforts, the 2013-14 DHS showed that 70% of households report owning at least one ITN, a substantial increase from 9% and 51%, as reported by the 2007 DHS and 2010 MICS respectively. In addition, 56% of children under five and 60% of pregnant women slept under an ITN the night before the survey, dramatic increases from 6% and 7% in 2007, respectively. Ownership of at least one ITN facilitates net use by children <5 years; in households with an ITN, 76% of children <5 years slept under a net the previous night, compared to 56% in all households. While an improvement, this shows that a quarter of children <5 in households that possess an ITN did not sleep under one the night prior to the survey. Furthermore, net use by children <5 in households that possess an ITN progressively decreases with each year of age, going from a high of 82% in children <1 to a low of 69% for children between 4 and 5 years of age. Furthermore, less than half of the population had access to an ITN—i.e., only 47% of persons present in households could have slept under an ITN, if two persons at most used each ITN. These data illustrate the critical need to increase net ownership to protect all household occupants, and to reinforce communication strategies to ensure that nets are used consistently.

##### Progress during the last 12-18 months

##### **Mass distribution of free ITNs through campaigns**

The campaign strategy for achieving universal coverage—quantified as one ITNs per 1.8 persons, in accordance with WHO guidelines—is to distribute nets via a voucher system as follows: 1) one net to a household of one to two persons, two nets to a family of three to five persons, three to that of six to eight, and four to a household of greater than nine; and 2) one net per bed or sleeping space through mass campaigns for hospitals and boarding schools. In the absence of information on ITN durability, the NMCP recommends replacing nets every three years. The NMCP completed its first cycle of universal coverage campaigns between 2008 and 2013, and has now completed replacement campaigns in four of 11 old provinces. The Kinshasa School of Public Health with PMI and other partners support conducts pre- and post-campaign evaluations, including process and outcome measures. In the past, these evaluations did not

measure all key universal coverage indicators such as ITN access. NMCP is working to standardize the methodology and indicators used by all partners conducting such evaluations.

As the first mass distribution cycle lasted about five years, the NMCP aims to reduce the cycle to two years, though resource constraints may prevent this. Previous campaigns have yielded important lessons for the latest campaign cycle, especially the importance of a strong communication strategy to promote ownership and to identify and quickly dispel rumors. During 2014, PMI procured 2.85 million nets of which 1.25 million nets were procured in collaboration with UNICEF for a campaign in one portion of Equateur Province, with distribution will start in July 2015.

### **Routine distribution of free ITNs**

To sustain ITN coverage post-campaign, the National Strategy includes distribution through routine ANC and pre-school clinics. Each pregnant woman should receive an ITN during her first ANC visit, and each child under one year of age should receive a ITN after completing the vaccination series (generally at nine months with measles vaccination). Although difficulties in logistics and transportation have hindered the routine system, since 2011, PMI has distributed 567,831 ITNs in ANCs and child care clinics in 138 health zones. By late 2014, 139,831 ITNs were distributed in the 138 PMI-supported health zones. Distribution has just started in the 43 additional health zones. Shipments of PMI-procured ITNs that were delayed in FY 2013 have been delivered; the PMI-supported zones now have two to two and half years of stocks for routine distribution. The NMCP, PMI, and Global Fund have developed a Memorandum of Collaboration to manage this big influx, allowing delivery of nets to the health zones that need them regardless of which donor normally supports them, and to help fill campaign needs. This is understood to be an interim measure to manage these ITNs stocks, while continuing efforts to develop a well-coordinated, country-led supply chain management system.

In 2014, PMI supported an evaluation of the existing routine distribution strategies, and assessed the potential for adding complementary distribution channels. The evaluators collected qualitative data in Bas-Congo and Katanga, and used existing distribution data to calculate net coverage rates. For Bas-Congo, the team calculated the efficacy (defined as the number of people, reached by the distribution strategy) of ongoing distribution channels using target population estimates, attendance rates, and ITN distribution data for each channel. The results for 2013 showed the efficacy of LLIN distribution at 72% for the first ANC visit and 85% for the vaccination clinic attendance. Given that these distribution channels cumulatively cover 20% to 30% of ITN needs, the evaluators recommended maintaining the strategy and extending to health zones not yet reached. The evaluators also observed that the logistics systems to provide ITNs through these channels function well from the intermediary (provincial) to peripheral levels, but that procurement delays and transportation problems can disrupt delivery between the port and provincial levels. The assessment also addressed the potential for supporting school- and community-based channels. However, given the challenges of bringing campaign and facility-based distribution approaches to scale in the DRC, PMI will prioritize those existing channels rather than investing in new ones at this time.

### **Social marketing and private sector distribution:**

Currently, ITNs for routine distribution are only provided through the public sector, not in private clinics. The NMCP is exploring whether to provide ITNs to private health facilities to distribute through ANC and pre-school clinics. The NMCP also plans to conduct a feasibility

study to introduce social marketing of full-cost or subsidized nets in the cities of Kinshasa and Lubumbashi. The feasibility and priority of support to this distribution approach will be re-evaluated once the results of this assessment are available.

*Commodity gap analysis*

**Table 2. ITN Gap Analysis Nationwide (as of May 8, 2015, developed by NMCP and partners at the Roll Back Malaria Regional Meeting in Cotonou, Benin)**

Calendar Year	2015	2016	2017
Total Targeted Population campaign <sup>1</sup>	91,777,009	94,530,319	97,366,228
Total Targeted Population routine <sup>2</sup>	74,680,436	76,920,849	79,228,475
<b>Continuous Distribution Needs</b>			
Channel #1: ANC	2,987,217	3,076,384	3,169,139
Channel #2: EPI	2,606,347	2,684,538	2,765,074
Channel #3: School <sup>3</sup>	52,741	54,322	491,951
Channel #4: Community <sup>3</sup>	13,683	14,094	308,067
Estimated Total Need for Continuous	5,659,988	5,829,339	6,734,231
<b>Mass Distribution Needs</b>			
2015-2017 Mass distribution campaign (Provinces targeted for each campaign are listed)	Bandundu, Equateur, East Kasai, North Kivu, South Kivu	Katanga and Kinshasa	Bas-Congo, West Kasai, Maniema, and Orientale
Estimated Total Need for Campaigns	24,426,254	12,526,002	15,276,754
<b>Total Calculated Need: Routine and Campaign</b>	<b>30,086,242</b>	<b>18,355,341</b>	<b>22,010,985</b>
<b>Partner Contributions</b>			
ITNs carried over from previous year	2,979,380	0	0
ITNs from MOH	0	0	0
ITNs from Global Fund New Funding Model	23,139,863	15,159,645	3,029,974
ITNs from DFID	487,631	195,696	221,137
ITNs from KOICA and Other Donors etc.	29,368	0	0
ITNs planned with PMI funding	3,450,000	3,000,000	3,100,000
<b>Total ITNs Available</b>	<b>30,086,242</b>	<b>18,355,341</b>	<b>6,351,111</b>
<b>Total ITN Surplus (Gap)</b>	<b>(0)<sup>4</sup></b>	<b>0</b>	<b>(15,659,874)<sup>5</sup></b>

<sup>1</sup> In the absence of census data, population-based intervention estimates triangulate data from the National Immunization Program, the Ministry of Interior, and the last approved Global Fund concept note.

<sup>2</sup> In the absence of census data, facility-based interventions are based on National Development Plans population projections, with a growth rate of 3%. These are more accurate representations on government health facility utilization.

<sup>3</sup> School- and community-based distribution were planned as pilot interventions in 2015 and 2016 in two health zones with scale up in one new province in 2017

<sup>4</sup> PMI and GF covered the 2.4 million anticipated 2015 gap with carryover nets from previous years.

<sup>5</sup> GF funding to support needs in 2017 totaling \$63,580,347 is not yet confirmed; all major malaria donors are committed to work with the GF to ensure that this support comes to fruition.

### Gap analysis table assumptions

- 1) Population data harmonization<sup>3</sup> between National Health Development Plan (PNDS), Expanded Program on Immunization adjusted data, Ministry of Interior records in 2013 projected with a growth rate of 3%, and considerations in recent approved Global Fund concept note;
- 2) Quantification of mass distribution needs: population from immunization projection in target geographic areas to cover divided by 1.8;
- 3) Routine distribution through ANC and EP distribution based on National Development Plan projections: Estimates that 4% of the population is pregnant and there is 90% coverage of at least one ANC visit among pregnant women; estimates 85% measles immunization coverage among children under five, which account for 3.49% of total population and children under five.
- 4) School and community (out of school youth) based distribution: Using the PMI-supported ITN program assessment recommendations based on modeling and given the elementary school attendance rate of 79% (2013-14 DHS) in the targeted old province, the remaining 21% difference represents youth that do not attend school but can be reached through community based interventions.

### Plans and justification

PMI, and other international donors including Global Fund, will continue to assist the NMCP to achieve and maintain universal coverage of ITNs through mass campaigns every three years, by supporting routine distribution through antenatal and pre-school vaccination clinics. With FY 2016 funding, PMI plans to contribute 1 million nets for mass distribution campaigns scheduled in 2017, and support routine distribution of free nets for ANCs and pre-school clinics in 13 of 26 targeted new provinces.

Given that the Global Fund may reduce its support for mass campaigns, PMI will assist the NMCP to advocate and mobilize resources from other partners to cover the gaps in 2017. In addition, entomological monitoring and susceptibility assays will be carried out to detect changes in the vector population and to ensure ITNs are effective against the local mosquito populations (see IRS section).

### Proposed activities with FY 2016 funding: (\$23,010,000)

- Procure 3.1 million ITNs to contribute to the universal coverage replacement campaign in an old province determined by gap analysis. The funding includes the cost of nets from the manufacturer to the provincial warehouse (\$11,160,000)
- Support the distribution cost of 3.1 million ITNs for universal coverage replacement campaign in an old province determined by gap analysis. The funding includes: planning at all levels of the health system, household registration, training and supervision, and

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<sup>3</sup>Population estimates in the country's 2011-2015 National Health Development Plan are based on a 3% growth rate projection from the last 1984 census. The review of immunization and mass ITN campaigns plans and results have showed that using these population estimates did not appropriately estimate the real need on the ground to reach 100% of the desired population. Under the current approved Global Fund concept note, the country reached a consensus to use two different estimates, one for mass campaign activities and one for facility-based activities.

social mobilization/communications, and pre/post campaign coverage surveys. (\$4,650,000)

- Procure and deliver 1.5 million ITNs from port to provincial warehouses for free distribution through routine antenatal and child health clinics in 181 health zones in 13 provincial health divisions, known as *Division Provinciale de la Santé* (DPS) and six old provinces of Kinshasa, Katanga, South Kivu, East Kasai, West Kasai, and Orientale. (\$5,400,000)
- Support the distribution cost for 1.5 million ITNs for free distribution through routine services in the 181 target health zones. Funding includes transportation from provincial warehouses to distribution points, storage, and supervision, and reflects the high costs of air shipment in country and is estimated at \$1.20 per net. (\$1,800,000)

## **2. Indoor residual spraying**

### NMCP/PMI Objectives

The NMCP's Strategic Plan lists IRS as one of the vector control methods that might be targeted to areas at risk for epidemic malaria, such as areas of high elevation in eastern Katanga, Sud Kivu, Nord Kivu, and near Ituri in Orientale province. However, very little IRS is currently being implemented in the DRC. Because insecticide-based control methods (i.e., ITNs) are being used in the country and knowledge of the malaria vectors remains limited, PMI is supporting entomological monitoring in seven sites in six old provinces to monitor insecticide resistance and to provide information on mosquito densities and behavior.

### Progress since PMI was launched

Indoor residual spraying remains limited in the DRC. Tenke Fungurume Mining conducts IRS as part of their malaria control program targeting approximately 36,000 houses in 9 health areas (the subdivision below the health zone level) in the Fungurume Health Zone in Katanga Province. Other gold mining companies are currently undertaking similar activities in Maniema Province.

In 2012, PMI supported the training of 24 entomologists in mosquito identification, collection techniques, and insecticide susceptibility testing as well as an overview of vector control methods, including personnel from the central level and four old provinces. A second training was carried out in June 2013 with 12 participants.

The Global Fund is supporting insecticide resistance monitoring in 11 sites on a one-time basis in 2014-2015. The sites have been selected in collaboration with the NMCP and PMI and will contribute more data to insecticide resistance monitoring in the DRC.

### Progress during the last 12-18 months

In the past year, the number of entomological monitoring sites was increased from four to seven. These sites were: Kingasani (Kinshasa), Kabondo (Orientale), Tshikaji and Mikalayi (Kasai Occidental), Lodja (Kasai Oriental), and Kapolowe and Fungurume (Katanga). Sites were visited three times during the year and human landing catches and pyrethrum spray catches were conducted at each visit. *Anopheles gambiae s.l.* was the most commonly collected malaria vector

in all sites, with the exception of Lodja, where *Anopheles paludis* was the most commonly collected, although its role in malaria transmission is not well understood. For 2015, two sites were changed at the request of the NMCP, in order to match the entomological monitoring sites with the sentinel sites. The Fungurume site was dropped—although entomologists at Tenke Fungurume Mining continue to monitor insecticide susceptibility—along with Tshikaji, which is very close to Mikalayi. Kalemie (Katanga) and Katana (Sud Kivu) were added.

Insecticide susceptibility tests were conducted to evaluate the susceptibility of *Anopheles gambiae s.l.* to DDT, deltamethrin, bendiocarb, and pirimiphos methyl. As shown below, there was no indication of resistance to pirimiphos- methyl or bendiocarb, but DDT resistance was present in all sites (Table 3).

**Table 3: Corrected mortality (and number tested) of *An. gambiae s.l.* in WHO tube bioassays, 2014.**

Site	Province	Pirimiphos methyl (0.1%)	Bendiocarb (1%)	Deltamethrin (0.05%)	DDT 4%
Kingasani	Kinshasa	100 (100)	100 (100)	99 (100)	17 (100)
Kabondo	Orientale	100 (100)	100 (100)	99 (100)	17 (100)
Lodja	Kasai Oriental	100 (100)	100 (100)	98 (100)	13 (100)
Tshikaji	Kasai Occidental	100 (100)	100 (100)	98 (100)	13 (100)
Mikalayi	Kasai Occidental	100 (100)	100 (100)	99 (100)	42 (100)
Kapolowe	Katanga	100 (80)	100 (80)	99 (80)	45 (80)
Fungurume	Katanga	n/a*	n/a	n/a	n/a

\*Note that insufficient *An. gambiae s.l.* for susceptibility tests were collected during the visit of the entomology team, but entomologists at Tenke Fungurume Mining have reported resistance to deltamethrin, lambda-cyhalothrin, permethrin, DDT, and propoxur, but susceptibility to malathion, bendiocarb, and pirimiphos methyl.

In November 2014, a meeting was organized to share entomological results related to malaria. The all-day meeting was well attended and allowed entomologists to share their work in a public forum.

#### Plan and justification

PMI will not support IRS with FY 2016 funds in the DRC. The rationale behind this decision is that scaling up distribution of ITNs, which will ensure that people are protected by at least one form of vector control, is more feasible than IRS. The lack of in-country capacity, along with the difficulties in moving throughout the country (often requiring air travel), are major barriers to wide-scale spraying and would substantially increase the cost of this intervention. However, the resistance monitoring conducted thus far indicates that there is little resistance to organophosphates or carbamates in the DRC, which means that IRS may be considered by the NMCP for future use if resources are made available. Entomological monitoring will continue in seven sites in FY 2016, although the location of the sites has changed (in 2015) to ensure even coverage of the country, taking into account the activities of other partners. Monitoring in some sites will be increased to better monitor seasonal factors, secondary malaria vectors, and

insecticide resistance. Molecular analysis of samples will allow identification of species and resistance mechanisms.

Proposed activities with FY 2016 funding (\$439,000)

- Continue support for entomological monitoring and insecticide resistance assessments at 7 sentinel sites. (\$400,000)
- Provide entomological and laboratory equipment, supplies, and reagents for insecticide resistance assays and mosquito identification and processing. (\$10,000)
- Provide Centers for Disease Control and Prevention (CDC) technical assistance with entomological monitoring in sentinel sites (2 visits). (\$29,000)

### **3. Malaria in pregnancy**

NMCP/PMI Objectives

The national strategy for prevention and treatment of malaria in pregnancy in the DRC follows the three WHO recommended components: prevention with an ITN; IPTp; and prompt, effective treatment of malaria cases among pregnant women. In 2003, MoH adopted IPTp with SP for prevention of malaria in pregnant women and their newborns. Women attending ANC pay a standard fee for a prenatal card; this fee includes all ANC services, though in the 181 PMI-supported health zones PMI covers the cost of SP and an ITN. PMI does not cover SP nationwide. National guidelines for IPTp were revised in 2013, and now reflect the WHO recommendations for treatment at every ANC visit after the first trimester. The Ministry of Health has updated its training materials and the new recommendations are being rolled out nationally.

The NMCP has identified the following objectives that correspond to the three prongs of the prevention of malaria in pregnancy program:

- Reduce malaria-specific morbidity and mortality by 50% by 2015 as compared to 2000
- At least 80% of people at risk, which includes pregnant women, sleep under an ITN
- At least 80% of pregnant women receive IPTp according to national directives
- At least 80% of all patients with malaria receive diagnosis and treatment conforming to national standards at all levels of the health system

In 2013, the DRC also revised its guidelines for the treatment of malaria, including the treatment of cases in pregnant women. The revised guidelines specify the use of quinine in the first trimester, and the first-line ACT in the second and third trimester. However, the guidelines permit the use of quinine for any trimester when ACTs are not readily available. Furthermore, the DRC's policy on folate is that at ANC, pregnant women should receive one combined ferrous sulphate (150 mg) plus folic acid (0.5 mg) a day throughout pregnancy.

Progress since PMI was launched

The most recent DHS shows some evidence of improvement in the coverage of MIP interventions in the DRC. Use of ANC services remained relatively stable between the 2007 and 2013-14 DHS surveys, with 79% and 86% of women having at least two ANC visits

respectively. However, IPTp coverage still remains low and only improved slightly over that same time period, increasing from 5% in 2007 to 14% in 2013 for women receiving at least two doses of SP at an ANC facility. Over the same period of time, use of bed nets among pregnant women increased substantially, increasing from 7% in 2007 to 60% in 2013. The 2013-14 DHS reported that among households possessing a ITN, 83% of pregnant women reported sleeping under a net. Currently no data are available about adherence to treatment protocols for pregnant women with malaria.

Since the launch of PMI in the DRC in FY 2011, MIP interventions have increased considerably from 68 health zones to 181 in FY 2015. PMI activities have ensured the availability of both ITNs for routine distribution and SP in antenatal clinic, training health providers in PMI-supported health zones on MIP interventions aligned with international standards, and BCC activities to improve knowledge among beneficiaries on the importance of sleeping under an ITN and proper antenatal care during pregnancy. PMI has also provided technical support to the NMCP and the National Reproductive Health Program to revise, update, and coordinate guidelines for IPTp based on international guidelines. However, the MIP program in the DRC has been hampered by many of the same supply chain weaknesses that affect delivery of ACTs and RDTs, in particular, widespread stockouts of SP and difficulties in the distribution of ITNs through routine channels. PMI commissioned an assessment of the routine net distribution systems to recommend ways to improve this channel (see ITN section). Several factors could contribute to the low coverage of IPTp, but supply chain issues have been a primary factor limiting improvements in coverage of this intervention. Supply chain issues remain a key priority and FY 2016 funded activities addressing this issue are described in the pharmaceutical management section of the MOP.

#### *Progress during the last 12-18 months*

PMI supports the implementation of MIP interventions in 181 health zones in five old provinces. In the past 18 months, PMI has procured 1.95 million ITNs for routine distribution through antenatal care and EPI visits and 3 million doses of SP for IPTp. In the same period, 194,331 ITNs were distributed through routine distribution and 1,426,967 doses of SP were distributed to service delivery points. Between 50 and 66% of women in PMI supported health zones received at least two doses of SP during their most recent pregnancy in the past 18 months. These data represent a substantial improvement over the national estimate of 14% as reported by the 2013-14 DHS. Unfortunately, the late delivery and subsequent stockouts of ITNs have prevented targets for routine ITN distribution to be met in PMI-supported health zones. To ensure continued progress in this critical intervention area, 2,210 health professionals were trained in MIP prevention. In addition, efforts to improve case management and treatment across all populations remain a priority and are supported by PMI. Details pertaining to this are covered in the case management and treatment section of the MOP.

**Table 4: SP Gap Analysis for Malaria in Pregnancy**

<b>Calendar Year</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
Total Population	74,680,436	76,920,849	79,228,475
<b>SP Needs</b>			
Total number of pregnant women attending ANC	2,987,217	3,076,834	3,169,139
<b>Total SP Need (in treatments)</b> <i>Total SP Need (in tablets)</i>	<b>8,102,681</b> <i>24,308,044</i>	<b>8,554,406</b> <i>25,663,217</i>	<b>9,031,314</b> <i>27,093,941</i>
<b>Partner Contributions</b>			
SP carried over (deficit) from previous year	1,166,667	0	0
SP from MOH	NA	NA	NA
SP from Global Fund	3,430,622	3,536,723	3,642,825
SP from DFID	396,980	448,587	506,904
SP from KOICA & other Donors	138,000		
SP planned with PMI funding	2,851,667	3,000,000	3,000,000
<b>Total SP Available (in treatments)</b> <i>Total SP Available (in tablets)</i>	<b>7,983,935</b> <i>23,951,805</i>	<b>6,985,311</b> <i>20,955,932</i>	<b>7,149,729</b> <i>21,449,186</i>
<b>Total SP Tablets Gap (in treatments)</b>	<b>(118,746)</b>	<b>(1,569,095)</b>	<b>(1,881,585)</b>

The numbers regarding the amount of SP provided by the Ministry of Health are not currently available. PMI supported health zones needs are accounted for in terms of SP treatments, and PMI will continue to work with NMCP and other donors to reprogram funds and fill any possible gaps

The following assumptions are used by the MOH to quantify needs. MOH assumptions: 1) National Health Development Plan population with a growth rate of 3%; 2) Pregnant women represent 4% population; 3) First antenatal attendance: 90%, second (80%) and third (53%); 4) Coverage of intervention 80%; 5) Service utilization rate 40-50%. However, PMI used different assumptions (see below). PMI is only covering SP needs for its area of coverage.

*Plan and justification*

To improve the scale-up of MIP interventions in 2016, PMI will focus its support to reduce the stockouts for ITN and SP at routine ANC services and support refresher trainings to ensure providers are aware of the revised WHO recommendations regarding IPTp dosing and timing. Although WHO revised its IPTp recommendations in November 2012, and the DRC adopted the revised recommendations in the spring of 2013 and the DRC is still in the process of retraining providers nationwide. PMI will support an integrated cascade-training program on the full package of ANC services, and supervision to providers from the province level down to the health zone and health facility level, to ensure that women receive all the components of MIP services.

PMI will procure 3 million treatments of SP to ensure an adequate supply of SP to the estimated 1.3 million pregnant women in the 181 health zones. With PMI now covering 181 Health Zones, the MIP program will provide SP to 34% of pregnant women in the DRC. PMI will also work on strengthening the supply chain to avoid the stock outs of SP that have hindered this program in the past. Details regarding improvements to the supply chain are covered in the pharmaceutical management section.

PMI will procure 1.5 million ITNs for distribution through routine ANC and EPI services. These nets will cover the need for routine nets in PMI intervention areas, or approximately 1.3 million pregnant women. PMI will also procure RDTs, ACTs, and oral quinine (quantified under the case management section) to ensure that pregnant women have access to appropriate diagnostic and treatment services. BCC activities with both health facility staff and community health workers will include counseling strategies on use of ITN during pregnancy, the importance of early attendance at ANC and obtaining SP at each visit after quickening, and correct diagnosis and treatment of cases of malaria in pregnant women.

*Proposed activities with FY 2016 funding (\$1,200,000)*

- Procure 3 million SP treatments (9 million doses of SP) to meet the needs of 1.3 million pregnant women in the 181 PMI-targeted health zones areas (\$400,000)
- Support the distribution costs for SP, as well as ANC registers, cups, and water filters, from the central warehouses to the health facilities (\$125,000)
- Support training and supervision of health workers in the 181 PMI-supported health zones to implement all three elements of the MIP program: ITN, IPTp, and case management for pregnant women. This training will be done through a cascade approach to extend the reach of the program from the central and provincial levels into the health zones and community health workers. (\$675,000)
- Procure 1.5 million ITNs for distribution through routine ANC and EPI services to ensure that pregnant women and new mothers and babies are protected by ITNs. (costs included in ITN section)
- Procure RDTs, ACTs, and oral quinine for diagnosis and treatment of malaria in pregnant women. (Details and costs for each commodity are described in the case management section).

#### **4. Case Management**

##### **a. Diagnosis and Treatment**

*NMCP/PMI Objectives*

The national strategy for malaria in the DRC states that, by the end of 2015, 80% of patients with malaria will have access to proper malaria testing and treatment. It also states that by the end of 2015, 80% of patients with malaria will have access to proper diagnosis and treatment. The revised malaria strategy and targets for 2020 are currently being developed and will become available in late 2015.

Among the 8,266 health centers in the DRC, NMCP aims to train one to two healthcare workers, per health facility, annually. In each of the 3,038 iCCM sites, the MoH guidance is for two community health workers (CHWs) to be trained annually in malaria, pneumonia, and diarrhea diagnosis and treatment. These annual trainings should include performing and interpreting malaria RDTs. In terms of supervision, the DRC MoH authorities envision that health zones perform monthly supervision visits to health facilities, and health facilities should visit iCCM sites monthly. Health zones cover roughly 15-20 health facilities and the number of health facilities targeted for supervision is set monthly based on issues observed and identified through monthly data review meetings. Partners are requested to provide technical and financial support to conduct these supervisory activities, in conjunction with stock managers to maintain adequate stocks of commodities. Training of health workers in malaria case management, including the use of RDTs, is to be carried out together with that of prevention of malaria in pregnancy. A five-day training course is provided to the health zone management team and the chief nurse and/or deputy of the health center for each health zone.

According to the national malaria policy, all febrile patients should be tested for malaria by either microscopy or RDT. The National Malaria Control Strategy also includes microscopy training of at least one laboratory technician in each health facility that is supposed to have microscopy capacity at each level of the health system: provincial hospitals, general reference hospitals, and other key health centers. As stated in the 2012 national policy, microscopy is expected to be the primary diagnostic procedure in hospitals and larger health centers, called reference health centers, while RDTs are to be used in smaller health facilities and at the community level. It is expected that each provincial hospital (11 in total), each general reference hospital (one in each of the 516 health zones), and approximately 4,000 key health centers (out of 8,266 health centers in total) have a functioning microscopy laboratory. However, currently only 6 of the 11 old provinces and 393 of the 516 general reference hospitals have functioning microscopes.

Individual donors procure laboratory diagnostic equipment and supplies according to the needs of the health zones they support, however, donors rarely fund routine microscope maintenance. At health facilities and the community level, the cost for RDT testing is included in the service package fee paid by patients, but microscopy testing usually requires a specific fee to be paid by patients. PMI provides technical assistance directly to the national and provincial public health officers working in malaria diagnosis, in addition to supporting the staff at *Institut National de Recherche Bio-Médicale* (INRB). In PMI-supported health zones, training in RDT use has been integrated into training modules on malaria in pregnancy and malaria case management, while training in microscopy is focused on laboratories staff.

### *Progress since PMI was launched*

PMI and other NMCP partners support training and supervision for case management through financial and technical assistance. The NMCP implements the cascade trainings, starting with provincial level staff. Since 2013, the MoH has directed all trainings of healthcare workers to cover all disease programs and conducted according to pre-determined schedules; stand-alone malaria trainings would be discouraged. However, the implementation of this guidance has been somewhat slow, and malaria trainings are still commonly conducted as stand-alone activities. According to routine national data, the proportion of suspected malaria cases tested, either by microscopy or RDT, increased from 40% in 2010 to 76% in 2011, and up to 90% in 2013. The

reason for the discrepancy between the current status of the scale up of RDT performance, and this 90% in 2013, is that these percentages are obtained through the current health management information system, which in many cases duplicates the number of tests, due to the fact that one patient might have both, a RDT and a microscopy test. Even though the percentage of tests performed has increased, an accurate percentage of testing is at this moment very difficult to obtain, and varies according to different provinces.

Under the leadership of MoH and with the support of USAID, the DRC began implementing iCCM of uncomplicated malaria, pneumonia, diarrhea, and malnutrition in limited areas in December 2005. Currently, there are 3,038 iCCM sites in the DRC, covering an estimated population of over 7 million people. In 2010, the NMCP approved case management with RDTs and ACTs at the community level, with implementation beginning in 2012. At present, all 1,151 PMI-supported iCCM sites have CHWs that have been trained and regularly use RDTs and ACTs.

#### Progress during the last 12-18 months

PMI and its partners continue to collaborate to ensure that technical content related to RDTs is included in training materials provided to healthcare workers, and to bolster diagnostic capacity. In 2014, PMI supported the basic malaria diagnostics refresher training for nine national and provincial laboratory technicians. Additionally, PMI supported the basic malaria diagnostics refresher training for 102 laboratory technicians from provincial and sub-provincial levels of the five PMI supported old provinces. These technicians included 16 microscopists in advanced malaria diagnosis to prepare them for WHO-level accreditation. In turn, they conducted cascade trainings on malaria diagnostics and quality control and assurance programs. Finally, PMI also supported the training of 3,256 health facility workers and 856 CHWs in malaria diagnostics with a focus on RDT.

In 2014, PMI supported training of 4,121 healthcare workers in malaria laboratory diagnostics (RDTs or microscopy). Of those, 3,256 worked in the 2,509 PMI-supported health facilities were health facility workers and 865 were community-level health workers in the 607 PMI-supported iCCM sites (out of 1,115 total iCCM USAID and PMI-supported sites). PMI has also supported the production and distribution of bench aids on malaria diagnosis and standard operating procedure guidelines for national and provincial laboratory trainings.

During 2014, a total of 3,811 health workers were trained in the management of uncomplicated malaria with artemisinin-based combination therapy (ACTs). Of these, the majority (2,963) were health facility health workers, while 848 were CHWs. In addition, PMI-support ensured that health zones received at least one supervisory visit from provincial authorities in 2014, each quarter.

#### Commodity Gap Analysis

According to the revised NMCP gap analysis dated August 14, 2015, 6 of the 11 provincial hospitals (in old provinces) and 393 of the 516 reference health centers have functioning microscopy laboratories. In addition, the gap analysis showed that in the DRC approximately 24 million, 30 million, and 46 million RDTs are needed in calendar years 2015, 2016, and 2017, respectively, to cover RDT needs in the country (Table 5). Those calculations took into account public health system coverage; pilot introduction in the private sector; estimates of the number of

febrile episodes per year, calculated based on morbidity data; and expected percentage of malaria cases that will be confirmed by RDT or microscopy (see detailed assumptions on the estimates in the Case Management section below). The calculations for the population are described in the ITN section of this document. The gap analysis plan did not stratify needs by provinces, but considering that 46 million RDTs are needed in 2017 to cover the country's total projected population of 79.2 million people and that PMI's health zones serve approximately 34.5% of the country, a total of 16 million RDTs would be needed for the PMI-supported health zones. However, due to a surplus from previous years, 10 million are being procured. Although PMI is responsible to provide commodities in the health zones it supports, coordination with NMCP, Global Fund and other partners will enable the country to redistribute surplus stocks regardless of the donor supplying.

**Table 5: RDT needs in DRC nationwide (2015-2017)**

Calendar Year	2015	2016	2017
<b>RDT Needs</b>			
Target population at risk for malaria	74,680,436	76,920,849	79,228,475
Total projected number of fever	111,520,295	114,865,904	118,311,881
Target number of fever suspected malaria cases	45,723,321	52,838,316	60,339,059
Percent of fever cases tested with RDT	80%	85%	90%
Positivity rate of RDT	61%	61%	61%
Decrease in fever incidence with scale up of interventions	15%	15%	15%
<b>Total RDT Needs</b>	<b>23,821,319</b>	<b>30,085,659</b>	<b>46,359,862</b>
<b>Partner Contributions</b>			
RDTs carried over from previous year		12,208,557	19,341,917
RDTs from MOH			
RDTs from Global Fund	28,239,021	23,836,489	24,551,583
RDTs from DfID-Public sector	378,863	2,779,627	1,893,463
RDTs from DfID-Private Sector	131,460	332,904	338,440
RDTs from KOICA	10,532		
RDTs from Project RaCE	270,000	270,000	270,000
RDTs planned with PMI funding	7,000,000	10,000,000	0
<b>Total RDTs Available</b>	<b>36,029,876</b>	<b>49,427,577</b>	<b>46,395,403</b>
<b>Total RDT Surplus</b>	<b>12,208,557</b>	<b>19,341,917</b>	<b>35,541</b>

Source: Adaptation from country gap analysis provided by NMCP as of August 14, 2015

Ongoing coordination with NMCP, PMI, Global Fund, DfID and other partners to adjust future orders based on pipeline and consumption; DFID contribution includes private sector pilot distribution as follows: 2015 = 131,460; 2016 = 332,904; 2017 = 338,440

Table 6 shows the estimated national needs for ACTs in the DRC for both the public sector and the three-year pilot in the private sector, according to the most recent gap analysis released by NMCP on August 14, 2015. These calculations were presented as part of the DRC's strategic

plan and were revised by the NMCP and its partners following a recent consensus meeting in Kampala with RBM. The number of febrile episodes in the different age groups, utilization rates of public sector facilities, the impact of prevention strategies, and expected positivity rate of malaria tests were all considered in these calculations. It is unclear to what extent these estimates reflect the real needs in the country and the absorptive capacity of the health system. In addition, the estimates do account for number of ACT treatments needed to ‘fill’ the drug supply chain and buffer stocks in 2017, and the estimated pipeline.

**Table 6: ACTs needs in DRC nationwide (2015-2017)**

Calendar Year	2015	2016	2017
<b>ACT Needs</b>			
Target population at risk for malaria	74,680,436	76,920,849	79,228,475
Target number of fever suspected malaria cases	45,723,321	52,838,316	60,339,059
Percent of fever cases tested with RDT	80%	85%	90%
Positivity rate of RDT	61%	61%	61%
Reduction in ACT consumption due to scale up of preventive interventions	30%	30%	30%
Target number of projected malaria cases	24,068,756	27,240,794	30,453,123
<b>Total ACT Needs</b>	<b>27,156,612</b>	<b>30,764,982</b>	<b>42,105,177</b>
<b>Partner Contributions</b>			
ACTs carried over (deficit) from previous year	1,500,000	0	0
ACTs from MOH			
ACTs from Global Fund	14,401,901	12,156,609	12,521,302
ACTs from DfID - Public sector	169,439	191,466	216,357
ACTs from DfID - Private sector	1,900,000	4,180,000	6,916,000
ACTs from KOICA	190,869		
ACTs from Project RaCE	210,000	210,000	210,000
ACTs planned with PMI funding	5,200,000	7,500,000	10,500,000
<b>Total ACTs Available</b>	<b>23,572,209</b>	<b>24,238,075</b>	<b>30,363,659</b>
<b>Total ACTs (Gap)</b>	<b>(3,584,403)</b>	<b>(6,526,907)</b>	<b>(11,741,518)</b>

Source: Adaptation from country gap analysis provided by NMCP as of August 14, 2015

### Assumptions

1. National Health Development Plan population with a growth rate of 3%
2. Proportion of population by age groups: 0–11 months = 3.49%; 1–5 years = 15.41%; 7–13 years = 29.1%; >13 years = 52%.
3. Estimated public health facility utilization rate = 80% (2015) to 85% (2017).
4. Average number of febrile episodes per year for the 0–11 month age group = 1; 1 to 5 year age group = 3; 6 to 13 year age group = 2; >13 year age group = 0.5.

5. Laboratory testing positivity rate: 51%.
6. 20% need decrease as result in scaling up prevention intervention
7. Available pipeline of drugs.
8. Utilization of service: 41% in 2015 with 5% increment each year.
9. 15% drop in incidence each year due to scale up of preventive interventions
10. Diagnostic coverage 80% with 5% increment each year
11. RDTs coverage 76% with a 2% increment each year
12. RDTs needs include a 25% buffer stock in 2017 explaining the increase in
13. Decrease ACT consumption by 30% due to scale up of preventive interventions
14. Positivity rate of RDTs = 61%
15. 25% buffer stock for ACT in 2017 in the amount of 7,613,281 for outbreak response
16. ACTs needs include as well, about 2 million in 2015, doubling incrementally second year and, tripling the third year as pilot introduction in private sector

The NMCP and partners have reviewed the assumptions used in this quantification during the recent Roll Back Malaria regional conference in Cotonou May 4-9, 2015 with subsequent meetings in Kampala with RBM in August 2015. Given the lack of precision on population estimates and associated estimates of need, previous experience on the use of ACTs and RDTs, and the large quantities currently in the pipeline, PMI decided to plan conservatively in regards to procurements in order to avoid overstocks and expiration of goods. If necessary, an adjustment can be made through reprogramming when more accurate consumption data is available. PMI, Global Fund, WHO, and NMCP are working to amend the RDT specification from combination to single band test in the next 12 months.

### Plans and justification

Providing effective antimalarial treatment in the DRC is one of the biggest challenges for PMI. The low uptake of ACTs in the DRC is likely attributed to poor utilization of the public health system, poor acceptability of AS-AQ by both health workers and patients, and the financial incentive to use antimalarials available for purchase. In addition, anecdotal observations from field visits indicate that health workers may not adhere to RDT results in treatment decisions, not only because of reluctance of some to trust the results, but due to the incentive to have patients pay for microscopy. Some patients may prefer to avoid health facilities and seek treatment from private pharmacies, in order not to pay for the tests. To further understand issues around the provision of care, a health facility evaluation is planned for late 2015.

Given the low rate of health facility use, the expansion of CHW coverage is ongoing, and these workers are trained in comprehensive malaria control and case management. Partners should be encouraged to develop strategies for both community worker training and supervision. PMI will continue to support the scale-up of iCCM in the 181 supported health zones. These iCCM sites will provide RDTs and ACTs for uncomplicated cases of malaria as well as rectal artesunate for pre-referral treatments of severe malaria cases.

Finally, the NMCP and INRB understand the critical need to perform supervisory visits and activities related to quality control of diagnostic, especially microscopy at the provincial and health facility levels. Quality control and quality assurance activities are ongoing with participation of PMI and other partners working in malaria control in the DRC. It is envisioned that a panel of standard malaria slides with different species and parasitemia will be used to

evaluate and train microscopists at the different levels of the healthcare system. In addition, a subset of positive and negative slides from diagnostic laboratories will be sent for quality control at their respective upper levels.

*Proposed activities with FY 2016 funding (\$11,075,000)*

In FY 2016, PMI will support the strengthening of malaria diagnosis (both microscopy and RDTs) in health facilities and iCCMs in the 181 health zones supported by PMI. Due to the surplus of RDTs being procured by the Global Fund and other partners, PMI is not planning to procure RDTs with FY 16 funding. The following activities are planned:

- Supervise and implement a system for quality control and quality assurance of malaria diagnosis, assist in preparation for accreditation of laboratory technicians and provide equipment. This activity will build on the ongoing support by PMI to maintain high-quality microscopy at national and provincial levels. Funding will also allow for the training of trainers at the different levels of the healthcare system. (\$500,000)
- Procure microscopes and microscopy kits. PMI will purchase microscopes (at approximately \$2,500 each) and microscopy kits and reagents to run 1,000 tests, to support activities in PMI-supported provinces both at provincial and health facility levels. Exact quantities of these commodities will depend on assessments by PMI implementers; a maximum of 60 microscopes will be purchased and distributed. (\$150,000)
- Provide training and supervision to laboratory staff and health workers performing malaria RDTs and also cover distribution costs of RDTs from the provincial warehouses to the 181 PMI-supported health zones. (\$1,150,000)
- Procure approximately 10.5 million co-formulated ACT treatments for case management of uncomplicated malaria in PMI-supported health zones. ACT usage will be closely monitored to adjust procurement in case of unexpected drug needs or overstocks. PMI will also closely monitor the possible expansion of AL as alternative first-line ACT and consider adjusting purchase orders accordingly. (\$5,755,000)
- Procure 62,000 treatments of parenteral artesunate for management of severe malaria. For planning purposes, a treatment was estimated at 300 mg of artesunate (5 ampules), which is sufficient for a 3-day treatment of a 30-kg child (2.4 mg/kg per doses, 4 doses). Final order adjustments will be made based on real needs at time of procurement. (\$900,000)
- Procure approximately 300,000 doses of rectal artesunate to cover the national need for pre-referral treatment of malaria. For estimation purposes, a dose is estimated as 100 mg of artesunate, enough for a patient of 10–20 kg. Pre-qualification will be a prerequisite for PMI procuring rectal artesunate. (\$50,000)
- Procure 277,000 doses of oral quinine for uncomplicated cases of malaria with intolerance to AS-AQ for cases of treatment failure and for use by pregnant women. For estimation purposes, a treatment is a total course (seven days) for a patient of 20 kg. (\$350,000)
- Support in-service training and supervision of facility health workers responsible for the management of both severe and uncomplicated malaria in 181 health zones. This is expected to include a total of 18 provincial laboratory technicians (or three per focus province), 362 health zone laboratory technicians (or two per each 181 health zones), and 3,620 clinicians and CHWs (two health worker per health facility in 181 health zones with 10 health facilities each). (\$1,400,000 total)
- Support in-service training and supervision of community health workers responsible for the management of uncomplicated malaria at the community level. This is expected to

reach a minimum of 500 head nurses and 2,000 community health workers (one or two community health workers per iCCM site). (\$800,000 total)

- Provide two technical assistance visits by CDC/Atlanta staff to support activities related to case management and quality assurance/control, in particular, to assist with issues related to training of health providers and community case management of malaria. (\$20,000)

## **b. Pharmaceutical Management**

### NMCP/PMI Objectives

In 2005, MOH adopted AS-AQ for the treatment of uncomplicated malaria and made oral quinine the recommended treatment for patients who failed to respond or had intolerance to AS-AQ. For pregnant women, quinine is the antimalarial of choice in the first trimester of pregnancy while AS-AQ is recommended for the second and third trimesters. Severe cases are managed with parenteral quinine; rectal artesunate is recommended for pre-referral treatment of severe cases. In 2012, the MOH approved the inclusion of AL as an alternative first-line treatment to AS-AQ, and parenteral artesunate as the treatment of choice for severe malaria. The use of parenteral artesunate as treatment for severe malaria was to be phased in over a three-year period beginning in 2015. Since July 2014, PMI has only procured AS-AQ as a first-line line ACT for the DRC, pending the national rollout of AL. A National Supply Chain Strategic Plan is currently under development and should be available by the end of 2015.

### Progress since PMI was launched

PMI has been supporting the strengthening of the pharmaceutical system at all levels, through one an implementing partner. Systems involving quantification, identification of drugs, quality, and distribution have been improved. The supply chain management system is now undergoing improvement and there have been modifications to improve the delivery of the drugs, as well as the storage and distribution.

### Progress during the last 12-18 months

In early 2014, a PMI implementing partner opened an office in the DRC to support drug forecasting, customs clearance, and distribution of drugs to the provincial warehouses. This work has significantly facilitated support for pharmaceutical management and distribution of both malaria specific and iCCM commodities at the health facility and community levels. In addition, PMI supported the refurbishment of a provincial warehouse in Kasai-Oriental old province.

During 2014, a total of 3,811 health workers were trained in the management of uncomplicated malaria with artemisinin-based combination therapy (ACTs). Of these, the majority (2,963) were health facility health workers, while 848 were CHWs. In addition, PMI support ensured that health zones received at least one supervisory visit from provincial authorities in 2014, each quarter.

### Plans and justification

Providing effective antimalarial treatment in the DRC is a major challenge for PMI and the NMCP. In order to ensure timely and appropriate treatment, it is essential that all commodities be available at all service points. Improving the supply chain of malaria commodities is a major focus of PMI, particularly as iCCM is being scaled up and commodities now need to be routinely available at the CHW level.

### Proposed activities with FY 2016 funding (\$2,100,000)

With FY 2016 funding, PMI will support the following activities in the 181 targeted health zones:

- Support distribution of malaria case management commodities (RDTs and medicines) from provincial warehouses to health zones and health facilities. This is expected to provide support to 181 health zones. (\$700,000 total)
- Strengthen the supply chain management for malaria commodities, including support to forecasting ACTs (AS-AQ and/or AL), SP, and RDT needs; drug inventory management; availability of warehouses at national levels; targeted technical assistance to CDRs; and forecasting and management of stocks. This activity will contribute to ongoing support for improving the performance of the supply chain management, mainly monitoring of stock conditions at different levels of the supply chain system (warehousing and at health facilities), regular monitoring of stocks and usage rates, monitoring of storage conditions (temperature, humidity), and finally tracking of shipments of PMI-procured commodities from CDRs, to health zone bureaus, and health facilities. (\$900,000).
- Support an in-country office for PMI implementers involved in the delivery of malaria commodities to improve management of shipments, forecasting, obtaining waivers for importation, transportation, etc. (\$500,000)

## **5. Health system strengthening and capacity building**

PMI supports a broad array of health system strengthening activities which cut across intervention areas, such as training of health workers, supply chain management and health information systems strengthening, drug quality monitoring, and NCMP capacity building.

### NMCP/PMI objectives

To implement the recommendations of the NMCP organizational assessment conducted in November 2014, a strategic plan to strengthen staff capacity at all levels is being developed. The final results will also be discussed with all partners in malaria control in the DRC.

In addition, the NMCP and PMI objectives align with the GDRC's efforts to conduct reforms of the health system geared toward increasing Congolese's access to healthcare by expanding the number of provinces thus decentralizing the administrative infrastructure including the health system infrastructure. In support of this effort, PMI's objectives target support at the provincial levels and aim to expand support to the new provinces.

### Progress since PMI was launched

PMI continues to expand the provision of the minimum malaria package of services to under-served health zones. Since FY 2015, PMI's coverage has expanded to a total of 181 health zones. PMI resources have been extensively invested in supporting various training activities designed to assist the NMCP and the DRC health system achieve its overarching goal of reducing mortality and morbidity due to malaria. In addition to training and supervising health workers at the health facility and community levels, PMI has also supported many malaria-related training activities to build capacity and expertise in critical areas. PMI helped build entomologic capacity by supporting initial and refresh field entomology trainings and implementation of entomology monitoring system with the National Reference Laboratory. PMI has helped build epidemiology and surveillance capacity within the MoH and specifically the NMCP by supporting the Field Epidemiology and Laboratory Training Program (FELTP), and providing mentorship and technical assistance to trainees on malaria prevention and control. PMI provides training for national and provincial health workers and community health care providers on malaria in pregnancy, malariology, case management, and behavior change communication.

### Progress during the last 12-18 months

During the past 18 months, PMI has continued its support to strengthening of the NMCP's management capacity through assigning a monitoring and evaluation specialist to the program at the central level, and embedding five PMI advisors at the provincial level. Both cadres of advisors have helped build national- and provincial-level capacity to plan and implement all aspects of the malaria control program, with special emphasis on monitoring and evaluation and reporting. The PMI-sponsored M&E specialist at the central level helped revive the M&E Working Group, improve gap analyses for commodities and funding, produce a high-quality 2013 NMCP annual report, and prepare the Global Fund concept note. This support has provided more visibility to the monitoring and evaluation unit of the program and will contribute to reinforce the coordination of data collection, analysis, processing and use for decision-making. The provincial PMI advisors play a similar role, though focused more on monitoring the completeness and timeliness of data reporting from health zones along with building general provincial-level malaria control capacity. To improve the NMCP's capacity to coordinate programs and increase information sharing among malaria stakeholders, PMI supported malaria task force quarterly meetings planned at the national level, and 85% of those planned at the provincial level (17/20).

To enable the NMCP to better meet the challenge of coordinating the increasing flow of funds from multiple donors for malaria control, PMI funded an assessment of the organizational capabilities of the NMCP, which was conducted in 2014 by an external consulting firm. The final report was released in May 2015 and most important recommendations will be jointly supported by PMI, DFID, and the Global Fund and integrated in the next country 2016-2020 national strategic plan.

### Plans and justification

Placing an emphasis on building technical leadership and managerial capacity at all levels of the health system is important for successful implementation, monitoring, and evaluation of the malaria control program. Ultimately, the return on investments in capacity building will be seen in their impact on child mortality in the DRC. PMI will continue its strong focus on building technical and managerial capacity for malaria prevention and control at all levels of the health

system. More specifically, PMI will continue to support the NMCP to improve the quality, completeness, and timeliness of malaria-specific data reporting from health facilities. Furthermore, PMI will strengthen staff skills in data analysis, interpretation, and reporting of findings, both from routine supervision and other data sources such as health management information system (HMIS), DHS, and malaria indicator survey (MIS). Emphasis will be placed on capacity building in key areas identified by the organizational assessment such as entomology, supply chain management, and monitoring and evaluation. PMI plans to support two NMCP staff and one entomologist from INRB to attend a key malaria scientific conference, such as the American Society of Tropical Medicine and Hygiene Annual Conference in the USA. In addition, PMI plans to support two additional staff members from NMCP to attend an updated course that addresses critical technical needs identified by PMI and the NMCP; and/or a site visit to observe activities and explore new approaches to supply chain management, community case management, monitoring and evaluation and other technical areas. This activity will be carried out through PMI's expansion partner.

To enable the NMCP to take responsibility and improve coordination of the malaria program in the current context of decentralization, PMI will support the implementation of the NMCP organizational capacity assessment recommendations released in May 2015. Like other old provinces, PMI-supported old provinces are slated to undergo decentralization reform whereby each old province will be divided into three or four new provinces. Thus, PMI's support will reflect this reform and more investment will be needed to support the new provinces. PMI will continue emphasizing technical training and technical assistance in the focused provinces by building the capacity of provincial malaria control team, within the new regional health offices. Other USAID funding streams are currently supporting the decentralization process through several key activities with which PMI programs will coordinate.

Training and technical assistance will mainly target strategic planning and coordination of activities, entomology, and the supply chain management system in order to improve commodity forecasting, quantification, and distribution and avoid recurrent stockouts of drugs. Support to the supply chain will include increasing storage and logistics capacity and improving storage conditions of regional CDRs.

During the past three years, PMI has seconded provincial level malaria advisors in each of the six supported provinces. With the new decentralization policy currently under implementation, there is now a need for new provincial advisors for the new provinces. More specifically, some hard-to-reach provinces will need a malaria advisor to be posted at the Malaria Coordination Unit in the newly formed Regional Health Office (DPS). To assist the new DPSs in PMI-supported provinces meet these gaps, the MOP recommends that five additional advisors be recruited and posted to the four newly created provinces

The Field Epidemiology and Laboratory Training Program started in the DRC in January 2013. Currently there are three active cohorts of FELTP residents, making up 37 residents, nine of whom (three from each respective cohort) have been assigned to the NMCP and receive further training in malaria. They were involved in fever outbreak investigations and response including the recent Ebola outbreak.

Proposed activities with FY 2016 funding: (\$1,275,000)

PMI will support the following health system strengthening and capacity building efforts. The selected capacity building activities will complement other donors' support such as the Global Fund and DFID's plan to provide a package of trainings and team building to the NMCP.

(1) NMCP capacity building

- Continue support to the country coordination efforts as well as national and provincial malaria task force teams, to help address the NMCP's objective to improve coordination of government, donor, and civil society malaria program activities and resources. This activity includes support to Task Force meetings at the national as well as at the provincial level and annual program review. (\$150,000)
- Support national and provincial-level staff training on communication and monitoring and evaluation. This activity consists of supporting in-country training sessions for national and provincial levels staff on behavior change communication and in monitoring evaluation. The two training activities which are also organized at the international level will enable attendance of an increased number of participants. (\$150,000)
- Support two NMCP staff and one entomologist from INRB to attend a key malaria scientific conference, such as the American Society of Tropical Medicine and Hygiene Annual Conference in the USA. Support two staff members from NMCP to attend an updated course that addresses critical technical needs identified by PMI and the NMCP; and/or a site visit to observe activities and explore new approaches to supply chain management, community case management, monitoring and evaluation, and other technical areas. (\$50,000)
- Support local entomology training for approximately four technicians. (\$100,000)
- Support the costs for nine "new province"-based malaria advisors. An increase by four to progressively support country decentralization efforts and coordination. Funding will include support of semi-annual meetings of advisors with the national NMCP and PMI/DRC staff to debrief on their programs, receive continuing education, and learn best practices from other provincial staff. (\$675,000 total)
- Support Field Epidemiology and Laboratory Training Program (FELTP). This activity will focus on building the country's capacity in malaria epidemiology, particularly early detection, management and response plan for malaria epidemics with new support for two trainees supported by PMI funding. (\$150,000)

**Table 7: Health Systems Strengthening Activities**

<b>HSS Building Block</b>	<b>Technical Area</b>	<b>Description of Activity</b>
<b>Health Services</b>	Case Management Diagnosis	Improve, through training and supervision, QA systems to monitor the quality of laboratory diagnostic services. Supervise and implement a system for quality control and quality assurance of malaria diagnosis, assist in preparation for accreditation of laboratory technicians and provide equipment. Provide training and supervision to laboratory staff and health workers performing malaria RDTs
<b>Health Workforce</b>	Health Systems Strengthening	Build, through training and technical assistance, host country managerial and leadership capacity for effective malaria control Support in-service training and supervision of facility health workers responsible for the management of both severe and uncomplicated malaria Support nine provincial malaria advisors embedded in government offices Support in-service training and supervision of community health workers responsible for the management of uncomplicated malaria at the community level. Support two candidates in the FELTP
<b>Health Information</b>	Monitoring and Evaluation	Strengthen disease surveillance systems to improve decision-making, planning, forecasting and program management  Conduct periodic end-use verification survey
	Operational Research	Provide facilities, equipment, training and financial support for in-country malaria operational research.
<b>Essential Medical Products, Vaccines, and Technologies</b>	Case Management	Support improved forecasting, procurement, quality control, storage and distribution of malaria commodities, such as insecticide-treated nets, artemisinin-based combination therapies and rapid diagnostic tests.
<b>Health Finance</b>	Health Systems Strengthening	Provide technical assistance to NMCP to leverage financial contributions and services from government and private sector partners for malaria prevention and control
<b>Leadership and Governance</b>	Health Systems Strengthening	Support strengthening of national coordinating and regulatory bodies to direct and manage malaria resources, develop guidelines, and improve quality of services.  Support the recommendation of the organizational assessment such as restructuring of the NMCP logistic unit

## 6. Behavior Change Communication

### NMCP/PMI objectives

The country's BCC strategy, designed with PMI's support in 2012, aims to increase awareness among target populations for increased use of malaria prevention and control measures through culturally sound communication activities. The NMCP uses a sociological approach to behavior change, which targets populations most affected by malaria, collaborates with key actors who influence behavior (traditional, opinion, and religious leaders), and takes into account the social context that dictates behavior. The BCC strategy combines different channels of communication (television, radio, multimedia, and interpersonal communication), social mobilization, advocacy, and capacity building of stakeholders. Innovative approaches to social and behavior change communication, many of which were developed by PMI-supported activities, are promoted under this strategy to ensure greater impact and efficacy of activities. At the national level, the National Health Communications Program coordinates, establishes norms and provides guidance on BCC activities across the various health programs, and reviews provincial level communication work plans to monitor BCC strategies in each of the 26 new provinces.

### Progress since PMI was launched

Since 2011, PMI has supported BCC activities in targeted health zones in line with the national strategy to promote use of malaria preventive measures and treatment services. The package of malaria services has been supported with an array of BCC activities that include community sensitization around routine preventive services for malaria in pregnancy and immunization to deliver IPTp and ITNs, as well as community mobilization via the community health promoters (*relais promotionnels*) to ensure correct and timely use of ITNs as well as to improve care-seeking behavior. Since August of 2012, PMI has strengthened the capacity of the NMCP to coordinate BCC activities among partners and stakeholders, and develop effective and quality materials for BCC interventions. More specifically, PMI trained NMCP central and provincial coordinators on BCC in the old provinces of Oriental, Katanga, South Kivu, and Eastern and Western Kasais. It has sponsored MoH participants to attend a malariology course, and facilitated development of the SBCC module.

PMI supported the update of the National BCC strategy, as well as the dissemination of the NMCP malaria and prevention treatment guidelines. Finally, PMI has supported the production of promotional tools for nets distribution, a comic book to support the students at their schools, and supported a malaria day campaign in targeted provinces.

### Progress during the past 12-18 months

PMI has used various BCC approaches to deliver key messages in the 181 health zones that it supports, including broadcasting messages through television, community radio, short message service (SMS), mini campaigns, website blogs, and interpersonal communication. Through these efforts, nearly 370,000 SMS messages were sent on malaria-related issues, and 222 mini communications campaigns were conducted which had key malaria messages. Community outreach workers performed 105,543 home visits. In addition, 384,567 women were sensitized through antenatal care visits, as well as 17,282 people who were reached through immunization

clinic visits. Furthermore, 1,787 health care workers and 561 community health care workers were trained on BCC to improve their capacity to sensitize beneficiaries. Key activities include:

Community-based interpersonal communication: Two hundred community relays from seven health zones in East Kasai and Katanga were trained on interpersonal communication methods, with a focus on the use of the family health guide during home visits and the development of technical skills to effectively communicate and disseminate messages on the prevention, care, and treatment of malaria. Home visits by community relays using the family health guide were also supported in Kinshasa and Kananga, and these visits were monitored for quality. In general, the relays and the trained providers used SBCC materials correctly and effectively showed good performance.

School-based activities: The after-school campaign “Students engaged in malaria prevention” was implemented in 54 target schools in the cities of Kinshasa and Lubumbashi, reaching 18,724 individuals at school and in the community. Less than 50% of individuals remember prevention and treatment measures in Kinshasa and in Lubumbashi, with ITNs being the best known method. With the exception of Lubumbashi, case management measures for malaria are not very well known, in particular the use of rapid diagnostic tests.

eHealth campaign: Health messages were sent in local languages to community members with telephones in the Kasais, Katanga and the Kivus. Malaria messages focused on ITN use and care seeking for children with fever. Overall, the messages were well received and reached beyond those with phones due to sharing of messages among networks such as community meetings and church. All of those who had received SMS messages wanted messages to increase to two to three times per week and to include broader topics. Qualitative interviews conducted during the campaign evaluation indicated that people were changing their behaviors after receiving the messages.

Television campaign: The campaign targeted the DRC’s second largest city, Lubumbashi, and focused on four key messages:

1. Sleep under an ITN every night
2. Take the child to the nearest health center at the onset of fever
3. Get a diagnosis for malaria in case of fever
4. Take the whole dose of drugs given by the health worker

Over two months, four local television stations ran the cartoon spot at least three times per day and three days per week. A survey conducted immediately following the campaign revealed that television is an effective means to reach this urban population, as 98% of households own a working television and the majority state that they watch it every day.

Nearly three-fourths of respondents (73%) had seen the spot. Among those who had seen it, 83% were able to cite all four key messages, while 98% of those who had not seen the spot were only able to recall one message (primarily to sleep under an ITN). The message most recalled by those who had seen the spot was to sleep under an ITN (90%), followed by going to a health center when a person has fever (71%), taking the full antimalarial treatment (55%) and having a rapid diagnostic test (37%).

Going beyond knowledge, the survey also indicated that approximately a quarter of people intended to change their behaviors for the better and to recommend that others do the same. Finally, the survey collected information on what people liked and did not like about the spot, which will be used to inform future BCC activities.

Finally, PMI supported the capacity building and coordination activities at the national level, including development of the NMCP Communication Plan, an addendum to the current 2013-2015 Strategic Plan. PMI resources facilitated the revitalization of the BCC Working Group and the PMI BCC tool is included in the NMCP BCC toolkit. Similar working groups are being piloted in PMI-supported provinces.

### Plans and justification

In FY 2016, PMI will continue to support implementation of the national communication strategy in PMI-supported health zones. BCC activities will be focused on raising awareness of health workers, community leaders, community health workers, community groups, school students, and other malaria stakeholders on the importance of malaria prevention and treatment. Key malaria-related communications messages will be integrated into BCC activities throughout the USAID health portfolio to leverage the effectiveness and reach of interventions. PMI will also engage government officials, donors, parliamentarians, and private sector to increase attention to malaria, mobilize resources, and foster greater coordination of activities.

In compliance with PMI BCC guidance, BCC support will continue to utilize local communication channels that are culturally sound and familiar to the communities and target populations. These activities will also address the following key issues targeting providers and patients, while supporting advocacy for policies that address other systemic determinants.

- Despite the policy of ACT as the first-line for uncomplicated case of malaria, quinine remains the main anti-malarial used to self-treat fever, and is widely prescribed by health workers even when ACT is available in healthcare facilities. BCC efforts towards this end will address both provider practices and patient knowledge and compliance with treatment.
- Increase the coverage of IPTp for prevention of malaria in pregnancy: More than 88% of pregnant women attend ANC at least once in the DRC and 79% make two visits. In spite of this, only 14.3% of pregnant women received two doses of SP during ANC visits. Again, BCC efforts will target both providers and patients.
- Stimulate the use of ITNs among targeted risk groups: While the use of ITN has shown improvement, major gaps remain. Only 55.9% of children less than five years of age and 60.3% of pregnant women sleep under an ITN. As a recent assessment of the ITN program showed a significant drop in ITN use between campaigns, BCC activities will reinforce the ongoing universal coverage campaigns and routine distribution of nets at health facilities, especially reinforcing BCC activities between the campaigns. Messages delivered on a routine basis will be strengthened, and will be disseminated both during the campaigns and at the health facilities.
- Promote the acceptability of three new commodities: RDTs for malaria diagnosis, injectable artesunate for treatment of severe cases, and rectal artesunate for pre-referral treatment of severe cases at the community level.

- Explore the barriers to access and uptake of malaria prevention and treatment approaches in order to inform BCC activities across the PMI portfolio.
- Enhance coordination of BCC activities at all levels of the health system. Coordinating BCC activities remains a challenge, from the operational level, to the provincial and national level.

PMI will ensure that appropriate tools such as PMI BCC tracking tools and NMCP communication plan are in place to monitor BCC activities and the impact of messages on population behavior. BCC activities will be evaluated under planned end of project and mid-term evaluations.

Proposed activities with FY 2016 funding (\$1,325,000)

1. Support BCC activities to raise awareness on ownership and use of ITNs, both during mass campaigns and, especially, during routine distribution targeting vulnerable groups. PMI will support sensitization at antenatal care and immunization clinics by healthcare providers; advocacy meetings with community leaders; family outreach by community health workers; community and small group discussions; and television radio spots, and posters. (\$400,000 total)
2. Support the cost of promoting the use of malaria treatment commodities and services. PMI will promote changes in provider behavior to use AS-AQ as the first-line treatment of malaria; improve patient knowledge of malaria services through sensitization at antenatal care and immunization clinics by healthcare providers; advocacy meetings with community leaders; family outreach by community health workers; community and small group discussions; SMS; television and radio spots, posters. The cultural and other contextual determinants will be explored to better understand health worker behavior, and BCC interventions will be developed to counter inappropriate provider diagnostic and treatment practices. (\$560,000 total)
3. BCC training for community health workers to promote MIP interventions, including ITN use, IPTp, and treatment-seeking behavior for suspected malaria along with general messages on the importance of antenatal care in 181 health zones in 6 old provinces. Activities at the community level and interpersonal communication will also promote the malaria in pregnancy interventions. (\$315,000 total)
4. Support NMCP advocacy activities in order to increase political will and mobilize GDRC resources (both human and monetary), engage greater involvement with government, donors, parliamentarians, and the private sector through meetings, workshops, and development of materials and media campaigns. As part of Roll Back Malaria mandate, the NMCP has developed an advocacy plan to continue with mobilization of resources. PMI together with other donors have been collaborating to support workshops, meetings and other outreach activities to meet the planned objectives. (\$50,000)

**7. Monitoring and evaluation**

NMCP/PMI objectives

The NMCP's National Strategic Plan 2011-2015 laid out clear objectives for itself and its partners. The NMCP is currently drafting the National Strategic Plan for 2016-2020, and will continue to monitor progress towards outlined objectives of reducing malaria-specific morbidity and mortality. The National Strategic Plan for 2011-2015 outlined the following targets:

- At least 80% of people at risk sleep under a ITN
- At least 80% of households in target zones are covered by IRS
- At least 80% of pregnant women receive IPTp according to national directives
- At least 80% of all patients with malaria receive diagnosis and treatment conforming to national standards at all levels of the health system
- At least 80% of malaria epidemics are controlled according to national standards
- Strengthened national and provincial coordination structures of the NMCP
- Data on indicators of importance to the NMCP are routinely available

### *Progress since PMI was launched*

The DRC has made significant progress in M&E during its first five years as a PMI focus country. PMI support for M&E has included technical assistance and training to national-level NMCP staff through a full-time PMI-funded senior M&E advisor, who was hired in July 2013 and sits at the NMCP to provide direct technical assistance and support at the national level. At provincial and health zone levels, PMI has included monitoring and evaluation activities within each one of the implementing partners, with the purpose to improve the quality of monitoring and evaluation activities, and facilitate its implementation. To define quantitative measures for the outputs and outcomes of the 2013-2015 National Malaria Strategic Plan, PMI assisted in the development of the 2013-2015 National Malaria Monitoring and Evaluation Plan; this will be updated within the next six months of 2015 to align with the new Strategic Plan 2016-2020 that is currently under development. This M&E plan was communicated through a national-level workshop in October 2013, to build capacity for M&E functions. The workshop also provided tools and instruments to carry out monitoring and evaluation activities for the lower levels, from the provincial level, down to the health facility level. Additionally, other workshops have been conducted at the national level with the support of a PMI implementing partner, and with the purpose to strengthen the monitoring and evaluation activities at lower levels. Participants at these workshops were from the provincial and health zones levels.

PMI has supported NMCP efforts to strengthen routine data systems at the health zone, provincial, and national levels by providing M&E training at all levels, facilitating evaluations of routine surveillance for malaria by FETP residents and supporting the establishment of seven entomological surveillance sites. PMI will continue to support two trainees per year for FY 2016. FETP students work with the NMCP to improve the quality of data at the central level. In some cases, some FETP students work in the field at provincial levels supporting the improvement of monitoring and evaluation activities. Additionally, through one of PMI's implementing partners, and given the logistical challenges and geographic expansiveness of the DRC, EUVs are carried out twice a year rather than quarterly as a means to monitor malaria drugs and commodities, helping the NMCP observe possible stockouts and get a periodic snapshot of the commodity situation in certain areas.

### *Progress during the last 12-18 months*

PMI was a primary supporter of the 2013-14 DHS, which was completed in early 2014; the final report was disseminated in September 2014. The DHS is the first comprehensive survey collecting malaria data since the 2007 DHS. In 2013, PMI also supported an organizational assessment of the NMCP that included an evaluation of the functions of the monitoring and evaluation department. The first draft of the report recommended that all monitoring and

evaluation activities be grouped under a single department in order to regularly monitor all donor-supported activities. Implementing actions coming from this report will take place this year once approved by the Minister of Health. The M&E department oversees surveillance activities within the malaria sentinel sites. However, the Direction of Infectious Diseases is the entity of the MOH in charge of all diseases surveillance. PMI has also supported NMCP efforts to build M&E capacity and strengthen collection, analysis, and use of routine malaria data at all levels through targeted technical assistance and trainings with provincial and national level NMCP staff.

The MoH is in the process of transitioning its routine information system to the DHIS 2 platform and began subnational rollout in 2014. PMI has supported the startup process of DHIS 2 in one of the pilot provinces (old provinces), Kasai Oriental. Currently, while DHIS 2 is being implemented in three of the new provinces as part of the initial phase of a three year scale up plan, PMI continues to support the use of a malaria specific instrument (Form III) for routine data collection in provinces supported by PMI's implementing partners. PMI also supports provincial level supervisors to collect, compile, and analyze health zone data, as well as perform supervision to targeted health zones in order to improve reporting completeness and timeliness.

PMI contributed, together with other donors such as Global Fund and DFID, to finance the molecular surveillance study of artemisinin resistance. This therapeutic efficacy survey (TES) will be implemented in select sites during 2015-2016; the NMCP is developing a draft protocol.

Over the past year, the two PMI advisors have contributed to the following monitoring and evaluation activities: a) the development of a concept note for the Global Fund, which will bring an additional \$40 million to DRC (the percent of this grant that will be directed to monitoring and evaluation is not yet known); b) the production and distribution of the NMCP annual report; c) the process of reorganization and re-start of malaria sentinel sites, supported also by DFID; d) the development of the matrix of indicators for the NMCP covering PMI-supported activities; and e) the support for data analysis of routine NMCP data.

**Table 8. Monitoring and Evaluation Data Sources**

Data Source	Survey Activities	Year								
		2010	2011	2012	2013	2014	2015	2016	2017	2018
National-level Household surveys	Demographic Health Survey (DHS)				X					
	Malaria Indicator Survey (MIS)							X		
Health Facility and Other Surveys	School-based malaria survey							N/A		
	Health facility survey						X	X		
	SPA survey									
	EUV survey				X	X	X	X	X	X
Malaria Surveillance and Routine System Support	Support to malaria surveillance system through specific sentinel sites						X	X	X	X
	Support to NMCP vertical malaria info system				X	X	X	X	X	X
	Support to routine HMIS			X	X	X	X	X	X	X
Therapeutic Efficacy monitoring	In vivo efficacy testing							X		
Entomology	Entomological surveillance and resistance monitoring						X	X	X	
Other Data Sources	Malaria Impact Evaluation							X		
*Not PMI-funded										

*Plans and justification*

PMI plans to support a new Malaria Indicator Survey in 2016. In accordance with PMI M&E guidance, the 2016 MIS will collect updated information on intervention coverage and impact, as well as biomarkers for anemia and parasitemia.

The need to strengthen routine health facility surveillance in the DRC has been well documented and PMI will continue to support enhanced routine surveillance. Multiple assessments of data quality and community case management have highlighted serious challenges with routine data collection at the health facility and community (iCCM) levels. In response, PMI will support

enhanced routine reporting in selected sites. This support will include training and supportive supervision for monitoring and reporting activities, printing and distribution of standardized registers and data collection forms, and technical assistance to support data use at the health facility level. In areas with iCCM activities, this activity will also provide similar support to the community health workers in the catchment areas. These enhanced sites will serve as model sites and replicated to enhance routine surveillance. A plan to develop guidelines and directions for the establishment and running of these enhanced routine surveillance sites started to be developed last year with the financial support of DIFID, and other donors, and with the technical support of PMI's advisors. At the moment, there is a draft document, and the NMCP hopes to start the implementation process in the last quarter of 2015. Currently, there are 11 sentinel sites, but not all of them are functioning. An assessment of these sites will be carried out in the upcoming months, in order to identify equipment and/or staffing needs and start with the implementation plan.

Given the important contributions to date, PMI will continue to support an M&E technical advisor to the NMCP. This individual sits at the NMCP to provide technical expertise, and M&E capacity building within the NMCP through mentoring and on-the-job training for staff. Although capacity within the NMCP has improved, the need for further technical assistance remains given the challenges of implementing new guidance and HMIS tools, along with the continued scale-up of DHIS 2. In addition, technical assistance is critical to help update and implement the National M&E Strategy for 2016-2020. The M&E advisor will continue to work closely with the NMCP to coordinate and implement M&E workshops, and to establish the new HMIS and centralized database.

*Proposed activities with FY 2016 funding (\$1,930,000)*

- Support improved use of data for program management at central level. In order to build M&E capacity within the central NMCP staff, PMI will support targeted technical assistance and training on the use of data for program management. The focus of this activity will be on analyzing program and research data collected by the NMCP and its partners to guide implementation of the National Malaria Strategy. (\$200,000)
- Build M&E capacity at provincial level through training, data analysis, and use. With FY 2016 funding, PMI will provide technical assistance and training to the provincial level NMCP staff to improve the collection, analysis, and use of malaria data. This provincial level assistance will also support improvements in the data collection and aggregation system in selected sites, including coordination among partners working on enhanced routine reporting, roll out of the DHIS-2, and possible SMS data transmission capacity. This activity will also support supervision for data collection, analysis, and quality control. (\$200,000)
- Enhanced routine reporting in selected sites. As a complement to the technical assistance provided to the provincial NMCP staff (see above), PMI will support enhanced routine reporting in selected sites. This support will include training and supportive supervision for monitoring and reporting activities, printing and distribution of standardized registers and data collection forms, and technical assistance to support data use at the health facility level. In areas with iCCM activities, this activity will also provide similar support to the community health workers in the catchment areas. The funds will be divided between the two service delivery partners in the DRC, each supporting one old province for this activity. (\$500,000 total)

- Assessment of the results of the pilot provincial capacity building activity for monitoring and evaluation. (\$50,000)
- Monitoring and evaluation advisor to the NMCP. PMI will provide continued support to an M&E technical advisor to the NMCP. This individual sits at the NMCP and provides technical expertise to help implement the National M&E Strategy. The advisor also is tasked with building M&E capacity within the NMCP through mentoring and on-the-job training for staff. (\$100,000)
- Implementation of the 2017 MIS. In accordance with PMI M&E guidance, PMI will support a Malaria Indicator Survey with funds from FY 2016 MOP to collect updated information on intervention coverage as well as biomarkers for anemia and parasitemia. This MIS will be also supported by the Global Fund and other donors, and the PMI's contribution will be \$500,000.
- End-use verification survey (EUV). In order to track the availability of PMI-purchased commodities at the health facility level, PMI will continue to conduct an EUV survey in selected provinces. These data will be used to monitor the effectiveness of PMI's efforts to improve the supply chain in the DRC and case management practices at the lowest level of the health system. (\$150,000)
- Support training and field data collection to monitor durability of the ITNs distributed in the 2015 mass campaign. These funds will also be used to purchase supplies and equipment to conduct cone bioassays as well as baseline and follow-up laboratory analyses to monitor the insecticide content of the ITNs. It is expected to start with this study at the end of this year 2015 and obtain results in 2016. Due to the size of the country and the difficulty in reaching some areas, the cost is estimated to be \$220,000.
- CDC technical assistance for M&E. (\$10,000)

## **8. Operational Research**

### NMCP/PMI objectives

In 2014, the NMCP developed a Plan of National Surveys 2015-2020, which included 25 research/surveys projects. This Plan aims to fill the gap in operational research and surveys required to meet the needs of the malaria program, and is part of the National Strategic Malaria Plan. The PMI/DRC team is working to prioritize operational research gaps and needed studies that will be further developed with the NMCP and subject matter experts in order to achieve feasible, sound study designs that meet the needs of decision-makers.

### Progress during the last 12-18 months

As one of the newer PMI focus countries, the DRC is still early in the development of an operational research (OR) portfolio. However, the PMI/ DRC team has been working to implement operational research that aligns with NMCP priorities, and addresses critical gaps that impact decision-making. In 2014, PMI/DRC began developing two studies that will begin in January 2016. One study will help inform vector control strategies by determining the degree that mass-distribution of ITNs increases the intensity of pyrethroid resistance. A second study will further our understanding of how malaria cases and malaria in pregnancy are being managed by health providers, and the factors influencing case management. In addition, a PMI core-funded study assessing an appropriate follow up strategy for non-malaria fevers will be

conducted in Katanga province. This study will provide important information on whether patients with fever, but who are RDT negative and do not have pneumonia or diarrhea can be managed safely at community level.

*Proposed activities with FY 2016 funding: (\$0)*

PMI currently has no studies or other OR activities planned with FY 2016 funding.

**Table 9. PMI-funded Operational Research Studies**

<b>Completed OR Studies</b>			
<b>Title</b>	<b>Start date</b>	<b>End date</b>	<b>Budget</b>
None to date			
<b>Ongoing Planned Assessments or OR Studies in previous FY</b>			
<b>Title</b>	<b>Start date</b>	<b>End date</b>	<b>Budget</b>
Assessment of the extent to which mass-distribution of ITNs increases the intensity of pyrethroid resistance	January 2016	December 2016	\$100,000
Assessment of case management and MIP at the facility and community levels, and factors influencing treatment decisions.	January 2016	December 2016	\$200,000
<b>Planned OR Studies FY 2016</b>			
<b>Title</b>	<b>Start date (est.)</b>	<b>End date (est.)</b>	<b>Budget</b>
None planned			

## 9. Staffing and administration

Two health professionals serve as resident advisors to oversee PMI in the DRC, one representing CDC and one representing USAID. In addition, seven Foreign Service Nationals (FSNs) will work as part of the PMI team: three PMI full-time staff and four FSNs shared who will work on cross-cutting issues of supply chain management and logistics, community case management, monitoring and evaluation, and administrative assistant. All PMI staff members are part of a single interagency team led by the USAID Mission Director or his/her designee in country. 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 resident advisor positions (whether initial hires or replacements) 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 PMI professional staff work together to oversee all technical and administrative aspects of the PMI, including finalizing details of the project design, implementing malaria prevention and treatment activities, monitoring and evaluation of outcomes and impact, reporting of results, and providing guidance to PMI partners.

The PMI lead in country is the USAID Mission Director. The day-to-day lead for PMI is delegated to the USAID Health Office Director and thus the two PMI resident advisors, one from USAID and one from CDC, report to the USAID Health Office Director for day-to-day leadership, and work together as a part of a single interagency team. The technical expertise housed in Atlanta and Washington guides PMI programmatic efforts.

The two PMI resident advisors are based within the USAID health office and are expected to spend approximately half their time sitting with and providing technical assistance to the national malaria control programs and partners.

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, in addition to the US Global Malaria Coordinator.

*Proposed activities with FY 2016 funding: (\$2,646,000)*

- Salaries and support costs of one USAID PSC, two USAID FSNs full-time PMI staff, and four FSNs jointly funded with other mission funding, including equipment, ICASS, other Mission taxes and fees, and other associated expenses including the TBD Bilateral baseline survey by a third party (\$1,935,000);
- Salaries and support costs of one CDC direct hire, including equipment, ICASS, other Mission taxes and fees, and other associated expenses including the TBD Bilateral baseline survey by a third party (\$711,000).

**Table 1: Budget Breakdown by Mechanism****President's Malaria Initiative – DR CONGO****Planned Malaria Obligations for FY 2016**

<b>Mechanism</b>	<b>Geographic Area</b>	<b>Activity</b>	<b>Budget (\$)</b>	<b>%</b>
TBD – Supply Chain Contract	Nationwide and 181 health zones in 13 DPS in 6 former provinces	Procure ITNs for mass campaigns. Procure and deliver malaria commodities and microscopy. Strengthen the supply chain management for drugs including end use verification.	25,715,000	57.1%
TBD – Bilateral Project	113 health zones in 5 provinces	Training and supervision of health workers; Distribution cost of malaria drugs and commodities in routine and mass campaigns; IEC/BCC; support NMCP provincial capacity building; M&E/enhanced routine reporting	10,100,000	22.4%
PMI-Expansion	68 health zones in 5 provinces	Training and supervision of health workers; Distribution cost of malaria commodities; IEC/BCC; support NMCP provincial capacity building; M&E/enhanced routine reporting; Malaria surveillance; support NMCP and INRB professional development	3,850,000	8.6%
VectorWorks	3 health zones	Conduct ITN durability study	220,000	0.5%
IRS 2 TO6 with INRB sub-grants	6 provinces (7 sites)	Support entomological surveillance, insecticide resistance monitoring and training	500,000	1.1%
MalariaCare with INRB sub-grants	National, provincial and selected referral hospitals	Support reference laboratories at national and provincial levels for microscopy and RDTs training of trainers	500,000	1.1%

<b>Mechanism</b>	<b>Geographic Area</b>	<b>Activity</b>	<b>Budget (\$)</b>	<b>%</b>
TBD – IEC/BCC	National & Provincial	Continue to support country coordination mechanisms at the national and provincial levels	200,000	0.4%
Measure Evaluation	National & Provincial	Support better use of data for program management at the central level; Build M&E capacity at provincial level through training, data analysis, and use	400,000	0.9%
TBD – M&E	National & 2 Provinces	Assessment of the results of the pilot provincial capacity building activity for M&E; Continued support for an M&E Liaison to provide technical assistance to the NMCP	150,000	0.3%
DHS Program	National	Implementation of 2017 Malaria Indicator Survey	500,000	1.1%
CDC/IAA	National	In-country staff and administrative expenses and technical assistance trips	930,000	2.1%
USAID	National	In-country staff and administrative expenses and technical assistance	1,935,000	4.3%
<b>Total</b>			<b>45,000,000</b>	<b>100%</b>

**Table 2: Budget Breakdown by Activity**

**President's Malaria Initiative – DR CONGO**

**Planned Malaria Obligations for FY 2016**

Proposed Activity	Mechanism	Budget		Geographic area	Description
		Total \$	Commodity \$		
<b>PREVENTIVE ACTIVITIES</b>					
<b>Insecticide Treated Nets</b>					
Procure long-lasting insecticide treated bed nets (ITNs) for mass campaigns	TBD – Supply Chain Contract	11,160,000	11,160,000	Province TBD	Contribute to universal coverage of ITNs in a province (to be determined) through provision of 3.1 million nets. This includes the cost of net delivery from the manufacturer to provincial warehouses.
Distribution costs for long-lasting insecticide treated bed nets (ITNs) for mass campaigns	TBD – ITN (Bilateral Project)	4,650,000		Province TBD	Support the distribution of 3.1 million ITNs from provincial warehouses to distribution points, storage, supervision, including social mobilization, IEC/BCC, pre- and post-campaign.

Procure and deliver to provincial level the ITNs for routine distribution through ANC and child health clinics	TBD – Supply Chain Contract	5,400,000	5,400,000	181 health zones in 13 DPS in 6 former provinces (Kinshasa, West Kasai, East Kasai, South Kivu, Katanga and Orientale)	Procure and deliver 1.5 million ITNs from port to provincial warehouses for free distribution through routine antenatal and child health clinics.
Distribution costs for routine ITNs from provincial to distribution points, storage and supervision	TBD – ITN (Bilateral Project)	1,200,000		113 health zones in 5 provinces (Kinshasa, West Kasai, East Kasai, South Kivu, and Katanga)	Support the distribution cost for 1,000,000 ITNs from provincial warehouses to distribution points for routine services in target health zones. Storage and supervision are included.
	PMI-Expansion	600,000		68 health zones in 5 provinces (West Kasai, East Kasai, South Kivu, Katanga and Orientale)	Support the distribution cost for 500,000 ITNs from provincial warehouses to distribution points for routine services in target health zones. Storage and supervision are included.
<b>SUBTOTAL ITNs</b>		<b>23,010,000</b>	<b>16,560,000</b>		
<b>Indoor Residual Spraying</b>					
Entomological surveillance and insecticide resistance monitoring	IRS 2 TO6 with INRB sub-grants	400,000		6 provinces (7 sites)	Improved support for species identification and insecticide resistance monitoring and sentinel sites in supported provinces. Includes increased supervision/support of field and laboratory activities.

Supplies for entomological monitoring	CDC/IAA	10,000	10,000	National + six provinces	Provide collection equipment and supplies and reagents for insecticide resistance assays and mosquito identification.
Technical assistance for entomological monitoring	CDC/IAA	29,000		National	Assist INRB in establishing functioning entomological monitoring sites and other related activities.
<b>SUBTOTAL IRS</b>		<b>439,000</b>	<b>10,000</b>		
<b>Malaria in Pregnancy</b>					
Procure SP	TBD – Supply Chain Contract	400,000	400,000	181 health zones in 6 provinces (Kinshasa, West Kasai, East Kasai, South Kivu, Katanga and Orientale)	Procure 3 million SP treatments for 1.3 million expected pregnant women in the targeted health zones.
Distribution costs for SP from CDRs to distribution points.	TBD Bilateral Project	75,000		113 health zones in 5 provinces	Support the distribution cost of 1.7 million SP for routine services in target health zones, including ANC registers, cups, water filters, etc. to all pregnant women
	PMI-Expansion	50,000		68 health zones in 5 provinces	Support the distribution cost of 1.3 million SP for routine services in target health zones, including ANC registers, cups, water filters, etc. to all pregnant

					women
Training and supervision of facility and community-based health workers in malaria in pregnancy.	TBD Bilateral Project	425,000		113 health zones in 5 provinces	Train health workers with initial or refresher courses in targeted zones in 5 provinces. This includes health workers from both public and private sectors and supervision.
	PMI-Expansion	250,000		68 health zones in 5 provinces	
<b>SUBTOTAL MIP</b>		<b>1,200,000</b>	<b>400,000</b>		
<b>SUBTOTAL PREVENTIVE</b>		<b>24,649,000</b>	<b>16,970,000</b>		
<b>CASE MANAGEMENT</b>					
Support reference laboratories at national and provincial levels for microscopy and RDTs training of trainers and implementation of quality control and assurance of malaria diagnosis	MalariaCare with INRB sub-grants	500,000		National, provincial and selected referral hospitals	Supervise and implement a system for quality control and quality assurance of malaria diagnosis, assist in preparation for accreditation of laboratory technicians and provide equipment. Conduct training of trainers at the different levels of the healthcare system.
Support to provincial laboratories at provincial and health facility levels with microscopy commodities	TBD – Supply Chain Contract	150,000	150,000	National, provincial and selected referral hospitals	Purchase of microscopes and reagent kits at reference laboratories at the national and provincial levels, as well as selected reference hospitals.

Train and supervise laboratory technicians and other health workers to perform RDTs at the health zone level.	TBD Bilateral Project	700,000		113 health zones in 5 provinces	Provide training and supervision to laboratory staff and health workers performing malaria RDTs. Continue to scale up OTSS in additional health zones.
	PMI- Expansion	450,000		68 health zones in 5 provinces	
Procurement of ACTs	TBD – Supply Chain Contract	5,755,000	5,755,000	181 health zones in 6 provinces (Kinshasa, West Kasai, East Kasai, South Kivu, Katanga and Orientale)	Procure approximately 10.5 million co-formulated AS-AQ treatments for case management of uncomplicated malaria in PMI-supported health zones. Monitor the possible expansion of AL as alternative first-line ACT and consider adjusting purchase orders accordingly.
Procurement of injectable artesunate for treatment of severe malaria	TBD – Supply Chain Contract	900,000	900,000	181 health zones in 6 provinces	Procure 62,000 treatments of injectable artesunate each for treatment of severe malaria at hospitals and large referral center level
Procurement of rectal artesunate for pre-referral treatment of malaria	TBD – Supply Chain Contract	50,000	50,000	181 health zones in 6 provinces	Procure 300,000 doses of rectal artesunate for pre-referral treatment of malaria administered by nurses and community health workers at health center and community levels.
Procurement of oral quinine	TBD – Supply Chain Contract	350,000	350,000	181 health zones in 6 provinces	Procure 277,000 doses of oral quinine for cases of ACT intolerance and for pregnant women in the first trimester.

Training and supervision of facility-based health workers trained in case management	TBD Bilateral Project	900,000		113 health zones in 5 provinces	Support in-service training and supervision of facility health workers responsible for the management of both severe and uncomplicated in 181 health zones.
	PMI-Expansion	500,000		68 health zones in 5 provinces	
Build and maintain capacity to provide community case management services	TBD Bilateral Project	500,000		113 health zones in 5 provinces	Support in-service training and supervision of community health workers responsible for the management of uncomplicated malaria at the community level.
	PMI-Expansion	300,000		68 health zones in 5 provinces	
Technical assistance	CDC IAA	20,000		National	Two visits to support activities related to case management and quality control, in particular, to assist with issues related to training of health providers and community case management of malaria.
<b>SUBTOTAL -- Diagnosis and Treatment</b>		<b>11,075,000</b>	<b>7,205,000</b>		
<b>PHARMACEUTICAL MANAGEMENT</b>					
Distribution costs for all case management (diagnosis and treatment) related commodities from provincial warehouse (CDRs) to distribution points	TBD Bilateral Project	400,000		113 health zones in 5 provinces	Support distribution of malaria case management commodities (RDTs and medicines) from provincial warehouses to health zones and health facilities.
	PMI-Expansion	300,000		68 health zones in 5 provinces	

Strengthen the supply chain management for drugs	TBD – Supply Chain Contract	900,000		181 health zones in 6 provinces	Strengthen the supply chain management for malaria drugs and RDTs, including support to forecasting ACT, SP, and RDT needs, drug inventory management, availability of warehouses at national levels, targeted technical assistance to FEDECAME, forecasting and management of stockouts.
Support for operational costs related to commodities in country	TBD – Supply Chain Contract	500,000		Six provinces	Support an in-country office for PMI implementers involved in the delivery of malaria commodities to improve management of shipments, forecasting, obtaining waivers for importation, transportation, etc.
<b>SUBTOTAL - Pharmaceutical Management</b>		<b>2,100,000</b>	<b>0</b>		
<b>SUBTOTAL CASE MANAGEMENT</b>		<b>13,175,000</b>	<b>7,205,000</b>		
<b>HEALTH SYSTEM STRENGTHENING/CAPACITY BUILDING</b>					
Continue to support country coordination mechanisms at the national and provincial levels	TBD IEC/BCC	150,000		National & 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.

Support national and provincial-level training for provincial-level staff on communication and malaria evaluation	PMI-Expansion Project	150,000		National & Provincial	Support in-country training sessions at the national and provincial levels staff in communication (IEC/BCC) and in monitoring and evaluation. The two trainings which are also organized at the international or regional level will enable an increased number of participants in the DRC.
Support NMCP professional development	PMI-Expansion	50,000		National	Support two NMCP staff to attend the Tropical Medicine conference in the USA and one entomologist from INRB. Support two staff members from NMCP to attend an updated course in a neighboring African country on supply chain management and Monitoring and evaluation or study tours.
Support entomological training	IRS 2 TO6 with INRB sub-grants	100,000		National	Support two students for the field entomology in a regional accredited academic institution.
Support to NMCP capacity building at provincial level	TBD Bilateral Project	300,000		New DPS TBD (4)	Strengthen the capacity of the NMCP at the provincial level in strategic planning, policies, guidelines and M&E planning through locally-recruited Malaria Advisers.
	PMI-Expansion	375,000		New DPS TBD (5)	

Support Field Epidemiology and Laboratory training Program	CDC IAA	150,000		National	Support Field Epidemiology and Laboratory Training Program with (FELTP) malaria focus. Two trainees.
<b>SUBTOTAL - HSS/CB</b>		<b>1,275,000</b>	<b>0</b>		
<b>BEHAVIOR CHANGE COMMUNICATION</b>					
IEC/BCC for routine distribution of ITN	TBD Bilateral Project	250,000		113 health zones in 5 provinces	Support IEC/BCC activities to raise awareness among the population on ownership and use of bed nets, mainly for vulnerable groups.
	PMI-Expansion	150,000		68 health zones in 5 provinces	
IEC/BCC related to case management	TBD Bilateral Project	260,000		113 health zones in 5 provinces	Support the cost of promoting use of malaria treatment commodities and services through IEC/BCC activities.
	PMI-Expansion	300,000		68 health zones in 5 provinces	
IEC-BCC-related to malaria in pregnancy, cascading elements for community health workers and communities.	TBD Bilateral Project	190,000		113 health zones in 5 provinces	IEC-BCC training for community health workers on MIP interventions, including bednet use, IPTp, and treatment-seeking behavior for suspected malaria along with general messages on the importance of antenatal care.
	PMI-Expansion	125,000		68 health zones in 5 provinces	
Support NMCP advocacy activities	TBD IEC/BCC	50,000		National	As part of resources mobilization, engage government, donors, parliamentarians and private sector including mining companies through meetings, workshops and development of materials and media campaigns.
<b>SUBTOTAL - BCC</b>		<b>1,325,000</b>			
<b>MONITORING AND EVALUATION</b>					

Support better use of data for program management at the central level	Measure Evaluation	200,000		National	Support training on data analysis and use for program management, supervision, coordination.
Build M&E capacity at provincial level through training, data analysis, and use	Measure Evaluation	200,000		Two provinces (TBD)	Build M&E capacity and improve systems at the provincial level by supporting provincial level training in M&E, piloting of improved data collection and aggregation system in selected sites, printing standardized reporting forms, and supervision for data collection, analysis, quality control, and use for program decision-making.
Expansion of enhanced routine reporting in selected health facilities (centers of excellence) through training, supervision, data collection, aggregation, and use.	TBD Bilateral Project	250,000		Two provinces (TBD)	Training and supervision of central and provincial-level NMCP staff in data collection, analysis, quality control and use for program decision making; including printing forms, training and supervision at provincial level.
	PMI-Expansion	250,000			
Assessment of the results of the pilot provincial capacity building activity for monitoring and evaluation	TBD - M&E	50,000		Two provinces (TBD)	Conduct assessments to inform further scale-up of capacity building activities.

Continued support for an M&E Liaison to provide technical assistance to the NMCP	TBD - M&E	100,000		National	Support of an M&E professional to work at the National Malaria Control Program Division to coordinate and conduct M&E activities.
Implementation of 2017 Malaria Indicator Survey	DHS-7	500,000		National	Provide technical assistance to the NMCP and partners in planning, developing questionnaires, implementing and conducting data analysis for the MIS.
End Use Verification monitoring	TBD – Supply Chain Contract	150,000		National	Conduct regular end use verification surveys.
ITN durability	Vector Works	220,000		1-2 provinces	Conduct ITN durability study per PMI guidance.
Technical assistance	CDC IAA	10,000		National	Assist national M&E planning, support capacity building for M&E
<b>SUBTOTAL - M&amp;E</b>		<b>1,930,000</b>	<b>0</b>		
<b>IN-COUNTRY STAFF AND ADMINISTRATIVE COST</b>					
In-country staff and administrative expenses	USAID	1,935,000		National	One Resident Advisor, two Malaria Program Specialists, one (30%) Malaria Commodities and Logistics Specialist, one (50%) Community Case Management Specialist, one (10%) M&E Specialist, one (80%) Administrative Assistant, one (60%) Financial Analyst, one (60%) Contract Specialist, one

					(5%) Program Specialist. Total staff: \$1,035,000. Program Design and Learning, total: \$900,000
	CDC IAA	711,000		National	One Resident Advisor.
<b>SUBTOTAL In-Country Staffing</b>		<b>2,646,000</b>			
<b>GRAND TOTAL</b>		<b>45,000,000</b>	<b>24,175,000</b>		