

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 2017 appropriation. If any further changes are made to this plan it will be reflected in a revised posting.



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U.S. PRESIDENT'S MALARIA INITIATIVE



PRESIDENT'S MALARIA INITIATIVE

BURKINA FASO

Malaria Operational Plan FY 2017

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ABBREVIATIONS and ACRONYMS

ACT	Artemisinin-based combination therapy
AL	Artemether-lumefantrine
ANC	Antenatal care
AS/AQ	Artesunate-amodiaquine
CAMEG	Central Medical Supplies Store
CDC	Centers for Disease Control and Prevention
CHW	Community healthcare worker
CNRFP	National Research and Training Center for Malaria
CSPS	<i>Centre de santé et de la promotion sociale</i> (Health center)
DGPML	<i>Direction générale de la pharmacie, du médicament et des laboratoires</i> (General Directorate of Pharmacies, Medicines and Laboratories)
DHS	Demographic and Health Survey
DMRH	Division of Maternal and Reproductive Health
EPI	Expanded program on immunizations
EUV	End-use verification
FSN	Foreign service national
FY	Fiscal year
Global Fund	Global Fund to Fight AIDS, Tuberculosis and Malaria
GoBF	Government of Burkina Faso
HMIS	Health management information system
IEC	Information, education, communication
IPTp	Intermittent preventive treatment for pregnant women
IRS	Indoor residual spraying
IRSS	Research Institute of Health Sciences
ITN	Insecticide-treated mosquito net
LMIS	Logistics management information system
MIP	Malaria in pregnancy
MIS	Malaria indicator survey
MoH	Ministry of Health
OR	Operational research
NMCP	National Malaria Control Program
PADS	<i>Programme d'appui au développement sanitaire</i> (Support program for health sector development)
PMI	President's Malaria Initiative
QA/QC	Quality assurance/quality control
RA	Resident Advisor
RDT	Rapid diagnostic test
SBCC	Social and behavior change communication
SM&E	Surveillance, monitoring, and evaluation
SMC	Seasonal malaria chemoprevention
SP	Sulfadoxine-pyrimethamine
SP/AQ	Sulfadoxine-pyrimethamine amodiaquine
TRaC	Tracking results continuously
UNICEF	United Nations Children's Fund

USAID
WHO

United States Agency for International Development
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 WHO's 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.

Burkina Faso was selected as a PMI focus country in fiscal year (FY) 2017.

This first FY 2017 Malaria Operational Plan presents a detailed implementation plan for Burkina Faso, 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 fit in well with the National Malaria Control strategy and plan and build on prior investments by 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 Burkina Faso, 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 2017 funding.

The proposed FY 2017 PMI budget for Burkina Faso is \$25 million. PMI will support the following intervention areas with these funds:

Entomologic monitoring and insecticide resistance management:

Burkina Faso has strong entomological capacity and a history of malaria vector research including insecticide resistance monitoring. Resistance to DDT and pyrethroids is widespread and reduced susceptibility to bendiocarb has been detected in two sites. PMI plans to support monitoring at

entomological sentinel sites to assess mosquito species composition, density, behavior, and infection rates, conduct insecticide susceptibility testing, as well as determine IRS quality and residual efficacy of insecticides. In addition, PMI will assist the country in the development of a comprehensive plan for resistance monitoring.

Insecticide-treated nets (ITNs):

The national strategy for Burkina Faso uses ITNs as the principal tool for malaria prevention and employs three approaches for ensuring that ITNs are available to the entire population: free distribution of ITNs via nationwide campaigns, free distribution of ITNs through routine antenatal care and expanded program on immunization provided at all public health facilities, and the sale of ITNs by the private sector. Burkina Faso has benefitted from three mass campaigns in 2011, 2013, and 2016. Because Burkina Faso will receive sufficient funds from other sources to cover the ITNs needed for the routine system at public health facilities, PMI will not provide funds for the purchase of ITNs.

Indoor residual spraying (IRS):

Burkina Faso's National Strategy includes IRS, along with ITNs and larval source management, as vector control interventions to prevent malaria. USAID supported a pilot IRS program in the district of Diéboougou from 2010 to 2012, covering ~35,000 structures and protecting ~115,000 people annually. However aside from this pilot, the Government of Burkina Faso (GoBF) has not been able to secure additional resources to support IRS. With FY 2017 funds, PMI proposes to re-start IRS in Burkina Faso in up to five high burden districts, using an effective long-lasting insecticide, in an effort to mitigate resistance and drive down the burden of malaria.

Malaria in pregnancy (MIP):

The current Ministry of Health (MoH) policy is to provide, free-of-charge, all antenatal care (ANC) services to pregnant women, including provision of an ITN as well as three or more doses of sulfadoxine-pyrimethamine (SP) for IPTp, and iron-folate to prevent anemia. The NMCP strategy is updated based on WHO revised guidance (2012), while register updates and training of health workers on these revisions has been completed. Concerning treatment of malaria in pregnancy, women in their first trimester are given oral quinine, while women in their second and third trimesters are prescribed ACTs. PMI is currently supporting an operational research (OR) activity to determine if delivery of IPTp by community healthcare workers (CHWs) can help improve coverage. With FY 2017 funds, PMI will continue support for training and supervision for malaria in pregnancy services, as well as scale-up of community IPTp.

Case management:

PMI is committed to supporting the NMCP's goal of providing universal timely diagnostic testing for all cases of fever and ensuring that all confirmed malaria cases are treated promptly with efficacious antimalarials. With the ongoing nationwide rollout of the CHW program, PMI will support the expansion of diagnosis and treatment to the community level. To help the NMCP meet its case management goals, PMI will procure rapid diagnostic tests (RDTs), ACTs, rectal artesunate for pre-referral of severe cases, and severe malaria treatments. PMI will also support training and supervision of healthcare workers and CHWs to promote adherence to national case management guidelines. To ensure a sufficient supply of malaria commodities, PMI will strengthen the pharmaceutical management system, focusing on capacity building at the district level. To improve the quality of malaria case management, PMI will support diagnostic quality control and quality assurance and will monitor the efficacy of antimalarials. PMI will also support the NMCP in providing seasonal malaria chemoprevention (SMC) in children 3 to 59 months of age.

Health systems strengthening and capacity building:

Burkina Faso's National Strategy focuses on reinforcing the NMCP's management capacity to effectively oversee all malaria activities in country. PMI will direct FY 2017 resources to strengthen all levels of the health system. Specific courses and learning opportunities will be selected to address key gaps in knowledge with the aim of strengthening the NMCP to more effectively lead malaria control efforts. In an effort to strengthen not only the NMCP core staff, but also the entire malaria program at all its levels, regional malaria focal points will be recruited in each of the 13 health regions to decentralize malaria specific knowledge and oversight. This position, along with district level malaria review meetings, will help to strengthen data quality and control. Monitoring availability and utilization of key antimalarial commodities at the health facility level will also be conducted. At the community level, PMI will support training and supervision of health workers on malaria case management, rectal artesunate, and community IPTp. PMI will collaborate with Peace Corps by funding two third year volunteers who will coordinate all Peace Corps malaria efforts and disseminate messages and provide services to hard-to-reach populations as well as identify unmet needs.

Social and behavior change communication (SBCC):

Burkina Faso's National Strategy emphasizes the key areas of advocacy, social mobilization, and behavior change communication, and serves as a guideline for all malaria partners in country. In Burkina Faso, knowledge of how to prevent and treat malaria is higher than the actual prevention and care-seeking behavior itself. While IPTp information is widely disseminated, treatment of pregnant women with SP remains fairly low. Sixty eight percent of pregnant women reportedly received IPTp1, 48 percent IPTp2, and 22 percent IPTp3. With FY 2017 funds, PMI will continue to support a range of SBCC activities while emphasizing the use of tracking results continuously (TRaC) surveys to address specific behavior barriers. PMI will support a network of CHWs and community organizations that will use an innovative mix of interpersonal communication delivery platforms, including home visits, community theatre, village competitions, champion communities, and school-based information campaigns. PMI will also enable facility and community health care providers to provide messages through training and dissemination of job aids and will encourage collaboration between service delivery providers and those creating social and behavior change messaging.

Surveillance, monitoring, and evaluation (SM&E):

PMI will work with the NMCP to strengthen the quality of malaria data and improve data use at all levels. To that end, PMI will support quarterly data review activities at the district level to allow health facility and district staff to meet and jointly analyze malaria data collected using the health management information system (HMIS). To complement the routine data, PMI will implement a health facility survey to systematically assess the quality of malaria case management and health facility readiness to provide malaria care delivery. This will further be complemented by quarterly end-use verification (EUV) surveys to monitor health facility stocks of key malaria commodities.

Operational research (OR):

The NMCP strategy describes the importance and role of OR in advancing the fight against malaria. Burkina Faso has several key research centers available and currently supporting malaria OR activities. PMI is currently supporting an OR activity examining whether using CHWs to administer SP can improve IPTp coverage, particularly in rural areas. Using FY 2017 funding, PMI will continue to support this study.

II. STRATEGY

1. Introduction

When it was launched in 2005, the goal of 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 Subregion 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.

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2. General description of public health system and malaria control efforts

Burkina Faso is a landlocked Sahel country located in the center of West Africa, and covers an area of approximately 272,960 km². It is bordered to the north and west by Mali, to the north east by Niger, to

the south east by Benin and to the south by Togo, Ghana, and Ivory Coast. In 2016, the population of Burkina Faso is estimated, using number from the 2006 census, to be 19,034,397, with a natural growth rate of 3.1 percent. Twenty percent of the population lives in urban areas. Women represent 51.8 percent, and children under five years of age represent 18.1 percent of the population. According to the same estimates, expected pregnancies account for 5.5 percent of the total population.

Data from the 2015 Tracking Results Continuously (TRaC) survey show that the infant mortality rate has decreased from 65 deaths per 1,000 live births in 2010 to 45 deaths, while the maternal mortality rate has dropped from 341 deaths to 330 deaths per 100,000 live births during the same period.

Burkina Faso currently ranks 183 out of 188 according to the Human Development Index (Human Development Report 2015, UNDP). The national poverty line was estimated at \$263 (154,061 FCFA) per adult per year in 2014 (early warning indicators, Ministry of Economic and Finance of Burkina Faso, 2014), which is almost three times lower than the threshold of two dollars per day per individual set by the World Bank Group. The percentage of the population living below that threshold is 40.1 percent (EMC report, INSD 2014). There are clear links between poverty and health status. Burkinabe living in rural areas are, in general, at greater risk of poverty as well as poor health status compared to their urban counterparts.

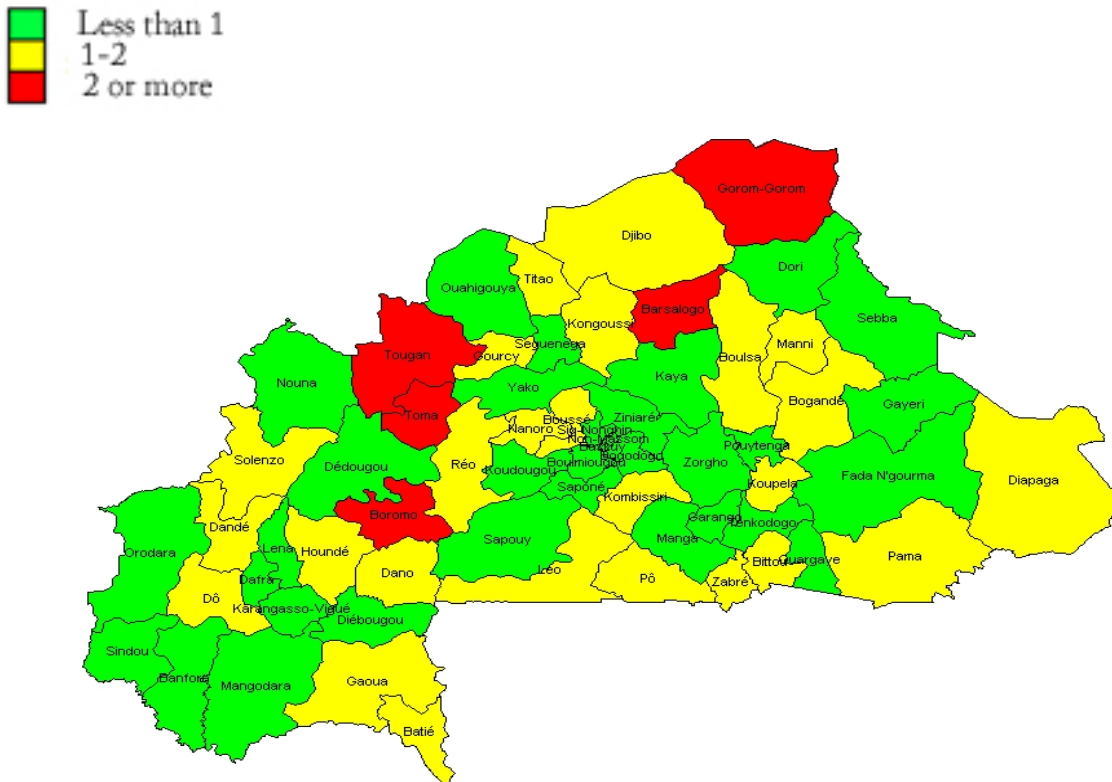
Malaria remains a major public health issue and is endemic throughout the country, with a seasonal upsurge from May to November. Burkina Faso's NMCP has been targeting malaria interventions based on a map developed by the Research Institute of Health Sciences (IRSS) and *Centre Muraz*, which dates back more than ten years. However, recent disease reporting patterns are not completely consistent with the old malaria transmission zone map. The country requested assistance from the Global Fund to update this map to ensure that targeted interventions are aligned with the country's epidemiological profile.

In Burkina Faso, the rainy season duration varies across the country with corresponding variances in seasonal malaria transmission based on geographic zones. In the North, the rainy season is short (up to three months), in the central zone it lasts up to six months, and in the South, it can last up to nine months. Important components for reducing the burden of malaria morbidity and mortality include systematic use of diagnostic tools for suspected malaria cases and effective use of antimalarial medicines for confirmed cases, along with prevention strategies, such as the prevention of malaria in pregnancy (MIP), seasonal malaria prevention and vector control interventions such as promoting consistent use of ITNs, and IRS. The malaria control approach includes these components, along with improvements in tracking of human illness and parasite surveillance, and effective resource delivery. Significant efforts have been made to stabilize the antimalarial commodity situation. The increased availability of rapid diagnostic tests (RDTs), ACTs, and severe malaria treatment kits has helped to improve malaria case management in health facilities, which combined with preventive measures has contributed to reduce significantly the malaria death rate from 3.3 percent of malaria cases in 2011 to 1.2 percent in 2015 (Annual health statistics of the Ministry of Health, 2015).

According to the annual national health statistics published by the Directorate for Health Statistics of the Ministry of Health (MoH), the situation in 2015 was as follows:

- There were 8,285,251 cases of malaria (with a reported diagnostic confirmation rate of 82.4 percent) compared to 8,278,408 cases in 2013 (with 77.5 percent confirmed cases).
- There were 5,379 deaths linked to malaria in comparison with 5,632 deaths in 2014, a slight decrease of 4 percent.
- Deaths due to malaria among children under five decreased slightly, with 4,005 deaths being reported, compared to 4,166 in 2014, which represents a 4 percent decrease.

Figure 2: Malaria case fatality rates by district in Burkina Faso, 2015



Source: NMCP

The principal vectors of malaria in Burkina Faso include three members of the *Anopheles gambiae* complex (*An. gambiae* s.s., *An. coluzzii*, and *An. arabiensis*) and *An. funestus*. Their relative abundance depends on location and time of year. *Plasmodium falciparum* (in 90% of cases, responsible for serious and fatal forms of malaria) infection is widespread across the country and throughout the year, while *P. malariae* and *P. ovale* individually culminate at the end of the rainy season.¹

According to entomological data available, the vector complex is dominated by members of *An. gambiae* s.l. complex with a large predominance of *An. gambiae* s.s. and *An. coluzzi* in the Central and the Central East regions of the country. *An. arabiensis* is best established in most areas, except in the West where it is relatively uncommon. The Sahel zone is characterized by a strong presence of *An. coluzzi* in suburban areas due to permanent or semi-permanent water collections. *Anopheles funestus* is the second vector group after *An. gambiae* s.l. that transmits in the late rainy season.²

¹ Gneme A, et al. (2015) Equivalent susceptibility of *Anopheles gambiae* M and S molecular forms and *Anopheles arabiensis* to *Plasmodium falciparum* infection in Burkina Faso. Malar J. 2013 June 14; 12:204

² IRSS, Centre Muraz 2012, Statut de sensibilité des populations d'*Anopheles gambiae* s.l. Dans les zones pilotes du PNLP au Burkina Faso

Concerning resistance of malaria vectors and especially *An. gambiae* in West Africa and particularly in Burkina Faso, a study conducted by IRSS and *Centre Muraz* in 2012, indicated that resistance is increasing every year, which could be a medium-term limiting factor in the use of insecticides for vector control.

The resistance of *Anopheles gambiae* s.l. to DDT and major pyrethroid insecticides is evident in many parts of the country, but the level is variable according to the location. Resistance levels for deltamethrin are still acceptable from an operational perspective in the central and eastern areas of the country. Bendiocarb is still effective in several areas except in the western part of the country. The most effective insecticides in all parts of the country are fenitrothion and especially pirimiphos methyl.

Major partners in malaria control

The **Global Fund malaria grant** started on October 1, 2015 and ended on December 31, 2016 with a new reallocation expected early next year. The public sector and civil society components of the grant were both awarded to PADS (*Programme d'appui au développement sanitaire*) with two secondary recipients; one being the NMCP. Total funding is about \$65 million. Major areas of intervention include ITNs for mass distribution campaigns and routine distribution; severe malaria case management; pharmaceutical management; and malaria treatment at the community level. The Global Fund was the main contributor to the 2016 ITN mass distribution campaign, procuring more than 10 million nets.

The recent recruitment by the MoH of 17,000 new community healthcare workers (CHWs)--two per village--was supported through the Global Fund's health system strengthening grant. The Global Fund's support for CHWs includes an integrated training package: prevention, diagnostics and the treatment of malaria, pneumonia, and diarrhea. The Global Fund will finance a quarter of the \$34 per month stipend for CHWs, while the Government of Burkina Faso (GoBF) will pay the remaining amount. The Global Fund, through its civil society malaria grant, is also providing nationwide coverage to support 252 community-based organizations: promoting sensitization of communities on malaria prevention and treatment through group discussions, theatre, and videos.

UNICEF provides technical support, including the hiring of consultants, through their country health team. UNICEF provided technical assistance to the NMCP during the creation of the Global Fund malaria concept note, and has also provided limited financial assistance for the procurement of routine ITNs, seasonal malaria chemoprevention (SMC), and campaign implementation.

WHO provides technical assistance in setting standards and norms, and supports studies on vector resistance to insecticides and on therapeutic efficacy. WHO's support also includes limited resources for social behavior change in particular for the celebration of World Malaria Day, monitoring and evaluation, program management, and operational research (OR). WHO has also provided assistance for the evaluation and the development of the NMCP's 2016-2020 National Strategic Plan through technical assistance provided by malaria advisors and the recruitment of a consultant for the 2011-2015 malaria program review.

The World Bank is providing financial assistance to the GoBF through a \$37 million loan that supports Neglected Tropical Diseases, including malaria. The project started in January 2015 and will end in December 2019. Malaria resources have been focused on SMC interventions in 22 health districts located at the borders with Niger and Mali. Other types of support include financial resources provided

for the procurement of ACTs to fill gaps, social behavior change, program management, and technical assistance.

Malaria Consortium provides support for commodities procurement and the implementation of SMC campaigns, program management, and technical assistance. Malaria Consortium, with funding from UNITAID, provided financial and technical assistance for the procurement of SMC commodities and campaign implementation in 11 health districts in 2015 with an expansion to 31 health districts in 2016, and a likely reduction of health districts in 2017. With UNITAID funding expected to end, Malaria Consortium cannot confirm their continued support for SMC in 2018 and beyond.

The Italian cooperation through their malaria training and research program, provide support for monitoring and evaluation, program management, OR, and technical assistance. The estimated total budget for this three-year project is over \$5 million.

Terre des hommes, a Switzerland-based NGO provides support for SMC, purchase of ACTs and social behavior change, as part of the integrated case management of child illnesses at health facility levels.

The Government of Burkina Faso provides support through the procurement of sulfadoxine-pyrimethamine (SP) for IPTp, ACTs, microscopy tests, malaria case management at the community level, pharmaceutical management, severe malaria case management, social behavior change, and program management. However, the government commitment is not easy to track or monitor with shifting priorities and commitments (transitional government, new free health care program for children under five, and pregnant and lactating women, etc).

Existing mechanisms for coordination of malaria prevention and control activities

The Roll Back Malaria (RBM) Partnership does not have a strong physical presence in Burkina Faso. The RBM focal point in country, the NMCP Coordinator, chairs partner meetings on a quarterly basis.

The Country Coordinating Mechanism (CCM) includes representatives from public and private sectors, multilateral or bilateral agencies, governments, non-government organizations, private businesses, and academic institutions. The CCM is central to the Global Fund's structure and commitment to local ownership. The CCM assists with initial grant creation and oversight of progress during grant implementation. In 2014, after a CCM assessment to determine eligibility for Global Fund financing in Burkina Faso, it was decided that a redrafting of the CCM constitution was needed. The changes made to the CCM constitution in 2015 left financial partners (USAID, the European Union, and the French Cooperation) with one voting seat on a rotating basis. USAID is currently the second Vice President of the CCM, providing technical assistance to revitalize the CCM and ensure its Global Fund eligibility. In 2015 and 2016, USAID provided support to the CCM, through technical assistance provided by Global Management Solutions, to the primary grant recipients in drafting, and updating grant monitoring tools for implementation. USAID continues to coordinate regularly with the Global Fund Portfolio Manager regarding grant implementation issues and exploring ways to best leverage funds.

The Malaria Steering Committee provides directives and guidance to the NMCP and implementing partners, and also works to strengthen partnerships and coordination. (See integration, collaboration, and coordination section for more information).

Activities currently being supported by CDC, USAID, and other U.S. Government agencies for malaria control

USAID is currently the only U.S. agency providing financial resources and technical assistance for malaria in Burkina Faso. USAID is providing \$14 million in FY2016 funding to support malaria activities ranging from malaria commodity purchases to health care worker training and supervision.

Current status of malaria operational research activities

There are four national research institutions that are working in the areas of malaria OR with three of them overseen by the MoH which include: *Centre Muraz*, the Centre for Research and Training on Malaria, and the Centre for Health Research in Nouna. The fourth center, IRSS is overseen by the Ministry of Education. These centers receive limited resources from the GoBF and therefore tend to rely on additional external resources from partnerships with European and North American research institutions.

3. Country health system delivery structure and Ministry of Health (MoH) organization

The NMCP falls under the Department of Disease Control (*Direction de Lutte contre la Maladie*), which is housed under the Health Department (*Direction Générale de la Santé*) in the MoH. The current NMCP coordinator was appointed in January 2015 and is responsible for program management. Malaria activities are organized at all three levels of the public health system:

- The central level is responsible for developing strategies, mobilizing resources, coordinating partners as well as monitoring implementation and evaluating performance.
- The intermediate level is comprised of 13 health regions with nine regional hospitals, which serve as referral centers.
- The peripheral level is comprised of 70 health districts with a total of 47 district hospitals, 43 medical centers, and 1,698 health facilities.

In addition to public sector facilities, the private sector includes about 435 for-profit facilities, 45 health facilities run by nongovernmental or faith-based organizations, and 140 biomedical laboratories. There are also about 193 private pharmacies, with private drug sellers numbering around 524 countrywide. These private health facilities are mainly found in Ouagadougou and Bobo-Dioulasso. The private sector is integrated into the health system—participating in regular meetings with the MoH, ensuring at least some compliance with technical guidelines. The NMCP is considering providing private sector staff trainings on malaria prevention and treatment guidelines, and the creation of a memorandum of understanding to further engage the private sector in malaria control activities.

The traditional medicine sector is also gradually being incorporated into the health system and organized under the directorate for medicine and traditional medicine at the MoH. Healers provide health care for certain diseases including the use of traditional medicinal plants for malaria. As part of the fight against malaria, the government budget will train traditional medicine practitioners to recognize signs of severe malaria in order to refer these cases to the appropriate health facility. The MoH recommends that serious cases of disease be referred to health facilities for treatment.

In 2014, the MoH adopted a policy to formalize CHW status including their monthly stipend (CFA 20,000 or \$34), job description, and hiring criteria. The Global Fund is supporting the MoH with the recent recruitment of 17,000 new CHWs (two per village) through the Global Fund's health system strengthening grant. This support will also include an integrated training package—prevention,

diagnosis, and the treatment of malaria, pneumonia, and diarrhea—for each CHW. Training is scheduled to be completed by October 2016. According to an agreement with the government, only one quarter of the CHWs monthly stipend will be borne by the Global Fund, while three quarters will be supported by the government budget. The Global Fund, through its civil society malaria grant, is also providing nationwide coverage to support 252 community-based organizations promoting sensitization of communities on malaria prevention and treatment through group discussions, theatre, and videos.

The civil society is very active and supports the GoBF in implementation and resource mobilization. The civil society brings together several stakeholders including associations and other nongovernmental organizations, including an advocacy network and mobilization of funds for maternal and child health. Services include: social mobilization, promotion of essential family practices, patient monitoring, location of “lost” HIV and TB patients, orientation of patients to health facilities, family planning services, and treatment of malaria, diarrhea, etc.

4. National Malaria Control Program (NMCP) Strategy

In order to accommodate the Global Fund’s work, parts of the 2011-2015 NMCP National Strategic Plan were revised and extended through 2017, while the remainder of the strategy ended in 2015. A new 2016-2020 strategy was recently finalized, in line with the long term vision of eliminating malaria in Burkina Faso by 2030, and will be validated by the end of November 2016. The NMCP’s strategic objectives align with the Global Fund’s Technical Strategy, and PMI’s Strategy for 2015-2020 and include:

- Reduce malaria death rate by 40 percent in Burkina Faso by 2020 from 2015 levels
- Reduce malaria incidence rate by 40 percent in Burkina Faso by 2020 from 2015 levels
- Reinforce NMCP malaria program management capacities in Burkina Faso by 2020

The NMCP’s new strategic plan is comprised of 10 focus areas:

- Parasitological diagnosis of malaria at public and private health facilities, and community levels; and also through quality control/assurance of laboratories
- Treatment of malaria cases at public and private health facilities, and community levels
- Vector control through universal access to ITNs, implementation of IRS in targeted areas, and the management of insecticide resistance
- Prevention of malaria in pregnant women using intermittent preventive treatment with sulfadoxine – pyrimethamine and by providing ITNs through routine distribution channels
- Seasonal malaria chemoprevention for children aged 3-59 months
- Strengthening of communication through advocacy, social mobilization, and behavior change communication
- Securing commodity supply chain management
- Monitoring, evaluation, and research
- Epidemic control and emergency management
- Strengthening malaria program management

The NMCP’s strategic approach will continue to fall within the following major areas: prevention through malaria vector control, SMC for children under five years of age, IPTp, case management including diagnosis, and behavior change communication.

The malaria vector control goals are to protect individuals against infective malaria mosquito bites and reduce the intensity of malaria transmission at the community level. The key interventions in this plan include ITN distribution, IRS, and larval source control including environmental management.

In order to protect both mother and fetus from the impact of malaria infections during pregnancy, the NMCP policy is to administer IPTp using SP during each antenatal care visit (ANC) starting in the second trimester of pregnancy. Each treatment is administered with direct observation by a healthcare worker and continues at monthly intervals until delivery.

In 2014, SMC was piloted with two non-governmental organizations (NGOs)—Terre des Hommes and Alima—in seven health districts. Financial support was provided by the European Union (ECHO) and the World Bank. The study found:

- A high acceptability by the people living in the areas targeted by the intervention with high coverage of the target population (over 90 percent coverage achieved).
- A reduction of the number of cases of malaria among children under five by 15 percent in 2014 compared to 2013; and by 31 percent during the intervention period.
- A reduction of the number of severe cases of malaria among children under five by 16 percent compared to 33 percent in 2013.
- A reduction of the number of deaths by 45 percent in 2014 compared to 36 percent in 2013.

As a result, the MoH started scaling up implementation of SMC to cover 17 health districts in 2015 and 54 health districts in 2016. Malaria Consortium provided financial and technical assistance in 11 health districts from three regions in 2015, with expansion to 31 health districts in 2016. The World Bank provided assistance in four health districts in 2015, and expanded to 22 in 2016, and has committed to supporting 22 districts in 2017 and 2018. UNICEF provided funding and technical assistance for two districts in 2015 and 2016, while the Global Fund supported three health districts in 2016. In 2015, the analysis of routine data showed an average 25 percent reduction in the incidence of malaria in children under five years of age in SMC campaign areas.

Since 2012, the NMCP has strengthened case management, requiring the use of microscopy or RDTs to diagnose all suspected malaria cases presenting in health facilities. A primary difficulty has been ensuring an uninterrupted supply of RDTs at the health facility level. Beginning in 2013, a pilot study on the administration of RDTs by CHWs was conducted in three health districts. Results for the pilot are being reviewed and plans for national scale-up are in process. Nationwide community-based treatment with ACTs was achieved in January 2011.

5. Integration, collaboration, and coordination

The NMCP actively coordinates both financial and technical programmatic collaboration among financial and technical partners. The most formal presentation of this collaboration is the bi-yearly malaria steering committee meeting that brings together government ministries, donors, and implementing partners to review and coordinate malaria prevention and control activities. Under the steering committee, five working groups are tasked with different components of malaria prevention and control and include partners engaged in both financial and technical collaboration. The five groups are: partnership and communications; planning, monitoring, evaluation and research; vector control; drug-based case management and medical prevention; and finance and resource mobilization. In the soon-to-be-validated 2016-2020 National Strategic Plan, the NMCP will reach out to the private sector for increased funding opportunities. The relationships between the above-mentioned malaria stakeholders

are both collegial and collaborative with genuine interest in complementing one another and seeking information sharing and harmonization of strategies and action plans.

6. PMI goal, 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.³

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 (RBM MERG) as listed below:

- Proportion of households with at least one ITN
- 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

³ http://whqlibdoc.who.int/publications/2007/9789241596084_eng.pdf

7. Progress on coverage/impact indicators to date

Table 1: Evolution of Key Malaria Indicators in Burkina Faso from 2010 to 2015

Indicator	2010, MIS	2014, MIS	2015, TRAC
% Households with at least one ITN	65.5	89.8	N/A
% Households with at least one ITN for every two people	N/A	49.2	86.7
% Children under five who slept under an ITN the previous night	53.1	75.3	85.6
% Pregnant women who slept under an ITN the previous night	52.6	77.1	N/A
% Households in targeted districts protected by IRS	N/A ¹	N/A	N/A
% Children under five with fever in the last two weeks for whom advice or treatment was sought	20.6	61.4	76.7
% Children under five with fever in the last two weeks who had a finger or heel stick	5.3	30.3	43
% Children receiving an ACT among children under five years old with fever in the last two weeks who received any antimalarial drugs	35.1 ²	30.4	N/A
% Women who received two or more doses of IPTp during their last pregnancy in the last two years	38.5	47.6	N/A

¹. 2010 IRS district not covered by this study

². ACT was not only recommended treatment in 2010

III. OPERATIONAL PLAN

1. Vector Monitoring and Control

NMCP/PMI objectives

Malaria vector control is one of three major prevention interventions within the NMCP's strategic approach with the following goals: to protect individual people against infective malaria mosquito bites and to reduce the intensity of malaria transmission at the community level. The key vector control interventions in the NMCP's strategic plan include ITN distribution, IRS, and larval source control including environmental management.

A. Entomologic Monitoring and Insecticide Resistance Management

Current status

Burkina Faso has three institutions that have a history of conducting entomological work: National Research and Training Center for Malaria (CNRFP) and *Centre Muraz*, within the MoH, and Research Institute on Health Sciences (IRSS), a part of the Ministry of Education. The CNRFP laboratories, including an insectary, are located in Ouagadougou. The *Centre Muraz* laboratories and insectary are located in Bobo-Dioulasso and the entomologists employed by IRSS essentially work in the *Centre Muraz* laboratories. CNRFP and IRSS house colonies of members of the *An. gambiae* complex as well as *An. funestus*.

Entomologists from IRSS and *Centre Muraz* have provided technical assistance and oversight to entomological monitoring activities for USAID-funded IRS campaigns conducted from 2010 to 2012 in Diébougou health district, using Dano health district as a control unsprayed area. A follow-up entomological study was conducted in the Diébougou and Dano health districts in 2015. The most abundant vector in these districts were *An. gambiae* s.s. and *An. coluzzii*. The vectors remained strongly endophagic and endophilic even in the area where spraying had been conducted indicating that IRS should continue to be effective. Insecticide resistance testing at both sites revealed that less than 20 percent of wild caught *An. gambiae* s.l. are susceptible to DDT, less than 40 percent to deltamethrin, less than 80 percent to bendiocarb, but all are fully susceptible to the organophosphate pirimiphos methyl. Molecular tests for the L1014F mutation in the sodium channel gene that is associated with knock-down resistance to pyrethroids and DDT was found in the majority of the *An. coluzzii* and *An. gambiae* s.s. in both Dano and Diébougou. Alleles for the Ace-1 119S that strongly associated with carbamate and organophosphate resistance were also found but in much lower frequencies.

The entomologist of the CNRFP, and the Integrated Vector Control Consortium have been conducting insecticide susceptibility monitoring in various parts of the country. In Bama, they conducted testing each from 2011-2013. In all years, the percentage of mosquitoes susceptible to DDT, deltamethrin, and permethrin remained below 10 percent. The susceptibility to bendiocarb was around 85 percent and the mosquitoes were fully susceptible to fenitrothion.

Plans and justification

Because PMI plans to fund IRS with FY 2017 funds, PMI will also fund entomological monitoring activities associated with IRS. These activities include cone bioassays on walls to ensure quality of spraying in each of the IRS districts. In addition, the following entomological indicators will be monitored monthly in sprayed and matched control districts: density and identity of vectors, biting and resting behavior, parity rates, blood meal analyses, and infection rates. The sentinel sites for entomological monitoring will be selected in early 2017, upon a comprehensive review of the country's

plan for resistance monitoring with key stakeholders, including PMI. Lastly, insecticide resistance monitoring will be carried out in the sprayed and control districts as well as in other sentinel sites within the country.

Proposed activities with FY 2017 funding: (\$379,000)

1. *Entomological monitoring*: PMI plans to support the national program for entomological monitoring of the vector population (entomological indicators: densities, identification, behavior, parity and infection rates, etc.) along with monitoring of resistance to insecticides. Additionally, in the districts where IRS is conducted, cone bioassays on walls will be carried out at monthly intervals, after spraying, to assess spray quality. Molecular analyses of the mosquitoes collected will include identification to species level of the members of the *An. gambiae* and *An. funestus* complexes and identification of insecticide resistance genes. The full package of monitoring will take place in 4-5 sites in the sprayed districts, vector density and dynamics monitor in 3 sites outside of the IRS area, and insecticide resistance monitoring in 12 additional sites. This activity will also support the development and implementation of an insecticide resistance management plan in collaboration with the NMCP and in-country entomological partners. (\$350,000)
2. *Technical assistance*: An entomologist from the Centers for Disease Control and Prevention (CDC) will provide technical assistance for the planning and implementation of all PMI-funded entomologic monitoring activities. (\$29,000)

B. Insecticide-Treated Nets

Intervention overview/Current status

The national strategy for Burkina Faso uses ITNs as the principal tool for malaria prevention. This strategy was revised in 2013 following a midterm review and is currently under review for the extension. This strategy employs three approaches for ensuring that ITNs are available to the entire population: (1) free distribution of ITNs via nationwide campaigns, with one ITN made available for every 1.8 persons; (2) free distribution of ITNs through ANC and expanded program on immunization (EPI) services provided at all public health facilities, ensuring that pregnant women and infants are protected; and (3) the sale of ITNs by the private sector.

The 2010 demographic and health survey (DHS) shows that 44 percent of pregnant women and 45 percent of children under five slept under an ITN the night prior to the survey. These results are up from the 2003 DHS, where only two percent of pregnant women and three percent of children under five years of age slept under an ITN the night prior to the survey. Data from the MIS conducted in 2014, show that 77 percent of pregnant women and 75 percent of children under five years of age slept under an ITN the night prior to the survey, both significant increases from the 2010 DHS.

Burkina Faso conducted its first, nationwide, universal coverage ITN campaign in 2010. Approximately 7.5 million ITNs were distributed, which was about 600,000 less than the projected need. The next universal coverage campaign was carried out from July through early November 2013. As in the 2010 campaign, multiple donors contributed, including the Global Fund, USAID, and the GoBF. In total, 9,267,584 nets were distributed, covering 95 percent of all households that were identified during the pre-campaign census. The reason that the remaining five percent of households were not reached is that they did not come to collect their nets on the designated distribution day. The most recent universal coverage campaign was carried out in 2016. Almost 11 million nets were purchased and distributed, with Global Fund resources covering most of the costs. USAID contributed 400,000 nets to the 2016 campaign. The estimates for the nets needed for the campaign were based on a population estimate of

19 million, but the pre-campaign census estimated the population at 22 million - meaning universal coverage was not fully achieved.

Health facilities in all districts are supposed to provide ITNs free-of-charge to pregnant women during their first ANC visit and to children less than one year of age as a part of EPI services. During 2015, due to the late arrival of Global Fund procured nets, an estimated 1.7 million were needed for these vulnerable populations but only 529,836 were distributed, with all districts reporting a stockout at some point from October 2015 through September 2016. Nets are delivered to districts via the Central Medical Supplies Store (CAMEG). Each health facility is supposed obtain their nets from the district depot.

Another emerging issue is ITN durability. Preliminary information indicate that net life expectancy is less than three years. The NMCP is already leading discussions to consider additional approaches to extend the life of an ITN. As ITN durability data become available throughout Africa, and in the West Africa region in particular, the NMCP will continue to review their national strategy and make changes if needed. PMI will monitor the situation, and participate in country-level discussions, keeping the NMCP and other stakeholders informed on the latest information regarding best approaches for extending the life of a net that may lead to policy revisions.

Table 2: ITN Gap Analysis

Calendar Year	2016	2017	2018
Total targeted population	19,034,397	19,632,147	20,244,079
Continuous Distribution Needs			
Channel #1: ANC (5.5 % of population)	1,045,640	1,081,637	1,118,519
Channel #2: EPI	747,362	762,074	777,145
<i>Estimated Total Need for Continuous</i>	1,793,002	1,843,711	1,895,664
Mass Distribution Needs			
2016 mass distribution campaign	10,574,665	0	0
<i>Estimated Total Need for Campaigns</i>	10,574,665	0	0
Total ITN Need: Routine and Campaign	12,367,667	1,843,711	1,895,664
Partner Contributions			
ITNs carried over from previous year	0	0	0
ITNs from MoH	0	0	0
ITNs from Global Fund	11,431,208	1,298,600	1,875,664
ITNs from UNICEF	20,000	20,000	20,000
ITNs from USAID funding ¹	400,000	360,000	50,000
ITNs planned with PMI funding	-	-	0
Total ITNs Available	11,851,208	1,678,600	1,945,664
Total ITN Surplus (Gap)	(516,459)	(165,111)	0

Footnotes: ¹ USAID has provided funds for malaria control since 2009.

Plans and justification

The Global Fund and UNICEF are providing sufficient ITNs to cover 100 percent of the estimated number required to cover the current routine distribution channels for pregnant women and infants less than one year of age. However, due to routine distribution stockouts in previous years, PMI will purchase 50,000 nets to help fill any gaps that may arise. If no stockouts occur, the nets will be used for the 2019 mass distribution campaign. PMI will also fund an assessment of the routine ITN activities.

Proposed activities with FY 2017 funding: (\$250,000)

1. *Procure ITNs.* PMI will procure ~50,000 ITNs to contribute to the routine ITN distribution system. (\$200,000)
2. *Assessment of ITN routine distribution system.* PMI will provide funds for an evaluation of the current routine channels for pregnant women and children under one year of age. (\$50,000)

C. Indoor Residual Spraying

Intervention overview/Current status

Burkina Faso's 2016-2020 National Strategic Plan, whose adoption is anticipated in November 2016, calls for the re-introduction of IRS, in high transmission regions of the country. IRS would be in addition to the universal coverage of ITNs, and would not be implemented in regions where larval source management is proposed. The NMCP objective is to cover 100 percent of areas that are selected for IRS, with the idea of utilizing long-lasting or new insecticide formulations to combat the insecticide resistance that is quite prevalent in Burkina Faso.

Currently, IRS is not being implemented in Burkina Faso. USAID/Burkina Faso supported an IRS pilot in the district of Diébougou from 2010 to 2012, however USAID support for IRS ceased due to other funding priorities highlighted by the NMCP. During the IRS pilot, NMCP staff, along with regional and district health officials, were involved during key activities of the IRS campaign: training of trainers and training of spray teams, supervision of spray teams, and monitoring progress. IRS equipment, which was previously procured with support from USAID, has since been donated to the NMCP, and has not been used or serviced since the last campaign. Burkina Faso has quite a robust, in-country, entomological capacity to monitor the residual efficacy of IRS, so partners should be able to conduct monthly cone bio assays to monitor the duration of the intervention.

Table 3: USAID-funded IRS activities 2010-2012, and Future IRS Plans

Calendar Year	Number of Districts ¹ Sprayed	Insecticide Used	Number of Structures Sprayed	Coverage Rate	Population Protected
2010	1 (Diébougou)	Carbamate	33,897	98.9%	118,691
2011	1 (Diébougou)	Carbamate	33,832	99.31%	110,064
2012	1 (Diébougou)	Carbamate	36,870	99.3%	115,638
2018*	~ 5 districts	Organophosphate or new long-lasting formulation	~250,000	TBD	TBD
2019*	~ 5 districts	Organophosphate or new long-lasting formulation	~250,000	TBD	TBD

*Represents projected targets based on national strategic plan and discussions with the NMCP.

Plans and justification

With FY 2017 funds, PMI plans to re-start IRS in up to five high burden districts in Burkina Faso, as requested by the NMCP. The districts will be selected by the NMCP, PMI and relevant stakeholders after reviewing health management information system (HMIS) and entomological data. The final number of districts to be covered is dependant on the UNITAID funded NgenIRS Project, of which Burkina Faso is a candidate country for 2018. This market intervention project includes a short term co-payment to accelerate price reductions for long-lasting IRS insecticides. The price reduction will facilitate Burkina Faso’s ability to re-start the IRS program, significantly expanding the previous IRS pilot from 2010-2012. The insecticide selection will be made based on susceptibility data, WHO-recommended new insecticides on the market, and in alignment with Burkina Faso’s insecticide resistance management plan, which will be developed in 2017.

Proposed activities with FY 2017 funding: (\$4,015,000)

1. **IRS implementation:** PMI will support the implementation of IRS in up to five high burden districts in Burkina Faso. Implementation will include procurement of insecticide and personal protective equipment, training, operations, environmental compliance mitigation, social and behavior change communication (SBCC) and mobilization activities in IRS areas, and overall monitoring. (\$4,015,000)

2. Malaria in pregnancy

NMCP/PMI objectives

The NMCP updated their national strategy for IPTp in 2013, to align with the new WHO guidance for the prevention of MIP. The current policy recommends administration of a treatment dose of SP under direct observation of a health worker, at each visit to an ANC, starting in the second trimester (13th week), at four-week intervals, with at least three treatments provided before delivery. The policy includes provision of an ITN at the time of the first ANC visit, and 30 tablets (60mg/0.25mg per tablet) per month of iron/folate (taking one per day) to manage anemia. Women attending ANC receive all services free-of-charge including those related to case management.

Regarding case management of MIP, pregnant women who are diagnosed with uncomplicated malaria should receive quinine in the first trimester and ACTs in the second and third trimesters. Treatment for those diagnosed with severe malaria follow national protocols (see section on Treatment). The strategy also follows WHO guidance regarding pregnant women who are HIV-positive.

According to the national strategy, pregnant women represent an estimated 5.5% of the population, which is the percentage that the NMCP uses to quantify needs for SP and routine ITN distribution through ANC.

The national strategy articulates a target of 100 percent of pregnant women receiving at least three SP treatments (IPTp3) throughout their pregnancy. PMI will work with the NMCP and partners to achieve progress towards IPTp uptake and ITN distribution targets. The NMCP collaborates with the Division of Maternal and Reproductive Health through the National Coordinating Committee for Malaria. A case management and medical prevention technical group, which includes malaria in pregnancy, is housed under the Malaria Control Steering Committee and meets regularly to work on relevant technical issues.

Intervention overview/Current status

The MoH policy (as described in the NMCP strategy) is to provide all ANC services, free-of-charge, to pregnant women, including provision of an ITN as well as three or more doses of IPTp. This policy is based on the current WHO recommendations for IPTp. In general, MIP services are well integrated into ANC services as all health workers are trained on an integrated platform, which includes provision of correct malaria prevention and treatment services including those related to management of both uncomplicated and severe malaria cases and pregnant women who are HIV-positive. All pregnant women who attend ANC have an ANC card, which records updates of all the services they receive at each visit. ANC registers also have been updated allowing for monitoring of IPTp1-3 uptake.

Population-based data show improvement in IPTp uptake and ITN use by pregnant women. For instance, IPTp2 improved from 11 percent (2010 DHS) to 47 percent (2014 MIS), and the first, national-level measure of IPTp3+ found 22 percent coverage (2014 MIS). Additionally, ITN use improved from 44 percent (2010 DHS) to 77 percent (2014 MIS). Overall, 95 percent of pregnant women make at least one ANC visit, while 57 percent make two to three visits and 34 percent make four or more visits (2010 DHS). The next MIS is scheduled to take place during the peak transmission season in 2017.

The GoBF is the sole provider of SP, and, until this year, consistently met all national-level needs. However, with the political upheaval that occurred in 2014, budget constraints were imposed on all ministries and the \$4 million plus in funding that had been attributed to malaria in previous years was not available in 2016. This led to sporadic stockouts of SP as procurements did not reach previous year levels. According to the NMCP and MoH, the GoBF plans to resume full support of SP in 2017 to meet 100 percent of the national need. All GoBF-funded commodities, including SP, are procured by CAMEG, and the MoH, through the General Directorate of Pharmacies, Medicines, and Laboratories (DGPML) ensures quality.

The NMCP works closely with the Division of Maternal and Reproductive Health (DMRH), and engaged them during the recent revision of the National Malaria Control Strategy.

Since 2010, USAID has been supporting the NMCP to strengthen and improve the provision of MIP services by facilitating integrated training and supervision of health workers, including those responsible for delivery of ANC services. The USAID support includes work with the national school of public

health to update their malaria modules and train teachers to ensure that new cadres of health workers will graduate with current knowledge and skills for malaria prevention, diagnosis, and case management. In addition, USAID support facilitates supervision to ensure that malaria guidelines are followed. Supervision is carried out by a team at the district level, although funding and time constraints limit the frequency of supervisory visits. Supervision is performed in an integrated fashion whereby a facility is visited and monitored for the entire package of health services they provide, including treatment and prevention of malaria, with input from all levels within the MoH. USAID has found that specific, on-the-job follow-up has been an effective manner to ensure that health care workers are adhering to national malaria guidelines, including those related to MIP.

Regarding support for MIP services, USAID has been working to ensure that cups and clean drinking water for direct administration of IPTp by a health worker are available at ANCs. Quantification and commodity distribution issues related to SP are being addressed by USAID as well. However, SP and ITNs reach ANCs via the national CAMEG commodity distribution system that delivers supplies to the district level, from which individual facilities are responsible for obtaining stock replenishments. With USAID support, ANC cards and registers were updated following the revision of the IPTp policy in 2013.

Table 4: Status of IPTp Policy in Burkina Faso

WHO policy updated to reflect 2012 guidance	2013
Status of training on updated IPTp policy	Completed
Number of health care workers trained on new policy in the last year	663*
Are the revised guidelines available at the facility level?	Yes
ANC registers updated to capture 3 doses of IPTp-SP?	Yes
HMIS/ DHIS updated to capture 3 doses of IPTp-SP?	Yes

*Includes 63 trainers/supervisors

Commodity gap analysis

Table 5: SP Gap Analysis for Malaria in Pregnancy

Calendar Year	2016	2017	2018
Total population	19,034,397	19,632,147	20,244,079
SP Needs			
Total number of pregnant women attending ANC	1,045,640	1,081,637	1,118,519
Total SP Need (in treatments)	4,182,558	8,112,278	8,388,890
Partner Contributions			
SP carried over from previous year	-	-	-
SP from MoH	400,000	8,112,278	5,988,890
SP from Global Fund	-	-	-
SP from Other Donors	-	-	-
SP planned with PMI funding	-	-	2,400,000
Total SP Available	400,000	8,112,278	8,388,890
Total SP Surplus (Gap)	(3,782,558)	-	-

Footnotes: (1) SP Needs for total number of pregnant women is just the expected number of pregnancies in one year, based on 5.5% annual pregnancy rate; (2) Total SP Need (in treatments) are calculated by the NMCP and MoH to reflect ANC4 in 2016 and ANC5 in 2017 and 2018, or 4 times the number of all pregnant women in 2016 and 5 times the number in 2017 and 2018. Also, SP needs include a buffer stock of 6 months (half of annual need based on ANC5) starting in 2017 due to stockouts in 2016. (3) PMI contributions for SP will be used only for scale-up of community IPTp delivery. (4) For commodity planning purposes and gap analyses, including the Global Fund support, the NMCP uses the 100 percent target for IPTp3 coverage and routine ITN distribution to pregnant women.

Plans and justification

Using FY 2017 funding, PMI will continue to support activities aimed at enhancing the provision of effective MIP services in public health facilities in Burkina Faso. This will include support for integrated training and supervision as well as activities aimed at improving awareness and facilitating behavior change related to malaria prevention. PMI will also support the scaling up of community IPTp, based on results of the two-year OR activity that started in 2016. PMI support for scale-up will include provision of SP and training and supervision of CHWs in districts targeted for initial scale-up. If WHO has not updated the IPTp policy by then, which would allow for community level distribution, then PMI will reprogram these funds for IPTp community scale-up into other activities.

Proposed activities with FY 2017 funding: (\$75,000)

1. *Procurement of SP: Procure SP for approximately 167,000 pregnant women. Funds will complement other sources, including those from the GoBF, and contribute to the scale-up of community IPTp, if the pilot is successful. (\$75,000)*
2. *Training of healthcare workers on MIP: Costs covered under the Case Management section, within budget item #6. (\$0)*
3. *Supervision of healthcare workers on MIP: Costs covered under the Case Management section, within budget item #7. (\$0)*

4. *Support supervision of CHWs for integrated malaria activities:* Costs covered under the Case Management section, within budget item #8. (\$0)

3. Case management

NMCP/PMI objectives

PMI is committed to helping the NMCP reach its objective of testing 100% of suspect cases of malaria and treating 100% of confirmed cases with an appropriate antimalarial in all settings, including public health facilities, the community, and the private sector.

Intervention overview/Current status

Malaria care delivery in Burkina Faso occurs at all levels of the health system, as well as at the community level. Malaria case management is conducted by an estimated 21,196 healthcare workers and by 8,000 of Burkina Faso's 17,000 CHWs that work in villages further than 5km from the nearest health facility. The scale-up of malaria care delivery by CHWs was formalized by the nationwide identification and training of CHWs in integrated management of childhood illness in late 2016.

According to the 2014 MIS, the majority of fever cases in children (56.4 percent) sought care in the public sector, compared to 3.5 percent in the private sector, 1.1 percent from CHWs, and 3.5 percent from traditional healers and other sources. However, with the scale-up of the CHW program, the NMCP aims to increase the proportion of malaria care delivered at the community level.

A. Diagnosis and Treatment

Diagnosis

Obligatory laboratory testing of suspect malaria cases is done by either microscopy or RDT. Microscopy is largely restricted to Burkina Faso's nine district hospitals and four university hospitals, and in 2015 accounted for 2.5 percent of all malaria testing in the country. The remaining 97.5 percent of malaria testing was done by RDTs, which are available at the hospital, health facility (CSPS), and the community level. The expansion of RDT testing to the community level was implemented in 2016 following a successful pilot program in three districts from 2012 to 2014. In 2015, according to HMIS data, 83.5 percent of reported malaria cases were confirmed by diagnostic testing.

Treatment

National treatment guidelines prescribe the use of one of two ACTs: artemether-lumefantrine (AL) or artesunate-amodiaquine (AS/AQ), as first-line treatment of uncomplicated malaria. However, with the large-scale expansion of SMC, the NMCP altered the guidelines to recommend the use of AL in young children and AS/AQ in adults, and is in the process of moving to sole procurement of AL to minimize the selection pressure on parasites resistant to AQ. Pregnant women are to be treated with oral quinine in the first trimester, and an ACT in the second and third trimesters.

Treatment of severe malaria is performed at the hospital and CSPS level. The NMCP plans to introduce the use of pre-referral rectal artesunate by CHWs in 2018. The first-line treatment for severe malaria in public health facilities is intravenous artesunate; in its absence, injectable quinine may be used. The NMCP recommends the use of intramuscular artemether in private health facilities capable of providing severe malaria treatment. In 2015, according to HMIS data, 4.9 percent of malaria cases seen at health facilities were severe.

Due to the presence of multiple malaria-focused research centers, Burkina Faso has been the site of a substantial number of clinical trials aimed at measuring ACT efficacy. In contrast, routine therapeutic efficacy monitoring has been limited to only two published studies from the central site of Nanoro, conducted first in 2008–2010 and then in 2010–2012. Unusually, both therapeutic efficacy studies were explicitly designed to measure effectiveness rather than efficacy, without supervised administration of the ACTs. The table below summarizes the published ACT efficacy results from Burkina Faso, dating to the initial introduction of ACTs in Africa.

Table 6: Past ACT Efficacy and Effectiveness Results from Burkina Faso

Year	Site	PCR-uncorrected 28-day Efficacy			PCR-corrected 28-day Efficacy ¹		
		AL	AS/AQ	DP	AL	AS/AQ	DP
2004-2006	Koupela		92.8			95.7	
2005 ²	Bobo-Dioulasso	84.9			98.1		
2006 ³	Nouna		65.6			82.0	
2006-2007 ²	Bobo-Dioulasso	70.9		97.8	95.4		97.8
2007–2009	Nanoro	39.4	68.6	85.4	82.1	95.7	95.9
2008–2010 ⁴	Nanoro	46.1	58.4		81.9	85.1	
2009	Comoé	66.7			87.5		
2010–2012 ⁴	Nanoro	43.3	63.1		64.5	77.4	
2010–2013 ⁵	Data unavailable	43.5	65.4		86.0	95.4	
2011	Nouna		55.4			80.0	

¹Calculated using the WHO per-protocol definition. Might differ from the published results due to non-standard use of definitions by study authors

²Assessed in participants of all ages

³Assessed in children 6-10 years of age

⁴Unsupervised treatment

⁵Assessed in pregnant women

USAID funded a therapeutic efficacy study for 2016, which has been delayed to 2017. PMI plans to support biennial efficacy monitoring, with the next therapeutic efficacy study scheduled to occur in 2019. PMI will continue monitoring trends in ACT efficacy, and will decide, in conjunction with NMCP, which ACT to procure for Burkina Faso based on efficacy results and availability of ACTs to be procured.

Training, supervision, and Quality Control/Quality Assurance

Doctors and nurses receive instruction on malaria case management during their regular training. However, during the most recent end-use verification survey (EUV) conducted in May 2016, only 22 percent of interviewed healthcare workers reported being trained in malaria case management guidelines. With the large-scale reboot of the CHW program in late 2016, CHWs will be trained in malaria case management as part of the integrated management of childhood illness curriculum.

Healthcare workers at the CSPS level are supervised by district health authorities. In turn, the head nurse of each CSPS is tasked with the supervision of all the CHWs attached to his or her CSPS. Supervision of laboratory technicians conducting malaria microscopy falls under the purview of the DGPMML.

Commodity gap analysis

Table 7: RDT Gap Analysis

Calendar Year	2016	2017	2018
RDT Needs			
Total country population	19,034,397	19,632,147	20,244,079
Population at risk for malaria	19,034,397	19,632,147	20,244,079
PMI-targeted at-risk population	19,034,397	19,632,147	20,244,079
Total number of projected suspect cases of malaria ¹	9,038,687	9,322,535	9,613,118
Percent of fever cases tested with an RDT	82%	92%	96%
Total RDT Needs²	12,906,849	12,865,099	13,806,841
Partner Contributions			
RDTs carried over from previous year	4,096,650	-	49,369
RDTs from Government	-	1,600,000	2,000,000
RDTs from Global Fund	2,964,955	2,934,268	3,000,000
RDTs from Other Donors (World Bank)	-	830,200	855,300
RDTs planned with USAID funding	4,000,000	7,550,000	-
RDTs planned with PMI funding	-	-	8,000,000
Total RDTs Available	11,061,605	12,914,468	13,904,669
Total RDT Surplus (Gap)	(1,845,244)	49,369	97,828
¹ Back-calculated by dividing the expected number of malaria cases (see following table) by an average treatment rate (conflation of testing rate, positivity rate, and adherence to test result rate) of 87% in 2016, 86% in 2017, and 85% in 2018 ² Including a 9-month buffer in 2016, and a 6-month buffer in 2017 and 2018			

Table 8: ACT Gap Analysis

Calendar Year	2016	2017	2018
ACT Needs			
Total country population	19,034,397	19,632,147	20,244,079
Population at risk for malaria	19,034,397	19,632,147	20,244,079
PMI-targeted at-risk population	19,034,397	19,632,147	20,244,079
Total projected number of malaria cases ¹	7,849,648	8,014,397	8,179,898
Total ACT Needs²	13,736,884	12,021,596	12,269,847
Partner Contributions			
ACTs carried over from previous year	2,907,648	0	0
ACTs from Government	1,383,100	2,482,610	2,000,000
ACTs from Global Fund	1,405,079	1,396,451	4,000,000
ACTs from Other Donors (World Bank)	1,325,877	724,000	-
ACTs planned with USAID funding	4,398,000	4,800,000	-
ACTs planned with PMI funding	-	-	6,300,000
Total ACTs Available	11,419,704	9,403,061	12,300,000
Total ACT Surplus (Gap)	(2,317,180)	(2,618,535)	30,153
¹ Assuming a 449/1,000 base annual incidence (from 2015 HMIS data), an 15% increase in access to health services, an 8% decrease due to better malaria control, and a decrease due to better diagnostics of 13% in 2016, 14% in 2017, and 15% in 2018 ² Including a 9-month buffer in 2016, and a 6-month buffer in 2017 and 2018			

Plans and justification

PMI will procure approximately 58 percent of the RDT needs and 51 percent of the ACT needs in 2018. Additionally, PMI will procure an estimated 700,000 ampules of injectable artesunate, corresponding to approximately 233,000 treatments of severe malaria and covering half of the estimated 460,000 severe cases. To ensure an adequate stock of rectal artesunate, each of the approximately 8,000 CHWs providing malaria care will be provided five rectal artesunate suppositories. PMI will use the national medical stores (CAMEG) to store and distribute these commodities.

To address low reported rates of malaria-specific training amongst healthcare workers, PMI will train at least one healthcare worker per health facility in malaria case management, including IPTp. Additionally, PMI will train the head of each CSPS on how to introduce the use of rectal artesunate and community IPTp in CHWs attached to his or her CSPS. To ensure adherence to national malaria case management and IPTp guidelines, PMI will support quarterly supervisory visits from the district level to

the health facility level, coordinating with other partners. PMI will also support the head of each CSPA in performing regular monthly supervision of the CHWs attached to the CSPA, focusing on malaria case management at the community level, pre-referral use of rectal artesunate, and community IPTp.

Finally, to ensure high quality microscopy, PMI will work with the DGPMML to support regular quality assurance and quality control (QA/QC) of malaria microscopy at the hospital level.

Proposed activities with FY 2017 funding: (\$13,575,000)

1. *Procure RDTs*: Procure approximately 8 million RDTs at \$0.53 per RDT. (\$4,240,000)
2. *Procure ACTs*: Procure approximately 6.3 million ACTs. ACT to be determined based on efficacy results and availability. (\$6,300,000)
3. *Procure injectable artesunate for treatment of severe malaria*: Procure approximately 500,000 ampules of injectable artesunate at \$2.42 per ampule. (\$1,200,000)
4. *Procure rectal artesunate*: Procure approximately 40,000 rectal artesunate suppository capsules of 200mg at \$0.60 per capsule for pre-referral of severe malaria cases by CHWs. (\$25,000)
5. *Support storage and distribution of case management commodities*: Support the integrated public health system of CAMEG for storage and distribution of malaria commodities. (\$600,000)
6. *Train healthcare workers on malaria case management, rectal artesunate, and community IPTp*: Implement integrated training for healthcare workers on malaria case management, rectal artesunate and MIP, including community IPTp. (\$270,000)
7. *Support supervision of health facility workers*: Conduct integrated supervision visits on malaria case management and MIP. (\$270,000)
8. *Support supervision of CHWs for integrated malaria activities*: Support the monthly supervision visits of ~17,000 CHWs conducted by health facility workers. (\$620,000)
9. *Support Microscopy QA/QC*: Provide support for the national capacity to conduct microscopy QA/QC. (\$50,000)

B. Pharmaceutical management

NMCP/PMI objectives

PMI and NMCP recognize that universal confirmation and treatment of malaria cases can only be achieved in the context of a well-functioning pharmaceutical supply chain that minimizes the risk of stockouts.

Intervention overview/Current status

Management of malaria commodities in Burkina Faso is a collaboration between three government entities: NMCP, the DGPMML, and the CAMEG. In general terms, NMCP coordinates the effort; DGPMML is responsible for QA/QC of commodities and quantification of needs; and CAMEG is responsible for storage and distribution of the commodities. Because the majority of malaria

commodities are donor contributions, donor-funded partners provide technical assistance to the three government institutions in the context of malaria commodity storage and distribution.

Malaria commodities arriving in Burkina Faso are received in Ouagadougou by CAMEG, which has large, modern, and well-equipped warehouses in the capital. They are then pre-positioned at ten regional CAMEG depots, each staffed by at least one pharmacist and with adequate storage and distribution conditions. CAMEG is responsible for transporting supplies to the district level, but it does not have staff or facilities at the district level, and management of commodities is the responsibility of district health staff. For certain commodities such as ACTs, district health staff must submit orders to the regional CAMEG depots (a pull system); for other commodities such as RDTs and ITNs for routine distribution, a fixed quantity is transported by CAMEG to the district (a push system). At the final stage, health facility staff typically must travel to the district capital in order to pick up malaria commodities. Districts often do not have adequate conditions for storage and distribution of commodities.

CAMEG has a functioning Logistics Management and Information System (LMIS), running the Sage 1000 software. There is, however, no unified LMIS system that is used at the district level. In addition to the LMIS system, Burkina Faso is in the process of incorporating data on health facility consumption and stocks of malaria commodities into the HMIS system.

Plans and justification

PMI will support DGPML and the NMCP to improve national-level capacity in forecasting country needs of malaria commodities. Given current capacity at the national and regional level for management of malaria commodities, PMI's focus will be on strengthening district-level capacity to store and distribute malaria commodities.

Given the incorporation of stock and consumption data into the HMIS system, PMI will train regional, district, and health facility staff on the reporting and use of malaria commodity data to better maintain appropriate stock levels at health facilities.

Finally, PMI will support DGMPL in routine quality control testing of ACTs and RDTs at all levels of the supply chain to ensure good quality is maintained until the moment of administration to the end-user.

Proposed activities with FY 2017 funding: (\$910,000)

1. *Supply chain strengthening:* Improve district-level capacity to store and distribute malaria commodities, including renovation and outfitting of district warehouses and training of district health staff, and improve national-level capacity for quantification of commodity needs through training and support of quantification activities. (\$600,000)
2. *Training of regional, district, and health facility staff on malaria stock management:* Support the training of district and regional staff in integrated HMIS, which includes commodity data, and training of health facility staff in stock management and reporting of malaria commodity data. (\$160,000)
3. *Quality control of malaria commodities:* Support DGPML for quality control of ACTs and RDTs, to ensure that all commodities in country are of good quality, and that their quality is maintained through distribution to the lowest level. (\$150,000)

C. Other Interventions

Seasonal Malaria Chemoprevention (SMC)

NMCP/PMI objectives

NMCP's strategy is to provide SMC for children 3 to 59 months of age throughout the country.

Intervention overview/Current status

As a country largely lying in the Sahel and Sudanian savanna, Burkina Faso is in the prime zone identified by WHO as eligible for SMC. Burkina Faso began SMC in children 3 to 59 months of age with sulfadoxine-pyrimethamine amodiaquine (SP/AQ) in seven districts in 2014, expanding to 17 districts in 2015, and 54 in 2016. The campaigns occur during a four-month period corresponding to the peak malaria transmission period, and rely on the network of CHWs for distribution of the medication. To date, most funding has come from UNITAID, complemented with additional funds from the Global Fund and the World Bank. UNITAID funding is expected to end by 2018, and the NMCP requested PMI to provide support for SMC to cover part of the consequent gap.

Plans and justification

PMI will support four rounds of SMC for approximately 500,000 children between 3 and 59 months of age, representing approximately one sixth of the target population nationwide. According to a UNITAID costing study, the full cost of SMC per child per round in Burkina Faso is around \$4.00, of which \$1.50 are commodity costs. PMI will support both the procurement of SP/AQ, as well as costs related to the distribution campaign itself, including supervision, training, and transport.

Proposed activities with FY 2017 funding: (\$2,630,000)

1. *Procure SP/AQ*: Procure approximately 2,400,000 treatments of SP/AQ at \$0.38 per treatment. (\$900,000)
2. *Implement SMC campaign*: Support the full implementation of a SMC campaign targeting 500,000 children between 3 and 59 months of age, including SBCC mobilization and messaging, distribution, training, supervision, and evaluation. (\$1,730,000)

4. Health system strengthening and capacity building

NMCP/PMI objectives

PMI supports a broad array of health system strengthening activities that cut across intervention areas, such as training of health workers, supply chain management, health information system strengthening, drug quality monitoring, and NMCP capacity building. PMI works to enable countries to implement their own programs rather than building parallel or stand-alone systems. This approach allows countries to possess appropriately-skilled human resources and the necessary infrastructure to plan, implement, and monitor progress of their malaria control activities.

In Burkina Faso, health system strengthening and capacity building are represented throughout the NMCP's soon-to-be-validated 2016-2020 National Strategic Plan. Objective three focuses directly on capacity building: reinforce the NMCP's management capacity to effectively oversee all malaria activities in country, while other objectives incorporate health system strengthening and capacity building into their activities. These fall under the objectives of reducing malaria morbidity and malaria

mortality by 40% by 2020. Under objective three, the NMCP strives to strengthen capacity for communication, commodity security, evaluation and research, epidemic response, emergency situations, and NMCP program management. Capacity building objectives will be attained through a variety of approaches including trainings, workshops, advocacy, procurement, and evaluation.

Intervention overview/Current status

NMCP staff have struggled in recent years to effectively lead the full portfolio of malaria control activities in Burkina Faso. Due to high staff turnover, yearly trainings and refresher trainings of staff are required to maintain technical and management capacity. The 2016-2020 National Strategic Plan highlights the significant gap in human resources and the need to hire many new staff: entomologist, procurement specialist, communication specialist, pharmacist, internal controller, secretary, physicians specialized in public health and epidemiology, accountants, and drivers. With additional resources and increased program growth, an additional and very important position is that of Deputy Director which would allow NMCP activities to move forward, even in the Coordinator's absence. The creation of this position would allow the Coordinator to maintain a global perspective while allowing the Deputy Director to oversee daily activities. The NMCP Coordinator and many NMCP staff have expressed the challenges associated with the NMCP's position under the Directorate of Health and would like to see the stature of the NMCP raised to the same level of the Directorate of Health, under the General Secretary of the MoH. Health system strengthening and capacity building in Burkina Faso remain crucial for the country to take ownership and lead malaria control efforts. The capacity to obtain high quality data is low as is the ability to make data driven programmatic changes.

In the past year, USAID malaria funds have supported capacity building in Burkina Faso; this has included improving skills and performance of health care providers and supervisors on malaria control guidelines, increasing capacity of the NMCP to effectively manage malaria programs, and improving supply chain effectiveness and data quality.

Table 9: Health Systems Strengthening Activities

HSS Building Block	Technical Area	Description of Activity
Health Services	Case Management	PMI will support training and supervision of health workers on malaria case management, rectal artesunate, and community IPTp. PMI will procure RDTs and ACTs to fill commodity gaps, and will provide support for the national capacity to conduct microscopy QA/QC. PMI will support the procurement of SP/AQ and the implementation of SMC.
Health Workforce	Health Systems Strengthening	PMI will build health workforce capacity by providing training (SM&E, communication, entomology, budget/financial management) and support for staff. PMI will establish 13 regional-level malaria focal points, to coordinate and oversee all malaria activities in coordination with the NMCP. Two third year malaria volunteers will work on implementation of malaria interventions.
Health Information	Monitoring and Evaluation	PMI will support DGPML for quality control of ACTs and RDTs, to ensure that all commodities in country are of good quality, and that their quality is maintained through distribution to the lowest level. PMI will support quarterly malaria data review meetings at each district to ensure data quality control. Monitor the availability and utilization of key antimalarial commodities at the health facility level.
	Operational Research	PMI will support the NMCP by conducting an OR study of SMC efficacy in children from 5-10 years.
Essential Medical Products, Vaccines, and Technologies	Case Management	PMI will improve district-level capacity to store and distribute malaria commodities and improve national-level capacity for quantification of commodity needs. PMI will support the training of district and regional staff in integrated HMIS, which includes commodity data, and training of health facility staff in stock management and reporting of malaria commodity data.
Health Finance	Health Systems Strengthening	PMI will work with the Global Fund and other partners to ensure coverage of key program areas and commodities.
Leadership and Governance	Health Systems Strengthening	PMI will work with the NMCP to build leadership and governance capabilities.

Plans and justification

The NMCP requires ongoing skills development to effectively manage the malaria program in country. Specific courses and learning opportunities will be selected to address key gaps in knowledge with the aim of strengthening the NMCP to more effectively lead malaria control efforts. In an effort to strengthen not only the NMCP core staff, but also the entire malaria program at all its levels, regional malaria focal points will be recruited in each of the 13 health regions to decentralize malaria specific knowledge and oversight. They will serve as an extension of the NMCP and PMI resident advisors, routinely reporting back to the NMCP and PMI. The malaria focal points, along with district level

malaria review meetings, will help to strengthen data quality and control. Monitoring availability and utilization of key antimalarial commodities at the health facility level will also be conducted.

At the community level, PMI will support training and supervision of health workers on malaria case management, rectal artesunate, and community IPTp. PMI will collaborate with Peace Corps by funding two third year volunteers who will coordinate all Peace Corps malaria efforts. The volunteers will assist the NMCP in disseminating messages and provide services to hard-to-reach populations as well as identify unmet needs. In this partnership, Burkina Faso benefits from the community level presence of 110 volunteers, 34 of whom work directly on community health projects such as net care, improved prevention and care-seeking behavior, training women's groups, active detection of fever cases, and village wide motivation in the fight against malaria.

Proposed activities with FY 2017 funding: (\$460,000)

1. *Reinforce the capacity of the NMCP by providing training and support for staff:* Provide training for NMCP's staff in monitoring and evaluation, communication, entomology, and also in budget and financial management. This will also include dissemination of malaria-related research in Burkina Faso. (\$100,000)
2. *Support regional-level malaria focal points:* Regional malaria focal points will be hired in each of the 13 health regions and will provide valuable support to the NMCP in disseminating malaria information and helping to ensure higher data quality standards. (\$260,000)
3. *Update malaria training modules:* Funds will support the updating of existing pre-service and refresher training malaria modules, to align with WHO and Burkina Faso's current strategic plan. PMI resources will support the revision workshop, validation process, and printing/dissemination of the new material. (\$100,000)

5. Social and behavior change communication

NMCP/PMI objectives

PMI supports a range of SBCC activities to increase the uptake of malaria interventions and contribute to reductions in malaria morbidity and mortality. Key areas of PMI support for SBCC include: developing or revising national malaria SBCC strategies; capacity building and strengthening for SBCC; implementing SBCC to target improvement in intervention uptake; monitoring and evaluating SBCC; and SBCC OR.

SBCC falls under the third objective of the NMCP's newly written 2016-2020 National Strategic Plan: By 2020, strengthen the capacity of the NMCP to effectively manage the fight against malaria. The strategy emphasizes the key areas of advocacy, social mobilization, and behavior change communication, and serves as a guideline for all malaria partners in Burkina Faso. Through advocacy, the NMCP will build malaria support from administrators, traditional and religious leaders, media organizations, and public and private companies. Advocating for the support of companies is a new approach the NMCP is undertaking to bring additional resources for the implementation of malaria prevention activities. Social mobilization will strengthen the skills of those relaying SBCC messages such as CHWs, community-based organizations, traditional healers, teachers, and media professionals with the aim of increasing malaria knowledge and care-seeking behavior. The NMCP will conduct

behavior change communication using both interpersonal behavior as well as mass media campaigns. An evaluation is planned to assess SBCC effectiveness.

Burkina Faso's 2011-2015 National Communication Strategy will be revised after the completion of the 2016-2020 National Strategic Plan.

The NMCP has identified the following SBCC indicators:

- 60 percent of mothers and caregivers can identify the signs and symptoms of severe malaria in children under five
- 90 percent of the population knows the cause of malaria
- 100 percent of the population knows three signs of malaria
- 100 percent of the population knows two methods of malaria prevention
- 90 percent of the population knows the advantages of receiving malaria treatment in the first 24 hours of illness

Intervention overview/Current status

According to the 2014 MIS in Burkina Faso, 80 percent of women aged 15-49 know fever is a principal symptom of malaria, 49 percent of women know mosquito bites transmit malaria, and 84 percent of women know sleeping under an ITN helps prevent malaria infection. Although 90 percent of households report owning an ITN, 69 percent of the population reported actually sleeping under one. While IPTp information is widely disseminated, treatment of pregnant women with SP remains fairly low. Sixty eight percent of pregnant women reportedly received IPTp1, 48 percent IPTp2, and 22 percent IPTp3. In Burkina Faso, knowledge of how to prevent and treat malaria is higher than the actual prevention and care-seeking behavior itself.

In the past year, USAID malaria funds in Burkina Faso have supported key SBCC activities. This has included strengthening central level capacity to develop and effectively use culturally-appropriate and cost-effective SBCC messages, based on findings from the TRaC survey, with messages focused on prevention, promotion of IPTp, and expectations around RDT use for case confirmation. Activities have also focused on increasing demand for malaria services and products at all levels of the health system as well as reinforcing capacity development of providers, CHWs, and community leaders in interpersonal communication skills to provide targeted messages, especially to pregnant women and children under five years of age.

Plans and justification

With FY 2017 funds, PMI will continue to support a range of SBCC activities while emphasizing the use of TRaC survey results to address specific behavior barriers and improve uptake to have a greater impact on malaria interventions. In Burkina Faso, knowledge of malaria symptoms and treatment options are high, while barriers to prevention and care-seeking, through the use of RDTs, IPTp, and ACTs, remain relatively low. PMI will support a network of CHWs and community organizations that will use an innovative mix of interpersonal communication delivery platforms including home visits, community theatre, village competitions, champion communities, and school-based information campaigns. PMI will also enable facility and community health care providers to provide messages through training and dissemination of job aids and will encourage collaboration between service delivery providers and those creating social and behavior change messaging. In line with the NMCP's emphasis on social mobilization, PMI will encourage the active involvement of community members in all SBCC activities.

Besides more general SBCC messaging noted above, PMI will work specifically to inform the population about SMC and IRS campaigns. Community sensitization and mobilization for SMC will be done prior to and during the July to October SMC campaign season and will inform the population of the prevention benefits of SMC. Special emphasis will be placed on direct communication with mothers and caregivers to reduce behavior barriers and ensure high adherence rates. IRS messaging will be done pre-spray and will inform beneficiaries of the health benefits of IRS and what to expect during spray campaigns. SBCC messaging will seek to address population concerns and ensure high IRS acceptance. Given low numbers of IPTp3 uptake, PMI will seek to address specific barriers to use and address SBCC messaging accordingly.

Proposed activities with FY 2017 funding: (\$500,000)

1. *Support malaria SBCC activities:* Support the NMCP to implement their information, (IEC)/SBCC strategy, to increase awareness of malaria and the uptake of quality malaria prevention and treatment interventions through awareness campaigns and the identification of specific behavior change barriers. (\$500,000)

6. Surveillance, monitoring, and evaluation

NMCP/PMI objectives

PMI is committed to supporting the NMCP in collecting high-quality, complete, and timely data on malaria morbidity, mortality, and commodity stocks from health facilities and CHWs. In addition, PMI will work with NMCP to support household surveys, health facility surveys, and efficacy studies to complement the routine surveillance data.

Intervention overview/Current status

Malaria surveillance, monitoring, and evaluation activities are led by the M&E team at the NMCP, which oversees the data sources providing routine malaria data, as well as coordinating surveys and other studies aimed at monitoring NMCP interventions.

Routine data

Prior to 2016, NMCP relied on a monthly parallel routine malaria information system, BD-malaria. However, with the adoption of the district health information system two platform, for the country's HMIS (known by its French acronym ENDOS), the parallel malaria database was phased out in early 2016, and the HMIS is currently the primary source for routine malaria data for NMCP. The HMIS is digitized down to the district level, but is still paper-based at the health-facility level. It is able to record and report data on malaria case management performed at the community level, and is in the process of being adapted to also be able to record and report data on malaria commodity stocks and consumption. Supervision and control of data quality by NMCP has been limited due to lack of funding and MoH staff dedicated to malaria at the regional or district levels.

In addition to HMIS, there is a functioning, WHO-supported Integrated Disease Surveillance and Response system in country, which includes malaria as one of the notifiable diseases. This weekly, telephone-based surveillance system serves as a secondary source for routine malaria data.

Surveys

The last nationwide DHS was conducted in 2010, with the last MIS conducted in 2014. The next nationwide survey is an MIS planned for 2017, which is being funded primarily by the Global Fund, with additional support from USAID.

No malaria-specific health facility surveys have been done recently due to lack of funds. However, since 2015, USAID has been sponsoring quarterly end-user verification surveys (EUVs).

Demographic surveillance sites (DSS)

Burkina Faso is the site of four established DSS: Nouna since 1993 (run by the *Centre de Recherche en Santé de Nouna*), Oubritenga since 1993 (*Centre National de Recherche et de Formation sur le Paludisme*), Nanoro since 2009 (*Centre de Recherche en Santé de Nanoro*), and Ouagadougou since 2008 (University of Ouagadougou). Although most of these sites perform malaria research, it is not clear how the data from these sites inform NMCP policy.

Table 10: Surveillance, Monitoring, and Evaluation Data Sources

Data Source	Survey Activities	Year								
		2010	2011	2012	2013	2014	2015	2016	2017 7	2018
Household surveys	Demographic Health Survey (DHS)	X*								
	Malaria Indicator Survey (MIS)					X*			(X)*	
	EPI survey									
Health Facility and Other Surveys	School-based malaria survey									
	Health facility survey									(X)
	SPA survey									
	EUV survey						X*	X*	(X)*	(X)
Malaria Surveillance and Routine System Support	Support to malaria surveillance system									(X)*
	Support to HMIS								(X)*	(X)
Therapeutic efficacy monitoring	<i>In vivo</i> efficacy testing	X*	X*	X*					(X)*	
Entomology	Entomological surveillance and resistance monitoring	X	X	X	X	X	X	X	(X)	(X)
Other Data Sources	Malaria Impact Evaluation									

* Non-PMI-funded activity

Parentheses denote planned activities and non-parentheses denote completed activities

Table 11: Routine Surveillance Indicators for 2015

Indicators	Value	Comments
1. Total number of reported malaria cases Data source: HMIS	8,285,251	
Total diagnostically confirmed cases	No accurate data available	Confirmation of cases has not been accurately collected. The issue has been addressed and in 2016 accurate data will be available.
Total clinical/presumed/unconfirmed cases	Not available	See above
Outpatient number of reported malaria cases	8,286,453	
Diagnostically confirmed	6,922,857 (83.5%)	
Clinical/presumed/unconfirmed	1,363,596 (16.4%)	
Inpatient number of reported malaria cases	424,916	
Diagnostically confirmed	N/A	See above
Clinical/presumed/unconfirmed	N/A	See above
2. Total number of reported malaria deaths Data source: HMIS	5,379	
Diagnostically confirmed	N/A	Malaria deaths not stratified by confirmed/not confirmed
Clinical/presumed/unconfirmed	N/A	
3. Malaria test positivity rate (outpatients) Data source: HMIS	83.5%	
Numerator: Number of outpatient confirmed malaria cases	6,922,857	
Denominator: Number of outpatients receiving a diagnostic test for malaria (RDT or microscopy)	8,290,188	
4. Completeness of monthly health facility reporting Data source: HMIS	94.7%	
Numerator: Number of monthly reports received from health facilities	31,623	
Denominator: Number of health facility reports expected (i.e., number of facilities expected to report multiplied by the number of months considered)	33,394	

Plans and justification

PMI will support the NMCP's goals of improving routine malaria data quality through the implementation of quarterly data quality monitoring activities, which will take place in one district per quarter. The district will be chosen based on inconsistencies noted in the HMIS database. These visits will allow the NMCP, district, and health facility staff to jointly review malaria data collected and reported at the health facility level, and will focus on assessing data quality, and data analysis by health facility and district staff. In addition, PMI will support the NMCP to conduct data quality supervision visits to one district per region, for a total of 13 districts per year. This support is aimed at establishing a

pool of competent personnel capable of leading the data validation meetings and supervisions in other districts. The funds will cover fuel, transportation, lodging, per diems, and tea breaks. PMI will continue to advocate with other malaria partners to share the cost of this activity and strengthen malaria data quality nationwide.

To provide detailed information on the quality of malaria case management and health facility readiness, PMI will support a malaria-specific, nationally representative, health facility survey. The results of the survey will allow the NMCP and its partners to identify strengths and weaknesses in malaria care delivery, and better design training and supervision activities.

In addition, PMI will support quarterly EUVs to provide timely data on the availability and utilization of key antimalarial commodities at the health facility level. PMI will monitor the commodity data available from the HMIS, and will compare the quality and timeliness of the HMIS commodity data to the EUV results to assess the utility of future support for EUVs.

Finally, PMI will support two TDYs for CDC staff to travel to Burkina Faso to provide technical assistance in supporting NMCP M&E activities.

Proposed activities with FY 2017 funding: (\$921,000)

1. *Support data quality assurance missions at the district level:* Support quarterly malaria data review meetings at each district to ensure data quality control. (\$326,000)
2. *Conduct health facility survey:* Implement a nationally-representative survey of health facilities to assess quality of malaria case management and health facility readiness. (\$125,000)
3. *Support end-use verification:* Monitor the availability and utilization of key antimalarial commodities at the health facility level. (\$100,000)
4. *Conduct evaluation of malaria bilateral project:* Conduct a project evaluation of the current malaria project, in order to glean lessons learned and success stories, to inform future procurements. (\$350,000)
5. *Provide technical assistance for SM&E:* Two CDC TDYs to provide technical support for SM&E activities. (\$20,000)

7. Operational research

NMCP/PMI objectives

The NMCP strategy contains a description of the importance of OR and their collaboration with various research institutions that conduct OR related to malaria in Burkina Faso. The principal research institutions with whom they work include: the CNRFP, *Centre Muraz*, IRSS and CRSN. These research institutes have past, current or future plans to conduct OR, in partnership with the NMCP, in the following areas: insecticide resistance, therapeutic efficacy of antimalaria drugs, SBCC, morbidity/mortality due to malaria, MIP (including IPTp) and case management in health facilities and at the community-level.

Table 12: PMI-funded Operational Research Studies

Ongoing OR Studies			
Title	Start date (est.)	End date (est.)	Budget
Community IPTp	September 2016	September 2018	\$415,000 ¹

¹Includes FY 2015 and FY 2016 core-funding plus FY 2016 and FY 2017 country-level funding

Intervention overview/Current status

There is currently one OR activity that PMI is supporting in Burkina Faso, which is a study to determine whether utilization of CHWs for delivery of IPTp in three districts can increase coverage of three or more IPTp doses compared to IPTp delivery only at ANC, and without having a negative impact on ANC attendance. This study began in September 2016, and focuses on rural areas, which was determined based on data gathered from the 2010 DHS indicating that around 44 percent of rural women never attend ANC during their pregnancy. This activity was proposed by the MIP technical working group for PMI, using FY 2015 core funds. Country level funds were included in FY 2016 to help support this study. The expectation is that results will inform whether it would be advisable to scale-up delivery of IPTp at the community level, particularly in more rural areas where access to ANC is limited. The plan of this OR study is to conduct research for two years and then assess and advise on next steps. Also, if scale up is advised within country, WHO would have to update its policy guidance on delivery of IPTp to include community level delivery, before scale up could actually take place.

Plans and justification

Using FY 2017 funding, PMI will support the final year of the community IPTp OR activity. Additional PMI core funds are also being added to compliment in country funding. It is expected results from the study will be available in late 2018.

Proposed activities with FY 2017 funding: (\$85,000)

1. *Support the community IPTp study:* Support the NMCP by continuing to fund this OR study, looking at the utilization of CHWs for IPTp administration at the community level. (\$85,000)

8. Staffing and administration

Two health professionals serve as Resident Advisors (RAs) to oversee PMI in Burkina Faso, one representing CDC and one representing USAID. In addition, one or more Foreign Service Nationals (FSNs) work as part of the PMI team. 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 RA 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 interagency professional staff work together to oversee all technical and administrative aspects of PMI, including finalizing details of the project design, implementing malaria prevention and treatment activities, monitoring and evaluation of outcomes and impact, reporting of results, and providing guidance and direction to PMI implementing 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 RAs, 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. Technical expertise housed in Atlanta and Washington complements PMI programmatic efforts.

The two PMI RAs are physically based within the USAID health office but are expected to spend approximately half of their time with and providing TA to the NMCPs and implementing partners, including time in the field monitoring program implementation and impact.

The number of locally-hired staff and necessary qualifications to successfully 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 U.S. Global Malaria Coordinator.

Proposed activities with FY 2017 funding: (\$1,200,000)

1. *Staffing and administration-CDC:* Funding will support the hiring and salary of one CDC resident advisor. (\$400,000)
2. *Staffing and administration-USAID:* Funding will support the salaries of one USAID resident advisor and one local staff malaria specialist and will also include ICASS costs. (\$800,000)

Table 1: Budget Breakdown by Mechanism

**President's Malaria Initiative – BURKINA FASO
Planned Malaria Obligations for FY 2017**

Mechanism	Geographic Area	Activity	Budget (\$)	%
TBD - IRS	Nationwide	Assessment of routine ITN distribution system	\$ 50,000	18%
		Entomological monitoring	\$ 350,000	
	Up to 5 Districts	Implementation of IRS	\$ 4,015,000	
CDC/IAA	Nationwide	Technical assistance for entomology	\$ 29,000	2%
		Provide technical assistance for SM&E	\$ 20,000	
		Staffing & Administration	\$ 400,000	
PSM	Eligible SMC Districts	Procure SP/AQ	\$ 900,000	58%
	Nationwide	Procurement of ITNs	\$ 200,000	
		Procurement of SP	\$ 75,000	
		Procure RDTs	\$ 4,240,000	
		Procure ACTs	\$ 6,300,000	
		Procure injectable artesunate for treatment of severe malaria	\$ 1,200,000	
		Procure rectal artesunate	\$ 25,000	
		Support storage and distribution of case management commodities	\$ 600,000	
		Supply chain strengthening	\$ 600,000	
		Training of regional, district and health facility staff on malaria stock management	\$ 160,000	
		Support End-Use Verification	\$ 100,000	

IMC	Eligible SMC Districts	Implement SMC campaign	\$ 1,730,000	16%
	Nationwide	Train healthcare workers on malaria case management, rectal artesunate, and community IPTp	\$ 270,000	
		Support supervision of health facility workers	\$ 270,000	
		Support Microscopy QA/QC	\$ 50,000	
		Support supervision of CHWs for integrated malaria activities	\$ 620,000	
		Reinforce the capacity of the NMCP by providing training and support for staff	\$ 100,000	
		Support regional-level malaria focal points	\$ 260,000	
		Update malaria training modules	\$ 100,000	
		Support malaria SBCC activities	\$ 500,000	
Support for community IPTp OR study	\$ 85,000			
PQM	Nationwide	Quality control of malaria commodities	\$ 150,000	1%
HEARD	Nationwide	Conduct evaluation of malaria bilateral project	\$ 350,000	1%
IMC	Nationwide	Conduct health facility survey	\$ 125,000	2%
		Support data quality assurance missions at the district level	\$ 326,000	
USAID	Nationwide	Staffing & Administration	\$ 800,000	3%
Total			\$ 25,000,000	100%

Table 2: Budget Breakdown by Activity

**President's Malaria Initiative – BURKINA FASO
Planned Malaria Obligations for FY 2017**

Proposed Activity	Mechanism	Budget		Geographic Area	Description
		Total \$	Commodity \$		
PREVENTIVE ACTIVITIES					
VECTOR MONITORING AND CONTROL					
Entomologic Monitoring					
Entomological monitoring	TBD - IRS	\$350,000	\$0	Nationwide	Support comprehensive nationwide vector surveillance and insecticide resistance testing in a representative sample of entomological sentinel sites (TBD). This activity will also support the development and implementation of an Insecticide Resistance Management (IRM) Plan, in collaboration with the NMCP and in country entomology partners.
Technical assistance for entomology	CDC/IAA	\$29,000	\$0	Nationwide	Two CDC TDYs to provide technical support for the IRM plan, including entomological monitoring.
Subtotal Entomology		\$379,000	\$0		

Insecticide-Treated Nets					
Procurement of ITNs	PSM	\$200,000	\$200,000	Nationwide	Procure 50,000 ITNs for routine distribution.
Assessment of routine ITN distribution system	TBD - IRS	\$50,000	\$0	Nationwide	Conduct an assessment of the routine ITN distribution system, and provide TA as needed to support the strengthening of this system.
Subtotal ITNs		\$250,000	\$0		
Indoor Residual Spraying					
Implementation of IRS	TBD - IRS	\$4,015,000	\$1,500,000	Up to 5 Districts	Conduct blanket IRS with a susceptible insecticide covering approximately 250k structures in up to 5 districts. Districts will be selected based on entomological and epidemiological data by the NMCP and stakeholders.
Subtotal IRS		\$4,015,000	\$1,500,000		
Seasonal Malaria Chemoprevention					
Procure SP/AQ	PSM	\$900,000	\$900,000	Eligible SMC Districts	Procure approximately 2,400,000 treatments of SP/AQ at \$0.38 per treatment.
Implement SMC campaign	IMC	\$1,730,000	\$0	Eligible SMC Districts	Support the full implementation of a SMC campaign targeting ~500,000 children between 3 and 59 months of age, including distribution, training, supervision, and evaluation.
Subtotal SMC		\$2,630,000	\$900,000		

Malaria in Pregnancy					
Procurement of SP	PSM	\$75,000	\$75,000	Nationwide	Procure SP for approximately 167k pregnant women for distribution at the community level. Funds will compliment other funding sources and contribute to the scale-up of community IPTp.
Training of healthcare workers on MIP	IMC	\$0	\$0	Nationwide	Costs covered under integrated training Case Management activities.
Supervision of healthcare workers and CHWs on MIP	IMC	\$0	\$0	Nationwide	Costs covered under integrated supervision Case Management activities.
Subtotal Malaria in Pregnancy		\$75,000	\$75,000		
SUBTOTAL PREVENTIVE		\$7,349,000	\$2,475,000		
CASE MANAGEMENT					
Diagnosis and Treatment					
Procure RDTs	PSM	\$4,240,000	\$4,240,000	Nationwide	Procure approximately 8 million RDTs at \$0.53 per RDT, including freight, insurance, and customs clearance.
Procure ACTs	PSM	\$6,300,000	\$6,300,000	Nationwide	Procure approximately 6.3 million ACTs, including freight, insurance, and customs clearance.
Procure injectable artesunate for treatment of severe malaria	PSM	\$1,200,000	\$1,200,000	Nationwide	Procure approximately 500,000 ampules of injectable artesunate, including freight, insurance, and customs clearance.

Procure rectal artesunate	PSM	\$25,000	\$25,000	Nationwide	Procure approximately 40,000 rectal artesunate suppository capsules of 200mg at \$0.60 per capsule for pre-referral of severe malaria cases by CHWs.
Support storage and distribution of case management commodities	PSM	\$600,000	\$0	Nationwide	Support the integrated public health system of CAMEG for storage and distribution of malaria commodities.
Train healthcare workers on malaria case management, rectal artesunate, and community IPTp	IMC	\$270,000	\$0	Nationwide	Implement integrated training for healthcare workers on malaria case management, rectal artesunate and MIP, including community IPTp.
Support supervision of health facility workers	IMC	\$270,000	\$0	Nationwide	Conduct integrated supervision visits on malaria case management and MIP.
Support supervision of CHWs for integrated malaria activities	IMC	\$620,000	\$0	Nationwide	Support the monthly supervision visits of ~17,000 CHWs conducted by health facility workers.
Support Microscopy QA/QC	IMC	\$50,000	\$0	Nationwide	Provide support for the national capacity to conduct microscopy QA/QC.
Subtotal Diagnosis and Treatment		\$13,575,000	\$11,765,000		
Pharmaceutical Management					
Supply chain strengthening	PSM	\$600,000	\$0	Nationwide	Improve district-level capacity to store and distribute malaria commodities and improve national-level capacity for quantification of commodity needs.

Training of regional, district and health facility staff on malaria stock management	PSM	\$160,000	\$0	Nationwide	Support the training of district and regional staff in integrated HMIS, which includes commodity data, and training of health facility staff in stock management and reporting of malaria commodity data.
Quality control of malaria commodities	PQM	\$150,000	\$0	Nationwide	Support DGPML for quality control of ACTs and RDTs, to ensure that all commodities in country are of good quality, and that their quality is maintained through distribution to the lowest level.
Subtotal Pharmaceutical Management		\$910,000	\$0		
SUBTOTAL CASE MANAGEMENT		\$14,485,000	\$11,765,000		
HEALTH SYSTEM STRENGTHENING / CAPACITY BUILDING					
Reinforce the capacity of the NMCP by providing training and support for staff	IMC	\$100,000	\$0	Nationwide	Support to NMCP's staff for training needs, including participation of more national/regional/district staff in the M&E training held annually in Burkina Faso. This will also support professional development, including national dissemination & information sharing of malaria-related research in Burkina Faso.

Support regional-level malaria focal points	IMC	\$260,000	\$0	Nationwide	Establish 13 regional-level malaria focal points, to coordinate and oversee all malaria activities, in coordination with the NMCP. Focal points will be seconded and integrated into the existing MoH structure at the regional level. Estimates 1 focal point for all 13 regions of the country.
Update malaria training modules	IMC	\$100,000	\$0	Nationwide	Facilitate the updating of the existing malaria training modules, to better align with WHO and the country's malaria strategy. Training materials will be used for pre-service, as well as refresher trainings, of health facility staff. Funding will include revisions, validation workshops, printing and dissemination of updated materials.
SUBTOTAL HSS & CAPACITY BUILDING		\$460,000	\$0		
SOCIAL AND BEHAVIOR CHANGE COMMUNICATION					
Support malaria SBCC activities	IMC	\$500,000	\$0	Nationwide	Support the NMCP to implement their IEC/BCC strategy, to increase awareness of malaria and the uptake of quality malaria prevention and treatment interventions.
SUBTOTAL SBCC		\$500,000	\$0		

SURVEILLANCE, MONITORING, AND EVALUATION					
Support data quality assurance missions at the district level	IMC	\$326,000	\$0	Nationwide	Support quarterly malaria data review meetings at each district to ensure data quality control.
Conduct health facility survey	IMC	\$125,000	\$0	Nationwide	Implement a nationally-representative survey of health facilities to assess quality of malaria case management and health facility readiness.
Support End-Use Verification	PSM	\$100,000	\$0	Nationwide	Monitor the availability and utilization of key anti-malarial commodities at the health facility level.
Conduct evaluation of malaria bilateral project	HEARD	\$350,000	\$0	Nationwide	Implement an evaluation of the current malaria bilateral project, to inform the design of the follow-on project, slated for award in mid-2019.
Provide technical assistance for SM&E	CDC/IAA	\$20,000	\$0	Nationwide	Two CDC TDYs to provide technical support for SM&E activities.
SUBTOTAL SM&E		\$921,000	\$0		
OPERATIONAL RESEARCH					
Support for community IPTp OR study	IMC	\$85,000	\$0	Nationwide	Provide support for the community IPTp pilot, which is also PMI core funded. Funds will facilitate monitoring and supervision of partners during the study, which began in mid-2017.
SUBTOTAL OR		\$85,000	\$0		
IN-COUNTRY STAFFING AND ADMINISTRATION					
Staffing & Administration	CDC/IAA	\$400,000	\$0	Nationwide	Support for CDC annual staffing and administration.

	USAID	\$800,000	\$0	Nationwide	Support for USAID annual staffing and administration, including ICASS and support for PD&L.
SUBTOTAL IN-COUNTRY STAFFING		\$1,200,000	\$0		
GRAND TOTAL		\$25,000,000	\$14,240,000		