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

# PRESIDENT'S MALARIA INITIATIVE

# Malaria Operational Plan (MOP)

# MALAWI

# Year Six -- FY 2012

# September 21, 2011

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## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| ACT | artemisinin-based combination therapy |
| AL | artemether-lumefantrine |
| ANC | antenatal care |
| BCC | behavior change communication |
| CBO | community-based organizations |
| CCM | community case management |
| CDC | Centers for Disease Control and Prevention |
| CMS | Central Medical Stores |
| DHS | Demographic and Health Survey |
| DOT | directly observed therapy |
| EHP | essential health package |
| EPI | Expanded Program on Immunization |
| FANC | focused antenatal care |
| FY | fiscal year |
| GHI | Global Health Initiative |
| Global Fund | Global Fund to fight AIDS, Tuberculosis and Malaria |
| GoM | Government of Malawi |
| HIV/AIDS | human immunodeficiency virus/acquired immune deficiency syndrome |
| HMIS | health management information system |
| HSA | health surveillance assistant |
| HSSP | Health Sector Strategic Plan |
| IEC | information, education, communication |
| IPTp | intermittent preventive treatment in pregnancy |
| IPTp2 | two doses of intermittent preventive treatment in pregnancy |
| IRS | indoor residual spraying |
| ITN | insecticide-treated net |
| LLIN | long-lasting insecticide-treated net |
| M&E | monitoring and evaluation |
| MAC | Malaria Alert Centre |
| MICS | Multiple Indicator Cluster Survey |
| MIS | Malaria Indicator Survey |
| MoH | Ministry of Health |
| NGO | non-governmental organization |
| NMCP | Malawi National Malaria Control Program |
| OTSS | outreach training and support supervision |
| PEPFAR | U.S. President's Emergency Plan for AIDS Relief |
| PMI | President's Malaria Initiative |
| PMTCT | prevention of mother-to-child transmission (HIV) |
| PSC | parallel supply chain |
| QA/QC | quality assurance/quality control |
| RBM | Roll Back Malaria |
| RDT | rapid diagnostic test |
| SP | sulfadoxine-pyrimethamine |
| SWAp | sector-wide approach |

| | |
|---|---|
| UNICEF | United Nations Children's Fund |
| USAID | U.S. Agency for International Development |
| USG | United States Government |
| WHO | World Health Organization |

## EXECUTIVE SUMMARY

Malaria prevention and control is a major foreign assistance objective of the United States Government (USG) and families around the world. The President's Malaria Initiative (PMI) is a core component of the GHI, along with HIV/AIDS, maternal and child health, tuberculosis, and neglected tropical diseases. PMI was launched in June 2005 as a five-year, $1.2 billion initiative to scale up rapidly malaria prevention and treatment interventions and to reduce malaria-related mortality by 50% in 15 high-burden countries in sub-Saharan Africa. With passage of the 2008 Lantos-Hyde Act, funding for PMI has now been extended through FY 2014 and, as part of the GHI, the goal of the PMI is to achieve a 70% reduction in the burden of malaria in the original 15 countries by 2015.

Malawi became a PMI focus country in 2006. It is also one of eight countries from around the world in fiscal year FY 2011 to be selected as a "GHI Plus" country, and it will receive additional technical and management support to quickly implement GHI's approach. Malaria is holoendemic in Malawi. Large-scale implementation of artemisinin-based combination therapies (ACTs) and intermittent preventive treatment in pregnancy (IPTp), led by the Ministry of Health's (MoH) National Malaria Control Program (NMCP), began in 2007 and have proceeded rapidly with support from the PMI and other partners, in spite of the country's weak health infrastructure. PMI continues to make a notable contribution to the distribution of long-lasting insecticide treated nets (LLINs) through antenatal clinics and immunization programs. Malawi boasts high rates of LLIN ownership and IPTp uptake in comparison with other countries in sub-Saharan Africa.

Despite these successes, the MoH estimates that malaria still accounts for over a third of all outpatient visits with approximately six million suspected cases treated each year. Additionally, malaria remains the number one cause of hospital admissions among children less than five years old, responsible for about 40% of all hospitalizations in this age group. According to the 2010 Malaria Indicator Survey (MIS), among children less than five years old, the malaria parasite prevalence by slide microscopy was 43% nationally, and the prevalence of severe anemia (hemoglobin concentration <8 g/dl) is 12%. Approximately 98% of all malaria cases are due to *Plasmodium falciparum*.

Other than the PMI, the majority of the funding for malaria activities in Malawi comes from the Global Fund to Fight AIDS, Tuberculosis, and Malaria (Global Fund) and donor and government funds pooled through the health sector-wide approach (SWAp). The Global Fund consolidated Round 2 and 7 and Round 9 grants support the majority of the ACT, LLIN and rapid diagnostic test (RDT) procurements, while pooled donor and government funds contribute to remaining national malaria control activities.

This Year 6 FY 2012 PMI Malaria Operational Plan for Malawi was developed during a planning visit in July 2011 by representatives from the United States Agency for International Development (USAID), the Centers for Disease Control and Prevention (CDC) and the Malawi NMCP. The Plan has been developed in close consultation with national and international partners involved with malaria control in the country and seeks to fill gaps in funding from other major donors, while taking into account progress made to date. In addition to supporting efforts to control malaria, the team sought to increase integration with other GHI programs, and expand efforts in strengthening

Malawi's health system. Based on these discussions and further meetings with the NMCP, the planning team proposes to support the following major activities outlined below. The total amount of PMI funding requested for Malawi in FY 2012 is $23.4 million.

**Insecticide-treated nets** (ITNs): Malawi is likely to achieve close to universal coverage of ITNs (defined as one net per two persons) following a national universal coverage campaign planned for late 2011. This is coupled with several years of consistent ITN distribution through the free clinic-based routine system supported primarily by the PMI. According to the 2010 MIS, nearly 60% of households owned one or more ITNs and 55% of children less than five and 49% of pregnant women slept under an ITN the previous night. With FY 2012 funding, the PMI will procure an additional 540,000 LLINs for free distribution through routine channels to maintain high coverage of net ownership and use in Malawi. Expanded efforts will be directed at promoting LLIN use, care and repair through behavior change communication (BCC) and community mobilization.

**Indoor residual spraying** (IRS)**:** In the first five years of the PMI, Malawi expanded its IRS program from a pilot of 27,000 houses in part of Nkhotakota District in 2007 to two full districts covering over 97,000 structures and protecting over 360,000 residents in 2010. Based on the success of the initial pilot, the Malawi MoH funded IRS activities in five additional districts in 2010, covering over 430,000 structures and nearly two million people. However, Malawi's IRS activities have faced significant challenges. There is evidence of emerging pyrethriod resistance. During the 2010 spray campaign, technical problems resulted in missed targets for all affected IRS districts. In 2011, given increased costs associated with an insecticide change to bendiocarb, PMI scaled back its support to one district (Nkhotakota) in order to contain costs and maintain the quality of IRS activities. Thus, with FY 2012 funds, the PMI plans to support IRS in Nkhotakota District alone. Additional PMI-directed efforts will be targeted at improving the NMCP's capacity to implement IRS particularly in the areas of microplanning, logistics, insecticide and environmental management. Efforts directed at entomological monitoring of the IRS program in all of the implementing districts, including resistance monitoring, will be intensified.

**Intermittent preventive treatment of pregnant women (IPTp):** Despite the impressive 60% coverage of pregnant women with two doses of IPTp in Malawi, the 2010 MIS showed considerably lower rates among poorer and less educated women. The PMI has worked to achieve these high rates of coverage nationally in Years One to Five by strengthening focused antenatal care (ANC) at the district health facility level and by providing job aids and other relevant tools. The PMI has also funded information, education and communication (IEC) efforts encouraging early and repeated ANC attendance, which increase the opportunity for successful delivery of the second IPTp dose. With FY 2012 funding, the PMI will continue to support plans to increase uptake of IPTp with emphasis on supportive supervision of focused ANC (FANC) services, encouragement of earlier attendance to ANC, especially among multigravidae, with a goal of ensuring that at least 85% of pregnant women receive at least two doses of sulfadoxine-pyrimethamine (SP) for IPTp. The PMI will continue to advocate for policy change to incorporate use of IPTp beyond 36 weeks. The planning team recognizes that the advent of widespread *P. falciparum* resistance to SP is putting the effectiveness of the current IPTp strategy at risk, and creating an urgent need to evaluate new drugs and new approaches to reduce the burden of malaria in pregnancy. As such, with FY 2012 funding additional evaluations on SP effectiveness for IPTp will be conducted to inform the NMCP's IPTp policies.

**Case management**: In 2007, Malawi changed its national first-line malaria treatment from SP to the ACT, artemether-lumefantrine (AL). To date, the PMI has supported case management with AL at both the facility and community level with recent efforts directed primarily at the community level. Due to repeated failures within the Central Medical Stores (CMS), in late 2010, a parallel supply chain was established to distribute Global Fund and USAID-procured health commodities directly to services delivery points. Implementing this privately-run and managed supply chain has increased commodity distribution costs, but the security and reliability of the system is greatly improved.

In its new Malaria Strategic Plan 2011-2015, Malawi focuses on universal diagnosis and treatment for all age groups at the community and facility level. In July 2011, the NMCP began implementation of RDTs in selected health facilities while continuing to strengthen malaria microscopy. The PMI will provide substantial support to this roll-out and improved microscopy in conjunction with similar efforts ongoing within the HIV/AIDS and tuberculosis control programs by jointly developing a quality assurance system for microscopy and training of laboratory technicians.

With FY 2012 funding, PMI will support prompt and effective treatment of malaria at the community level through the scale-up of community-based distribution of AL to children less than five years old in hard-to-reach areas throughout the country. Additionally the PMI will continue to support the scale-up of diagnostics by procuring about three million RDTs for use at the facility and community level while strengthening supervision of laboratory and other personnel involved in malaria diagnostic testing. Beyond FY 2012 support to the parallel supply chain, the PMI will continue to support technical assistance to strengthen Malawi's public sector supply chain.

**Health systems strengthening and capacity building:** As a GHI-plus country, the PMI in Malawi has increased its efforts to strengthen health systems while integrating with other United States government (USG) programs to build capacity and improve outcomes. With funding from FY 2012, the PMI will continue to support the NMCP with an M&E advisor and a WHO Program Officer who will continue to provide technical assistance to the program. The PMI will work in collaboration with other USG program areas such as maternal and child health and HIV/AIDS to support building leadership, policy, finance and management capacity at the district, zonal, and central levels. In FY 2012 there will be a specific focus to work within the GHI framework to support infrastructure, health information systems and supervisory structures.

**Monitoring and evaluation**: The PMI's monitoring and evaluation (M&E) framework is based on the goal of reducing malaria mortality by 70% and achieving 85% coverage targets with specific interventions by 2015. This framework is aligned with the standard methodology for evaluation of malaria programs that is promoted by the Roll Back Malaria (RBM) Partnership. The PMI's M&E plan is coordinated with the NMCP and other partners to share resources ensure that critical gaps are being filled, and standardize data collection and reporting. In 2010, Malawi conducted its first ever nationally representative MIS as well as DHS which provided district level estimates.

With FY 2011 funds, the PMI will support Malawi's second MIS in 2012. The PMI has provided considerable support for entomological monitoring of IRS and ITNs and has funded health facility

surveys to determine the effectiveness of the case management strategies. With FY 2012 funding, PMI will continue to support entomological surveillance in 10 districts, while monitoring the roll-out of RDTs nationally and the appropriate case management of malaria through a health facility survey. There will be an independent evaluation of BCC programs as well as support to mid-term evaluations of existing programs. The efficacy of AL will continue to be monitored through a drug efficacy trial to be conducted in 2013.

## INTRODUCTION

### Global Health Initiative:

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

The GHI aims to maximize the impact the United States achieves for every health dollar it invests, in a sustainable way. The GHI's business model is based on these key concepts: implementing a woman- and girl-centered approach; increasing impact and efficiency through strategic coordination and programmatic integration; strengthening and leveraging key partnerships, multilateral organizations, and private contributions; encouraging country ownership and investing in country-led plans and health systems; improving metrics, monitoring and evaluation (M&E); and promoting research and innovation. The GHI will build on the USG's accomplishments in global health, accelerating progress in health delivery and investing in a more lasting and shared approach through the strengthening of health systems. Framed within the larger context of the GHI and consistent with the GHI's overall principles and planning processes, BEST (Best Practices at Scale in the Home, Community and Facilities) is a United States Agency for International Development (USAID) planning and review process that draws on our best experiences in family planning, maternal and child health, and nutrition to base our programs on the best practices to achieve the best impact.

### President's Malaria Initiative:

The PMI is a core component of the GHI, along with HIV/AIDS, maternal and child health, and tuberculosis. The PMI was launched in June 2005 as a five-year, $1.2 billion initiative to scale up rapidly malaria prevention and treatment interventions and reduce malaria-related mortality by 50% in 15 high-burden countries in sub-Saharan Africa. With passage of the 2008 Lantos-Hyde Act, funding for the PMI has now been extended through FY 2014 and, as part of the GHI, the goal of the PMI is to achieve a 70% reduction in the burden of malaria in the original 15 countries by 2015. This will be achieved by reaching 85% coverage of the most vulnerable groups — children less than five years old and pregnant women — with proven preventive and therapeutic interventions, including artemisinin-based combination therapies (ACTs), insecticide-treated nets (ITNs), intermittent preventive treatment for pregnant women (IPTp), and indoor residual spraying (IRS).

Malawi became a PMI focus country in 2006. Large-scale implementation of ACTs and IPTp began in 2007, building on already strong IPTp and ITN programs, and has progressed rapidly with support from the PMI and other partners, in spite of the country's weak health infrastructure.

The FY 2012 Malaria Operational Plan presents a detailed implementation plan for the sixth year of the PMI implementation in Malawi, based on the PMI Multi-Year Strategy and Plan and the National Malaria Control Program's (NMCP) Malaria Strategic Plan 2011-2015. It was developed in consultation with the NMCP, and with participation of national and international partners involved with malaria prevention and control in the country. The activities that the PMI is proposing to support fit well within the NMCP's Malaria Strategic Plan 2011-2015. This plan builds on investments made by the PMI and other partners to improve and expand malaria-related prevention and treatment services in the country. This document briefly reviews the current status of malaria control policies and interventions in Malawi, describes progress to date, identifies challenges and unmet needs if the targets of the NMCP and the PMI are to be achieved, and provides a description of planned FY 2012 activities.

## MALARIA SITUATION IN MALAWI

Malaria transmission and epidemiology in Malawi with populations at risk:

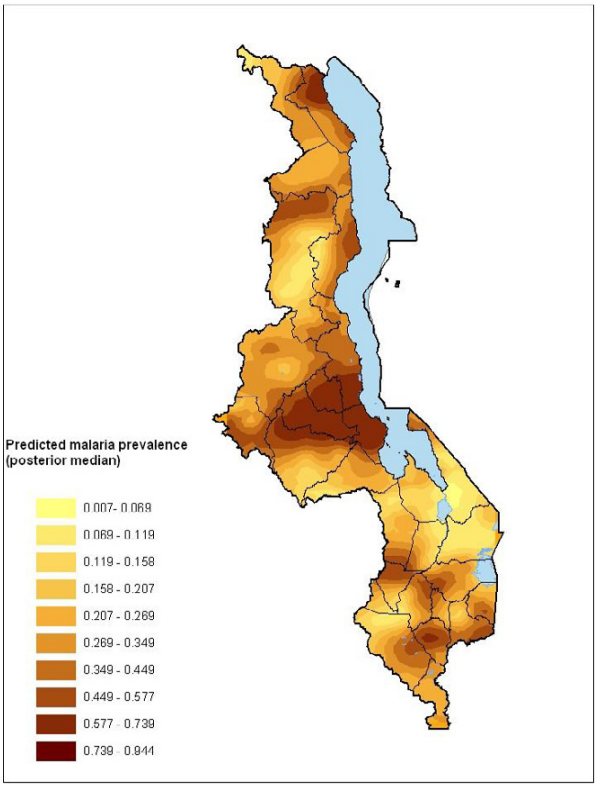
Malawi, situated in south-central Africa, is a landlocked country bordered by Tanzania to the north, Zambia to the west and Mozambique to the east and south Malawi has an estimated population of 13.1 million, comprised of approximately 51% women and 17% children less than five years old (2008 population census).

Malaria continues to be a major public health problem in Malawi and is one of the major causes of morbidity and mortality, especially in children less than five years old. With approximately six million suspected cases treated annually, malaria is responsible for about 40% of all hospitalization of children less than five years old and 34% of all outpatient visits across all ages. Children less than five years old constitute about 50% of the total suspected malaria cases, and nearly 60% of all hospital deaths in children less than five years old are attributed to malaria and anemia. According to the 2010 Malaria Indicator Survey (MIS), among children less than five years old, the malaria parasite prevalence by slide microscopy was 43% nationally, and the prevalence of severe anemia (hemoglobin concentration <8 g/dl) was 12%.

Malaria is highly endemic in Malawi with perennial transmission in almost all areas. Transmission rates peak during the rainy season during November to April especially in low-lying areas with high temperatures. *Plasmodium falciparum* is responsible for approximately 98% of malaria infections, with the remaining 2% due to *P. ovale, P. malariae* and *P. vivax*. The primary vectors are *Anopheles funestus, An. gambiae* s.s., and *An. arabiensis*.

***Map of Malawi showing predicted malaria prevalence rates*** *(2006, Kazembe et al)*[1]

[1] Kazembe LN, Kleinschmidt I, Holtz TH, Sharp BL. Spatial analysis and mapping of malaria risk in Malawi using point-referenced prevalence of infection data. *Int J Health Geogr* 2006 5:41.




**Malawi health sector:**

The Malawi health system is highly decentralized with many programming decisions made at the district level. The majority of health services in Malawi are provided through the Ministry of Health (MoH) and the Christian Health Association of Malawi, which operates approximately 40% of designated government health facilities nationwide and charges fees for service. Services are delivered through hospitals, health centers and salaried health surveillance assistants (HSAs) at the community level.

Rural populations' access to health facilities is generally good. Within a five kilometer radius, accessibility is estimated at 54%. Using the eight kilometer standard and including urban populations, accessibility is 84% nationally.[2] Despite having reliable access to health services, the utilization of these services is mixed.

The sector-wide approach (SWAp) is the main structure that manages the health sector inputs. The SWAp is governed by a secretariat supported by technical working groups, which engage government and development partners to provide technical guidance and decision-making on key technical issues to the SWAp and ultimately the MoH. Development partners are also engaged in the SWAp governance structures through the Health Donor Group.

The NMCP also receives technical assistance from the United Nations Children's Fund (UNICEF) to support programmatic management, decentralized malaria prevention and control efforts at the

[2] Malawi National Health Facilities Development Plan 1999 - 2004

district levels, and for the development of IEC materials. The World Health Organization (WHO) provides assistance on a variety of technical issues.

Malawi has three approved grants from the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund). The recently consolidated Rounds 2 and 7 just entered Phase Two and Round 9 just began Phase One. The initial disbursement of funds for the consolidated Round 2/7 grants occurred in December 2008 and ended in late 2010. The Phase II period of the consolidated Round 2/7 grants has a ceiling of $44 million and became operational this year. In February 2011, Malawi signed the Global Fund Round 9 malaria grant, which aims to award $28 million over the Phase I period (2011-2013), and $91 million over the full five years. Both grants designate the MoH as the principal recipient. Malawi currently uses Global Fund's voluntary pooled procurement to purchase malaria commodities.

The Global Fund grants focus on case management at the facility level with artemether-lumefantrine (AL) and commodity procurement and distribution of long-lasting insecticide-treated nets (LLINs) and rapid diagnostic tests (RDTs). An LLIN mass distribution campaign is planned for late 2011 with a goal of universal coverage of two people per net. Global Fund support also contributes significantly to the goal of parasitological confirmation of malaria for all suspected fever cases beginning in 2011.

**Malaria grants from the Global Fund:**

| Round | Phase 1 Amount | Five-year funding maximum |
|---|---|---|
| **2** | $17,957,714 | $44,706,715 |
| **7** | $36,545,312 | |
| **2 & 7 (Consolidated)** | $54,503,026 | $99,209,471 |
| **9(Pending approval)** | $28,032,760 | $91,945,450 |
| **Total** | $82,535,786 | $191,154,921 |

Malawi relies heavily on Global Fund support. Currently, Malawi has one of the largest Global Fund HIV/AIDS grants, receiving $170 million for treatment in Round 1, in addition to $19 million for the care of orphans and vulnerable children in Round 5. Malawi also has one of the only three Health Systems Strengthening grants globally, which supports approximately half of the country's community HSAs. To support tuberculosis control, the Global Fund awarded Malawi a Round 7 grant, totaling $9.1 million.

Malawi is also a President's Emergency Plan for AIDS Relief (PEPFAR) non-focus country, receiving $65 million in FY 2011 for the prevention, care, and treatment of HIV/AIDS. The PEPFAR and the PMI share several implementation partners working on integrated or common platforms to support improved health outcomes in Malawi. The PMI team works closely with the PEPFAR and the USAID health teams to identify ways to further coordinate activities.

## NATIONAL MALARIA CONTROL PROGRAM AND STRATEGY

The NMCP functions under the Directorate of Preventive Health Services. As such, the NMCP Program Manager is the Deputy Director of Preventive Health Services for the MoH. In recent

years, the program has expanded and now incorporates a core group of 12 technical officers, including an M&E position supported by the PMI. The NMCP sets policies, establishes strategies, coordinates activities, and provides technical guidance for the MoH with respect to malaria prevention and control interventions. The management structure is comprised of 5 zonal malaria coordinators, 29 district malaria coordinators to direct activities in each district, 29 ITN coordinators who manage LLIN activities, and 7 IRS coordinators in the 7 IRS implementing districts.

Malawi has developed a new Malaria Strategic Plan 2011-2015 that builds on the successes achieved and lessons learned during implementation of the two previous strategic initiatives. The Malaria Strategic Plan 2011-2015, entitled "Towards Universal Access," was developed and approved by the MoH in early 2011. Within this new strategy, Malawi aims to move from targeting malaria control interventions to provision of universal access of proven interventions under which all Malawians at risk of malaria should have equitable access to malaria prevention, care and treatment. The NMCP activities are designed to be implemented within the Health Sector Strategic Plan (HSSP) activities and SWAp to policy and strategy of public service delivery, including provision of the Essential Health Package (EHP). Specifically, the Malaria Strategic Plan 2011-2015 objectives aim to ensure that the MoH through the NMCP is in a position to:

- Achieve universal coverage of all interventions by 2015 in order to achieve 80% utilization rate of the interventions;
- Strengthen advocacy, communication and social mobilization capacities for malaria control by 2015 in order to improve use and adherence;
- Strengthen surveillance, M&E systems including operational research for tracking progress in the implementation of malaria control activities by 2015;
- Strengthen capacity in program management in order to achieve malaria program objectives at all levels of health service delivery.

Within the Malaria Strategic Plan 2011-2015, six primary intervention areas are targeted: integrated vector management (IVM); case management; malaria in pregnancy; social mobilization and advocacy; surveillance, monitoring, evaluation and operations research; and program management.

## RECENT STATUS OF MALARIA INDICATORS

The status of the progress of malaria control in Malawi comes from the results of two national household surveys assessing coverage of key malaria interventions and measuring malaria-related burden. In 2010, Malawi conducted an MIS that reached approximately 3,500 households. A Demographic and Health Survey (DHS) was also conducted between July and November 2010. These two surveys provide extensive information on the status of each malaria indicator in both the rainy and dry seasons. A Multiple Indicator Cluster Survey (MICS), sponsored by UNICEF in 2006, provides a baseline for some indicators.

**Malaria Indicators in Malawi:**

| Indicator | MICS 2006 | MIS 2010 | DHS 2010 |
|---|---|---|---|
| Percentage of households that own one or more ITNs | 38% | 59% | 57% |

| | | | |
|---|---|---|---|
| Percentage of children less than five years old who slept under an ITN the previous night | 25% | 55% | 39% |
| Percentage of pregnant women who slept under an ITN the previous night | 8% | 60% | 57% |
| Percentage of children less than five years old with fever in the last two weeks who received an appropriate anti-malarial drug | 24% | 28% | 43% |
| Percentage of children less than five years old with access to antimalarial treatment within 24 hours of onset of symptoms | N/A | 22% | 28% |
| Percentage of pregnant women who took two or more doses of IPTp during their last pregnancy | 48% | 60% | 55% |
| Prevalence of malaria parasitemia by slide microscopy | N/A | 43% | N/A |

**EXPECTED RESULTS – YEAR SIX**

The expected results with FY 2012 funding of the PMI in Malawi are as follows:

**Prevention:**

- Procurement and distribution of approximately 540,000 LLINs through routine channels (ANC and EPI clinics) to maintain universal coverage of LLINs in Malawi;
- Continued support for the scale-up of FANC for malaria in pregnancy interventions at the health facility level to increase the percentage of women receiving the second dose of IPTp and ensure better adherence to ANC best practices;
- Spraying of a residual insecticide in 82,000 structures in Nkhotakota District, and the provision of technical assistance for spraying of 800,000 structures in 10 districts covered by the MOH IRS program in Malawi;

**Case Management:**

- Procurement and distribution of three million RDTs for health facilities and continued support for supervision of their use.
- Procurement and distribution of approximately three million AL treatments for both the health facility and community level to support Malawi's efforts to ensure that all children less than five years old presenting with malaria symptoms receive ACTs;
- Support for community case management to increase access to ACTs for children less than five years old in hard-to-reach areas in 11 districts;
- Continued strengthening and consistent monitoring of the drug and diagnostics supply chain to ensure that the stock-out rate is minimized;

**Monitoring and Evaluation:**

- Support for a health facility survey to assess outpatient case management practices in areas with continued implementation of RDTs;

## PREVENTION ACTIVITIES

### Insecticide-treated nets

***Background:***

The current NMCP guidance calls for universal coverage of ITNs, defined as one net per two people. To achieve this, the NMCP supports a three-pronged approach to ITN distribution: 1) routine distribution of free LLINs through ANC and EPI clinics, 2) periodic mass campaigns covering the entire population, and 3) traditional social marketing through private sector outlets. Under the routine distribution channel, the policy states that a pregnant woman should receive a free LLIN either during her first ANC visit or at childbirth if her newborn is delivered in a health facility. In addition, a child less than one year old receives a free LLIN at his or her first EPI visit. Mass campaigns are planned for every three years beginning in 2011. The lowest volume channel for ITNs is the private sector, which sells approximately 170,000 LLINs annually, mainly in urban areas.

The 2010 MIS and DHS surveys have shown that this strategy has helped Malawi to achieve and maintain a stable level of ownership. Household ownership of at least one mosquito net in both the MIS and DHS is 63% and 67%, respectively, and ownership of one ITN is 59% and 57%, respectively. Although the use of ITNs by children less than five years old is lower in the DHS (39%) than the MIS (55%), it is thought that this difference can be attributed to the season in which the studies were completed, i.e. the DHS was conducted during the dry season when mosquito densities are lower, and the MIS was conducted during the rainy season when mosquito densities are higher. Similarly, the results from the MIS report a higher percentage of pregnant women sleeping under a net the previous night (54%) compared to the DHS survey (43%). The results for ITN use by pregnant women are 52% and 35%, respectively, for the MIS and DHS surveys in 2010.

***Progress to date:***

The PMI and the Global Fund are the dominant funders of ITNs in Malawi. In 2009 and 2010, the PMI and the Global Fund distributed nearly two million LLINs, which were distributed through clinics and mass campaigns. The table below shows actual and projected net distributions between 2009 and 2014.

Since 2009, the PMI has procured and has or will distribute approximately 1.8 million free LLINs through ANC and EPI clinics and through mass campaigns.
In late 2011, the NMCP will conduct a national universal coverage campaign with the 4.6 million LLINs procured through the consolidated Round 2/7 and Round 9 grants. The PMI has already contributed to this campaign through a “pilot” universal coverage campaign in Phalombe, Nkhotakota and Salima districts where the PMI distributed over 400,000 LLINs. The lessons from the universal coverage campaigns in these three districts will be used to refine the planning and

implementation tools being developed for the national campaign later this year. The PMI is continuing to provide technical support to the microplanning of this campaign, as well as additional nets.

**Support for LLINs in Malawi from 2009:**

| Year | Route | Donor | | | | | |
|---|---|---|---|---|---|---|---|
| | | **Global Fund Rounds 2/7** | **Global Fund Round 9** | **PMI** | **UNICEF** | **Other** | **Total** |
| FY09 | Routine | 443,938 | | 772,789 | | | |
| | Campaign | | | | | | |
| | PS | | | | | 170,870 | ***1,387,597*** |
| FY10 | Routine | 751,500 | | 234,654 | 101,060 | | |
| | Campaign | | | | | | |
| | PS | | | | | 170,787 | ***506,501*** |
| FY11 *projected* | Routine | | | 585,564 | 33,841 | | |
| | Campaign | *2,090,480* | *2,430,257* | 1,000,069 | | *70,000* | |
| | PS | | | | | 113,778 | ***6,323,989*** |
| *FY12 projected* | Routine | *729,618* | *650,000* | | | | |
| | Campaign | | | | | | |
| | PS | | | | | *170,000* | ***1,549,618*** |
| *FY13 projected* | Routine | *750,048* | | | | | |
| | Campaign | | | | | | |
| | PS | | | | | *170,000* | ***920,048*** |
| *FY14 projected* | Routine | | | | | | |
| | Campaign | | *7710490* | | | | |
| | PS | | | | | *170,000* | ***7,880,490*** |
| **Total Nets between FY09-FY13** | | | | | | | ***18,568,243*** |

Once universal coverage of ITNs is achieved, there will be a need to maintain high levels of coverage through routine distribution methods. With current levels of ANC and EPI attendance, the routine system can distribute between 1 and 1.2 million LLINs annually, and with the current population growth, that figure will rise to approximately 1.3 million LLINs in 2013. While demand is likely to go down after the universal coverage campaign, it is vital that the routine distribution system remains robust so that ITNs can be replaced as they wear out between campaigns and new

beneficiaries can be reached. As the table above shows, there are 750,000 ITNs scheduled to be procured in 2013 via the Global Fund Round 2/7, leaving a gap of approximately 550,000 in the coming three years.

**Routine System Needs for LLINs in Malawi:**

| | |
|---|---|
| Population at risk in 2013 (Routine System) | 1,300,000 |
| Total number of ITNs needed (Routine System) | 1,3000,000 |
| **Pledged ITNs** | |
| Pledged ITNs in 2013 (via routine distribution)<br>(includes pledged ITNs from: GF 750,048) | 750,048 |
| ITNs **gap** for PMI to fill | **550,000** |

Although use of ITNs is rising, the need still exists to reinforce messages concerning the correct and consistent use of ITNs as well as net care and repair. To this end, the PMI has been investing in nationwide print and mass media campaigns emphasizing year-round use among vulnerable groups. Several radio spots aired through local radio stations have contained these messages. In light of rising ITN coverage and the shift to universal coverage, it is now time to reevaluate and modify the current campaign so that it emphasizes the use of ITNs every night by all members of the household, in addition to vulnerable populations as well as how to properly care and repair nets. .

To complement the mass media campaign, the PMI is supporting a malaria-specific small grants program using non-governmental organizations (NGOs) and community-based organizations (CBOs) for community mobilization activities that promote behaviors around malaria control, including ITN ownership and use, and proper care and repair of nets. To date, 21 grants in 26 districts have been awarded to Malawian NGOs to work with local communities to change behaviors through interpersonal communication approaches such as local dramas, health education talks, and community events. The NGOs will also work with communities to assist in hanging ITNs in homes and repairing nets. A recent independent evaluation of the Small Grants program found that it was an effective way to reach the community and should be scaled-up nationally.

***Planned Activities with FY12 funding: ($4,825,000)***

Malawi is likely to achieve close to universal coverage of ITNs by mid-2011 following a national universal coverage campaign and several years of consistent LLIN distribution through the routine system. The challenge remains to maintain this high coverage through the routine system while ensuring that nets are appropriately used and cared for. As LLIN ownership increases, it will also be important to reinforce a “culture of net usage” with messaging about the correct and consistent use, as well as proper care and repair of ITNs, through community-based activities.

With FY 2012 funding, the PMI will:

- Procure approximately 540,000 LLINs for free distribution to pregnant women and children under five through the ANC and EPI programs to help maintain universal coverage ($3,225,000);
- Support the cost of distributing these nets from the central level to the health facilities including customs clearing, warehousing, transport, distribution. Also, the PMI will support the implementation of an LLIN tracking system at the health facility to help monitor the distribution of LLINs through the routine system ($800,000);
- Support to the NMCP efforts to plan for the 2014 universal coverage campaign, including support for micro-planning at the district level and logistical support ($150,000).
- Promote LLIN use, care and repair through BCC and community mobilization: The PMI will continue to provide support to BCC activities to close the gap between availability and use of LLINs at the household level. Formative research will determine which messaging is needed to effect and sustain behavior change, which may include but is not limited to LLIN use, and appropriate care and repair of nets. With FY 2012 funds PMI will support evidence-based BCC campaigns that will use the most effective channels of communication to encourage appropriate use and care of LLINs and enhance national and local BCC capacity to develop and implement a cohesive LLIN promotion campaign. Following the successful use of the Small Grants mechanism in the past year, the FY 2012 funds will build on lessons learned from these interventions and will continue to include a strong M&E component. These small grants will cover all of the districts in Malawi ($650,000).

***Indoor residual spraying (IRS)***

***Background:***

The Malawi Malaria Strategic Plan 2011-2015 recognizes IRS as a key malaria prevention strategy. The NMCP plans to scale up IRS to 12 high malaria burden districts by 2015. The program plans to implement IRS in 10 districts during 2013.

Evidence suggests that *An. funestus* in Malawi is developing significant resistance to pyrethroids in most of the IRS implementation districts. In response to these data, the NMCP has requested technical assistance from WHO to conduct a national study in 2011 to determine the level of mosquito insecticide resistance to various classes of insecticides. No protocol has yet been developed and funding is to be determined. The NMCP hopes that results from this assessment will inform the decision on choice of insecticides and future of IRS for 2012 and beyond. Malawi is in the process of investigating options for larviciding in 10 districts along the lakeshore and Shire Valley. These are sites that are earmarked for the President's Greenbelt Irrigation Initiative. Seven out of the 10 earmarked districts for larviciding are currently designated as IRS districts.

***Progress to date:***

The PMI supported four rounds of IRS in Nkhotakota District from 2007 to 2010. Salima District was added for the first time in 2010. Encouraged by the successes of the PMI IRS program, the

MoH decided to scale-up IRS to five additional districts in 2010, namely Karonga, Nkhata Bay, Mangochi, Chikhwawa, and Nsanje using funding from the SWAp. Challenges facing the MoH IRS program in the scale-up period include delayed insecticide procurement, significant beneficiary refusals in some districts, inadequate personal protective equipment (PPE), and inappropriate pumps. The PMI provided IRS technical assistance to NMCP in IRS planning at both macro- and micro levels, as well as how to implement appropriate environmental controls.

In 2010, the MoH used the pyrethroid alpha-cypermethrin in its five supported districts while PMI-supported districts changed to an organophosphate, pirimiphos-methyl, due to resistance of the major vector in these areas, *An. funestus*, to pyrethroids. The change to organophosphates in PMI districts has resulted in a significant increase in costs to implement IRS activities, more than doubling the anticipated budget. In 2011, PMI will scale back its support to one district (Nkhotakota) in order to contain costs and maintain the quality of IRS activities. The NMCP will expand their spray program to include 10 districts.

The PMI also supports entomological monitoring of the IRS program in all of the implementing districts. This support includes monitoring of the residual effect of the insecticide on walls after spraying, measurement of changes in vector density and insecticide resistance monitoring.

The table below presents a summary of IRS achievements in Malawi.

**Summary IRS data from 2007 to 2011:**

| District | Insecticide used | Structures sprayed (% coverage) | Total population protected |
|---|---|---|---|
| Nkhotakota **(2007)** | Lambda-cyhalothrin | 28,520 (93%) | 130,506 |
| Nkhotakota **(2008)** | Lambda-cyhalothrin | 42,044 (98%) | 211,019 |
| Nkhotakota **(2009)** | Alpha-cypermethrin | 74,772 (91%) | 299,744 |
| Nkhotakota & Salima **(2010)** (PMI-supported) | Pirimiphos-methyl | 97,329 (73%) | 364,349 |
| Karonga, Nkhata Bay, Mangochi, Chikhwawa, Nsanje **(2010)** (MoH supported) | Alpha-cypermethrin | 430,043 (85%) | 1,967,154 |

***Proposed Activities with FY2012 Funding ($3,500,000)***

In line with the NMCP's malaria strategy for IRS, the PMI will continue to support the IRS implementation in Nkhotakota District. Additionally, the PMI will support technical assistance and entomological monitoring in all 10 IRS districts being covered by the MOH.

***With FY12 Funding, PMI will:***

- Spray 82,000 structures in Nkhotakota District. ($3,300,000);
- Provide technical assistance to the NMCP for the spraying of nine additional districts. This technical support includes micro and macro planning, environmental monitoring and additional supervision. ($200,000).
-

**Intermittent preventive treatment in pregnancy (IPTp)**

***Background:***

Malawi has been a leader in providing IPTp to pregnant women to prevent malaria in pregnancy and its negative consequences both for pregnant women and their newborns. It is one of the few sub-Saharan countries to approach the PMI targets for IPTp2. National policy on IPTp was revised in 2002 and calls for all pregnant women to receive at least two treatment doses of SP under direct observation (DOT) by the ANC clinic spaced at least one month apart. Intermittent preventive treatment is given free of charge by ANC workers and is integrated into ANC as part of the WHO strategy of focused- antenatal care (FANC), administered by the MoH Reproductive Health Unit. All observed doses are recorded in ANC registries maintained in the clinic and on cards known as "health passports" that are carried by the pregnant women.

According to the 2010 MIS, the percentage of pregnant women receiving two doses of SP at an ANC in the last five years was 60%. Use of IPTp has steadily increased over the years but has yet to reach goals set by the Malawian Government or the PMI. Attendance of at least one ANC visit during pregnancy is very high (97%) in Malawi, and the average gestational age at the first visit ranges from 21 to 25 weeks with the average total number of ANC visits in pregnancy between 2 and 2.5. Given that most pregnant women first attend ANC during their second trimester and most make at least two ANC visits, there is substantial room for improving IPTp2 coverage. Current FANC guidelines do not call for provision of SP after 36 weeks gestation, which may be one factor limiting uptake of the second dose of SP. There are ongoing efforts to adapt this policy guideline.

In Malawi, there is little difference in IPTp use between women from urban and rural areas or by region of the country. However, pregnant women coming from wealthier households and women with more education had increased use of IPTp, according to the 2010 MIS. An analysis of new, longitudinal ANC registers permitted the evaluation of IPTp among a sample of 2,201 pregnant, of whom 52% received IPTp2. In this sample, provision of the second dose of IPTp was associated with earlier gestational age at first ANC visit. Younger women during their first pregnancy were more likely to come in earlier for ANC and more likely to make multiple ANC visits. These data can be used for targeted communication strategies to improve IPTp uptake.

Improvements in use of IPTp in Malawi are likely to come with overall improvements in the quality of ANC provided, which will require significant efforts in health systems strengthening.

Intermittent stockouts of ACTs for treatment of malaria at health facilities throughout Malawi have resulted in occasional stockouts of SP for IPTp as clinicians resort to using SP to treat clinical malaria. The advent of widespread *P. falciparum* resistance to SP is putting the effectiveness of the current IPTp strategy at risk, and creating an urgent need to evaluate new drugs and new approaches to reduce the burden of malaria in pregnancy.

***Progress in the last year:***

In the last year, the PMI continued to address the causes of the slightly lower uptake of the second dose of IPTp by building capacity in the MoH to integrate directly observed therapy (DOT) of IPTp into FANC. During this period, 992 health workers were trained on IPTp, and 513 of 620 health facilities were provided with cups and safe water vessels to aid DOT of IPTp. All 29 district health management teams were assisted to conduct two facility supportive supervisions to ANC during this period. The PMI reviewed and pre-tested IPTp IEC materials for both staff and patients to increase understanding of the importance of receiving two doses of IPTp. Despite these efforts, the uptake of IPTp2 continues to be hampered by poor health worker performance.

The Small Grants program has been used to fund CBOs and NGOs to mobilize communities to promote uptake of IPTp. Specifically, community-based messages help increase demand for ANC and IPTp, and encourage women to attend ANC early in their pregnancy and to receive at least two doses of SP to prevent malaria in pregnancy. These messages are being delivered as part of an integrated package addressing all malaria interventions. The PMI has also sponsored a communications campaign at the national level using radio and other mass media.

In several countries in the region, drug efficacy trials are finding reduced efficacy of SP in IPTp. The PMI supported a study evaluating the efficacy of SP for IPTp in Malawi in 2011 that was harmonized with international efforts by the Malaria in Pregnancy Consortium. Results of the study will be available before the end of FY 2011. The efficacy of SP in IPTp will need continued monitoring to provide critical information to Malawi to determine if and when policy on IPTp will need to be changed to an alternative strategy.

***Proposed Activities with FY 2012 Funding: ($1,264,000)***

Although Malawi has made significant improvements in IPTp use, the goal of 85% of pregnant women receiving two doses of SP during pregnancy although close, requires further effort. Given the already high rate of ANC use, BCC messages will need to focus on encouraging earlier attendance at ANC clinics to allow enough time for a second ANC visit and second IPTp dose. Messages also need to target older women who have had multiple pregnancies and may be less likely to attend ANC clinics. Both mass media and community-based campaigns will be useful to provide targeted messaging. As IPTp coverage is already relatively high, these efforts should help increase the uptake of the second and potentially third dose of SP.

IPTp uptake will also increase with overall improvements in the quality of ANC; the PMI will continue supportive supervision of FANC services including IPTp and will continue to advocate for policy change to incorporate use of IPTp beyond 36 weeks.

Given the high rate of SP resistance in *P. falciparum*, the PMI will support continued drug efficacy monitoring to provide important information on if and when a policy change is required.

In FY 2012, the PMI will:

- Support the ongoing nationwide scale-up of IPTp and focused ANC at health facilities by continuing to provide clean water and cups to facilitate DOT and ongoing supportive supervision including community health workers ($400,000);
- Support BCC activities to increase early attendance at ANC and full adherence to IPTp2. The FY 2012 funds will support development and implementation of BCC and community mobilization activities directed toward women of child bearing age and people who are influential to women of childbearing age to promote early and frequent ANC attendance, IPTp uptake, and LLIN ownership and use among pregnant women. The PMI will support NMCP to implement targeted BCC activities to close the existing gap on the second dose of IPTp ($650,000);
- Complete an operations research study on SP effectiveness for IPTp which includes evaluations of SP efficacy study and an assessment of birth outcomes. This will inform the NMCP's IPTp policies ($214,000).

## CASE MANAGEMENT

### Malaria diagnostics

***Background:***

Malawi's Malaria Strategic Plan 2011 - 2015 calls for universal diagnosis of people presenting with fever before malaria treatment is provided. However, due to inadequate availability of malaria diagnostics facilities in most health facilities and village health clinics, most people are currently being presumptively treated for malaria without any confirmatory testing.

Malawi has a total of about 640 health facilities and has established over 3500 village health clinics in hard-to-reach areas, which are run by salaried HSAs. Malawi plans to increase the number of village health clinics to 4000 by 2015. Currently about 25% of health facilities have the capacity for malaria microscopy that is provided by trained and qualified laboratory staff. Malaria microcopy is being used to confirm treatment failures, during *in vivo* studies, as well as in all admitted patients. The main constraint for malaria diagnostics continues to be a lack of trained qualified health workers, consistent electricity and adequate laboratory supplies.

***Progress to date:***

The RDT rollout plan is divided into two phases. The GoM is in the process of completing phase one of the RDT rollout plan which will be completed in calendar year 2012. The focus of phase

one is placed on the 640 public health facilities including those operated by Christian Health Association of Malawi (CHAM). Phase one has included the training of health workers on malaria epidemiology, clinical assessments, RDT testing process, quality assurance and reporting. Upon the completion of this phase, health workers in 29 health districts will be trained and RDTs will be available in all health facilities.

The second phase of the RDT rollout plan extends the training and access to testing kits to Village Health Clinics (VHC) that are managed by Health Surveillance Assistants (HSAs). There are approximately 3500 active VHCs with an equal number of HSAs. In order to complete Phase Two effectively the rollout will occur incrementally over four years and lessons learned will be thoroughly documented during the Phase One process.

RDTs are primarily procured through the Global Fund with some support from PMI. A large gap remains in universal diagnosis as outlined in the MSP 2011-2015. The following table presents the projected needs for RDTs:

**RDT Needs in Malawi:**

| YEARS | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|
| Country Needs(test kits from quantification forecasts) | **8,748,850** | **8,552,450** | **8,360,450** | **8,000,700** | **7,656,425** |
| Available/Funding Source | | | 820,550 | | |
| Global Fund | 4,800,000 | 6,373,000 | 695,000 | - | 0 |
| PMI | | 2,000,000 | | | |
| Government | 1,000,000 | 1,000,000 | | | |
| Total | 5,800,000 | 9,373,000 | 1,515,550 | | |
| Existing Gaps | **2,948,850** | **(820,550)** | **6,844,900** | **8,000,700** | **7,656,425** |

The PMI is supporting the implementation of the national malaria Quality Assurance/Quality Control (QA/QC) Plan through the Outreach Training and Support Supervision (OTSS) program for laboratory and clinical health workers with a focus on microscopy. OTSS is an on-site supervision program designed to provide ongoing support to diagnostic services in health facilities by identifying areas in need of improvement and supporting clinicians and laboratory staff through on-site training. To date, a core group of laboratory and clinical supervisors at the national and district levels has been established and the OTSS program has been rolled out to all health districts and has reached 103 health facilities.

In FY 2012, PMI will scale up the OTSS program towards national coverage, establish a national slide bank to strengthen malaria microscopy QA; and conduct a WHO malaria microscopy accreditation course in Malawi.

***Proposed Activities with FY 2012 Funding: ($4,800,000)***

With FY 2012 funds, PMI will focus on two areas within the RDT plan; procurement of test kits and supervision/support of health workers. A gap of over seven million RDTs remains in calendar year 2013, the funding for FY 2012 will be utilized to help close this gap. The support will also focus on assisting with RDT implementation in health facilities and village health clinics. OTSS supervisors will continue to provide guidance and support in districts and villages across Malawi through constant supervision of malaria diagnostic testing, quality assurance, microscopy support, supply chain management, health facility management, on-the-job supervision, and monitoring and evaluation of RDT program:

- In order to harmonize supervision efforts at health facility level and maximize efficiencies PMI will integrate the malaria OTSS supervision with supervision and laboratory strengthening efforts for tuberculosis and the PEPFAR. This will include joint supervisory visits, integrating supervision checklists where applicable, and developing a core team of district supervisors to supervise lab services for malaria, tuberculosis and HIV/AIDS. ($400,000).
- Procure and distribute RDTs and ancillary commodities such as lancets and gloves. ($3,800,00);
- Technical assistance for malaria diagnostic services to guide RDT implementation in conjunction with support for case management strengthening at facility and community level, and strengthen and expand existing quality assurance activities, especially for RDTs. The rolling out of RDTs to community level will have started in 2013 and PMI will support its implementation while ensuring continuity in the efforts already started on malaria microscopy and RDT quality assurance for the facility level. ($600,000);

**<u>Pharmaceutical and supply chain management:</u>**

***Background:***

Malawi's pharmaceutical management system has been plagued with problems. Stockouts of antimalarials and other essential drugs occur regularly due to issues related to quantification, ordering, tendering, receipt, storage, and distribution. Currently, the Malawian parastatal Central Medical Stores (CMS) handles the procurement, storage, and distribution of most drugs to all government health facilities. Because of budget constraints, procurement issues, and management problems, CMS has not been able to procure a full supply of essential drugs.

The MoH is in the process of converting CMS to a public trust with a private sector business model. This conversion will allow CMS to hire staff outside the MoH staff structure and to enforce results-oriented management practices. A board of directors has been put in place, although full-fledged reform has not yet begun.

***Progress to date:***

Beginning in 2007, the PMI distributed its ACTs through CMS, under the stipulation that CMS improve its storage facilities, documentation and information management system, transportation

capacity, security, and logistics management system. However, many of these assurances did not materialize. Ongoing difficulties in record-keeping, data management, warehousing and commodity tracking highlight barriers to maintaining a strong supply chain, both within CMS and the MoH at large.

In mid-2010, the PMI became aware of significant thefts of PMI-procured antimalarial drugs from CMS systems, resulting in the USG withdrawing of all of its donated commodities from CMS. In late 2010, USAID established a parallel supply chain for the distribution of PMI-procured health commodities as well as other family planning commodities directly to services delivery points. As a result of implementing this privately run and managed supply chain, commodity distribution costs have increased dramatically. While Global Fund malaria grants and USAID Family Planning programs share the cost of the system's operation, running costs can run as high as $100,000 per month. PMI and other partners are supporting efforts to reform CMS to improve the drug procurement and storage system in Malawi.

The PMI, along with the USAID Maternal and Child Health Program, has extended supply chain support to community-level service delivery of integrated management of childhood illnesses and family planning. The PMI works closely with other development partners' efforts to ensure a strong supply chain at the community level. While PMI-procured commodities are primarily targeted to community case management services, they are at times redirected to the facility, based on need.

***Proposed Activities with FY 2012 Funding: ($3,500,000)***

In the coming year, the PMI will continue to support the following activities to ensure strong supply chain and pharmaceutical management and monitoring of malaria and other essential health commodities at all levels of the public health system, as well as striving to maintain a reliable parallel supply chain for malaria commodities:

- Procure approximately three million AL treatments for community-level distribution to selected PMI districts (11) and health facility-level, as needed ($2,000,000);
- Technical assistance to the Ministry of Health Pharmacy Department to strengthen the Government supply chain, including the provision of two technical advisors to the team: one advisor will focus on information flow, management and use, while the other advisor will support strategic planning and reform implementation; assistance also includes day-to-day support for the implementation of the "Supply Chain Manager" software to improvement of the overall performance of the supply chain and the availability of timely and reliable logistics data at the national level ($600,000);
- Provide support for management, warehousing, oversight and physical distribution of PMI procured case management commodities through the contractor-managed private parallel supply chain, funded via a cost-share with USAID/Family Planning and Global Fund Malaria grants ($900,000).

**<u>Malaria treatment</u>**

***Background:***

In November 2007, Malawi successfully launched its new malaria treatment policy, with AL as first-line treatment. With Years one and two funding, the PMI procured the initial 18-month supply of AL to cover the gap between the policy change and implementation of the successful Global Fund Round 2/7 grant. Although the USG is no longer responsible for procuring AL for health facilities, the PMI has been and will continue to work closely with the Global Fund and MoH to ensure a continuous supply of AL nationally.

**Existing AL treatment needs:**

| **Year** | **2011** | **2012** | **2013** | **2014** | **2015** |
|---|---|---|---|---|---|
| AL Needs | 13,976,218 | 12,997,883 | 12,088,031 | 11,241,869 | 10,454,938 |
| **Available resources** | | | | | |
| Global Fund | 8,000,000 | 5,471,000 | 4,500,000 | | |
| PMI for CCM | 2,000,000 | 3,600,000 | | | |
| Save the Children for CCM | 800,000 | | | | |
| PSI for CCM | 700,000 | 700,000 | | | |
| UNICEF for CCM | 300,000 | 300,000 | | | |
| Malawi Government | 600,000 | 600,000 | 600,000 | | |
| Total AL available | 12,400,000 | 10,671,000 | 5,100,000 | | |
| **Existing gap** | **1,576,218** | **2,326,883** | **6,988,031** | **11,241,869** | **10,454,938** |

Building on the success of the launch of AL at the facility level, the Integrated Management of Childhood Illness Unit of the MoH has begun rolling out CCM for children less than five years old in 4,000 hard-to-reach villages across Malawi with a catchment area of approximately 10% of the population. With the support of WHO, UNICEF, the Canadian International Development Agency, the Bill and Melinda Gates Foundation, and USAID Child Health funding, the CCM program uses existing HSAs to provide case management services to sick children at the community level.

At the facility level, AL is provided with support from the Global Fund. Disbursement delays for Malawi's grants have been common, resulting in frequent stock-outs of AL at the facility level. Consumption has been increasing in recent years likely due to the continued presumptive treatment for suspected malaria cases. The NMCP is planning to reverse this trend with the implementation of RDTs in 2011.

***Progress to date:***

The PMI has provided support for case management at both the facility and community level. In addition, the PMI has supported supervisory visits and on-the-job training for health facility staff, while piloting cell phone reporting technology as part of the data collection system for the LMIS.

Under the CCM program, the MoH has plans to stock drug boxes with cotrimoxazole, oral rehydration therapy, chloramphenicol eye ointment, zinc and paracetamol for HSAs at the community level. Lacking sufficient stocks of AL to fill both the needs of facilities and the CCM program, in 2009 the PMI stepped in to cover the cost of AL in the pilot districts, with the intention of scaling-up AL procurement to cover additional districts as needed. PMI, along with USAID maternal and child health funding, also supported the training of HSAs in CCM and the community

logistics management information system, with the aim of both improving quality of care and extending the routine reporting system to community level. Thus far, there are 3,452 active CCM village health clinics, 971 of which receive support from the PMI. With support from the PMI and USAID maternal and child health, USAID has led the development of the community logistics systems, which have been adopted nationally and are being supported in non-USAID districts by other donors.

With FY 2011 funding, PMI procured AL treatments for CCM anti-malarial drugs. PMI funding also supplements USAID maternal and child health efforts to supervise HSAs providing CCM services.

Community-level BCC programming through the Small Grants program continues to promote positive behaviors around malaria. With the introduction of RDTs, the need remains for increased awareness on prompt and effective treatment and compliance with AL. Given that the AL treatment requires twice daily dosing for three days, an extra effort in terms of BCC is needed to ensure compliance. The PMI will also support BCC interventions that will address the importance of confirmed malaria diagnosis.

***Proposed Activities with FY 2012 Funding: ($800,000)***

In FY 2012, the PMI will continue to support implementation of CCM, in collaboration with other partners by procuring AL for CCM and village health clinics in 11 PMI CCM districts, as well as HSA supervision and management. In addition, the PMI will support strengthening of malaria case management at the health centers and hospital levels to ensure quality of care throughout the referral system. Strengthening of case management will include supervision and reinforcement of correct and consistent use of RDTs. Furthermore, PMI will support the quarterly "End Use Verification" exercise which assesses the supplies and use of malaria-related commodities at a national sample of health facilities.

In order to reinforce malaria case management skills within the workforce, PMI proposes to support preservice training in malaria case management for select cadres of health workers through curriculum development or revision for indigenous training institutions and lecturers. Preservice training will focus on assuring quality of care with a focus on confirmed malaria diagnosis.

Mass communications and community mobilization activities focused on promoting prompt and correct use of AL for the treatment of malaria will also be continued with the information gained through formative research conducted in 2011.

Specifically, with FY 2012 funding, the PMI will:

- Procure approximately three million AL treatments for use in CCM for children less than five years old in hard-to-reach villages in 11 PMI CCM districts *($See Pharmaceutical and Supply chain section)*;
- Implement the "end use verification tool" in a national sample of facilities to supervise and monitor case management at all levels of the health system on a quarterly basis to ensure better access to prompt and effective malaria treatment, malaria commodity security, and improved quality of care ($200,000);

- Provide technical assistance to supervise, monitor and provide on-the-job support in case management at all levels of the health system to ensure better access to prompt and effective malaria treatment and improved quality of care (see Diagnostics - $600,000)
- Support preservice training in malaria case management for select cadres of health workers, including curriculum updates that will focus on cadres of health workers directly responsible for case management of malaria, with emphasis on quality of care, the use of RDTs and adherence to test results ($100,000);
- Improve malaria care and treatment-seeking behavior through interpersonal, community level BCC using the integrated district-based malaria small grants program with a focus on prompt and effective treatment including confirmed malaria diagnosis and test adherence ($500,000);
- Improve malaria care and treatment-seeking behavior through BCC at national level including common evidence-based material development for messaging though mass media, small grants and other potential BCC channels ($200,000).

## HEALTH SYSTEMS STRENGTHENING AND NMCP CAPACITY BUILDING

***Background:***

As Malawi's SWAp Program of Work (2004-2010) comes to a close in 2011, the HSSP 2011-2016, which will guide health sector activities in the coming years, was developed and is in final review by stakeholders. This coincides with finalization of the Malawi Growth and Development Strategy, which is an overall development agenda for the GoM. Districts will remain the primary implementation unit for health services; however, the new focus in the HSSP is targeted at primary, secondary and tertiary levels of health care delivery. The central level will focus its input on policy and guideline development. The five MoH zones will continue to provide supervisory support to the districts, and offer a link to the central level where policies for all levels of the health system are established. In order to effectively monitor the performance of the health sector during the HSSP implementation period, the Health Systems Strengthening Framework, based on the principles of the Paris Declaration on Aid Effectiveness will be utilized.

Numerous challenges for Malawi's health system are highlighted in the HSSP and include: a lack of essential drugs availability that is closely linked to a poor supply chain and logistics management system from the central to district level; a need for significant investments in human resources for Malawi to achieve a fully-staffed health system; a lack of necessary equipment at facilities that are plagued by poor infrastructure; inefficient program management; a need for Malawi's health care system to focus on measurement of impact and outcomes and improved data sources to enable this; and a need to focus on strengthening financial management systems at all levels. Three systems strengthening priority areas were selected by USG with support for greater effort under the GHI: 1) human resources for health, 2) infrastructure, and 3) leadership, governance, management and accountability.

Within the HSSP and the GHI strategy, GoM priority infrastructure activities have been defined and encompass: 1) constructing and renovating fit-for-purpose, environmentally friendly physical spaces (health facilities, laboratories, and health care workers housing), 2) ensuring the required

utilities are in place to provide consistent water, electricity, sanitation and other services, 3) designing useful, standardized spaces that streamline services and reduce the time burdens on both patients and providers, 4) expand electronic data collection and other HMIS, and 5) provision of basic furniture and equipment along with equipment maintenance and repair. The GHI will continue to prioritize USG support to these efforts.

Under the GHI's prioritized interventions, upgrades of facilities will make women's health services more accessible and increase the accessibility of essential laboratory and other support services. Improved HMIS will allow clinics to better manage patient information and better layouts will ensure integrated services are available for women, children, men and families at all facilities. These efforts will be strengthened through renovations and maintenance of both ANC and labor and delivery settings to improve patient experiences and outcomes. We expect these enhancements to improve attendance and retention in maternal and child health services.

At the NMCP in particular, there continue to be funding and capacity challenges. The program lacks resources to facilitate basic coordination functions such as holding regular technical working group meetings, supporting forums to disseminate research, and conducting out-year planning with stakeholders. NMCP receives valuable technical assistance from WHO for Global Fund implementation, and to facilitate policy decisions. This additional external assistance has played a vital role in the NMCP's ability to manage their program and coordinate donors. The NMCP is also in the process of developing an M&E Unit to better track data and coordinate their analysis.

***Planned Activities with FY`2012 Funding: (716,000)***

Working closely with other USG programs in Malawi, the PMI will contribute to the GHI activities that support HSSP's implementation and lie specifically under USG stewardship. Though the PMI continues to address malaria-specific challenges, real and documented progress will require increased attention on strengthening the health system with in-country partners. Thus, the PMI will work with other USG health programs to enhance infrastructure, develop strengthened health financing mechanisms, address HRH issues related to supervision and quality improvement while building the capacity of the Ministry of Health in the areas of policy, rationalization of human resources, and improved health information systems.

Specific activities for FY 2012 include:

- Support to the NMCP to hold technical working group meetings, and research dissemination meetings, as well as fund donor coordination functions ($50,000);
- Support funding for a WHO national program officer to continue to provide in-country technical assistance to the NMCP. This support will not continue beyond 2013 ($66,000);
- Strengthening infrastructure with specific inputs to GHI Malawi's prioritized interventions, including ANC and labor and delivery settings that will be renovated with new approaches to maintenance developed to improve patient experiences, address referral deficiencies, enhance maternal and neonatal outcomes, and decrease loss-to-follow up. Specific activities will include renovating health facilities, ensuring that there are utilities in place such as electricity and water, and provision of equipment. This activity will be done as part of a GHI cross-program effort. ($200,000);

- Zonal and other decentralized supervision structures will be strengthened while addressing key policy issues that incorporate building leadership and management capacity at the district, zonal, and central levels. PMI will contribute to the ongoing efforts to train community health workers to provide and extend malaria and other services to the remote rural areas. PMI support will also support strengthening of supervision of faith-based organizations, civil society and the private sector. ($300,000);
- Support health information systems strengthening activities with directed support aimed at obtaining more complete and rigorous malaria indicators data through the existing platforms. Specifically, PMI will support the expansion of a cellphone-based SMS system which will allow both reporting from community (or potentially facility) level to servers based at district-level. The service also has the capacity to answer health worker questions on treatment at community level and to send a notice about a referral case that should be arriving at facility level. This system will allow quicker and more reliable access to data on morbidity and drug consumption at community (and potentially facility) level. ($100,000);

## INTEGRATION WITH OTHER GLOBAL HEALTH INITIATIVE PROGRAMS

Building on a long tradition of USG global health leadership and unprecedented funding commitments to programs like the PEPFAR and the PMI, the Obama Administration announced the GHI in May 2009. The GHI is expected to move global health to a new level of effectiveness and collaboration, with a vision of long-term sustainability led by partner country governments.

The GHI will help partner countries improve health outcomes through strengthened health systems, with a specific focus on improving the health and wellbeing of women, newborns, and children. The Initiative provides strategic funding increases to programmatic areas where large health gains can be achieved, such as in the areas of HIV/AIDS, malaria, tuberculosis, family planning, nutrition, maternal, newborn, and child health, and neglected tropical diseases.

In an effort to maximize the sustainable health impact the USG achieves for every dollar invested, the GHI will utilize a new business model based on seven core principles:

- Implement a woman- and girl-centered approach;
- Increase impact through strategic coordination and integration;
- Strengthen and leverage key multilateral organizations, global health partnerships, and private sector engagement;
- Encourage country ownership and invest in country-led plans;
- Build sustainability through health systems strengthening;
- Improve metrics and M&E;
- Promote research and innovation.

Malawi has been selected as one of a subset of countries for GHI's initial focus. To operationalize the GHI, the USG health team in Malawi will prioritize close harmonization and communication internally across its agencies and disciplines, and externally with GoM and partners, both local and international. The State Department will coordinate this effort among in-country agencies including USAID, Health and Human Services/CDC, Department of Defense and Peace Corps, as well as

other USG agencies with strong contributions to GHI but without in-country presence. Lessons learned from successful business models will improve efficiencies in coordination and implementation within USG, as well as with GoM and all partners. To ensure USG health programs are effectively aligned and coordinated with the priorities and efforts of Malawi's national health strategies and reports on health targets, the team will strive to include Malawian leadership in the development and selection phase of various types of funding opportunities. USG will also ensure the women, girls and gender equality principle is consistently applied.

Malawi has identified three key areas where it will focus its GHI efforts:

- Enhancing leadership, governance, management and accountability: In this area, specific interventions will be identified to ensure demonstrable health leadership outcomes by the GoM, including: timely decision-making; improved accountability; enhanced use of evidence-based approaches in program development and resource allocation; and increased engagement of civil society. A combination of interventions will be undertaken including performance-based financing, professional academic and mentor-based training, leadership and management training and technical support for organizational development in key government ministries. This multi-pronged approach will improve the health programs developed at the central level, and the quality of those programs implemented at district and facility levels both in services provided and commodities procured and distributed.

- Improving human resources for health: USG will support the MoH to provide sustained and sufficient human resources and the equitable distribution of these workers; increase access to community health services; produce highly motivated and skilled staff whose performance is improved; and develop and approve key government policies impacting salaries, resources, and task-shifting. The strategic deployment of better-trained staff across districts and increased incentives for provision of quality services, in combination with strengthened quality improvement mechanisms, will improve the community's confidence in the public health care system.

- Addressing health infrastructure deficiencies: Upgrades of facilities will make labor and delivery services more accessible in hard-to-reach communities and increase the accessibility of essential lab and other support services which are regularly maintained. Improved health information management will allow clinics to better manage patient information and better layouts will ensure integrated services are available for women, children, men and families at all facilities. These efforts will be strengthened through renovations and maintenance of both ANC and labor and delivery settings to improve patient experiences and outcomes. We expect these enhancements to improve attendance and retention of staff in maternal and child health services.

***Planned Activities with FY 2012 Funding: (Funding in other sections)***

The PMI is working collaboratively with PEPFAR and other USG partners engaged in the GHI to integrate programming to demonstrate results in these key areas. In addition to the health systems strengthening areas described above, the PMI will contribute to the goals of the GHI in the following ways (at no additional cost):

- Support community case management through the procurement of AL, supervision and supply chain support (see Case Management section);
- Improve quality and use of ANC in Malawi through integrated support for FANC care through malaria in pregnancy programming (see IPTp section);
- Work with the HIV/AIDS and tuberculosis program to improve laboratory diagnostic capacity through the development of QA/QC systems along with training and supervision (see Case Management section);
- Improve the capacity of CMS to procure, distribute and monitor drugs, supporting efforts to improve district level resource management, develop and strengthen supervisory structures both at the district and zonal level, and improve the technical capacity of the NMCP (see Case Management and NMCP/HSS sections).

## MONITORING AND EVALUATION

***Background:***

The M&E framework is based on the goal of reducing malaria mortality by 70% and achieving 85% coverage targets with specific interventions by 2015. This framework is aligned with the standard methodology for evaluation of malaria programs that is promoted by the RBM Partnership.

In 2007, the NMCP's M&E Technical Working Group completed the National Malaria Monitoring and Evaluation Plan 2007–2011. This plan serves as the guide for M&E activities of all the malaria prevention and control partners in Malawi. A draft M&E plan 2011-2015 is currently under review by relevant stakeholders and is aligned with the Malaria Strategic Plan 2011-2015.

***Progress to date:***

The PMI has used several major sources of information for monitoring and evaluating its program: population-based surveys, health facility surveys, routine data collection, and operations research to answer key questions.

*Population-based surveys*
The Malawi MICS completed in 2006 by UNICEF provides the baseline data for the PMI's program. Two large-scale national surveys, the MIS and DHS, were conducted in 2010 measuring key indicators for the PMI. Both surveys demonstrated gains since the introduction of the PMI. The NMCP, with assistance from the Gates Foundation Malaria Control and Evaluation Partnership in Africa completed the country's first MIS in April 2010 documenting increases in household net ownership, net usage in vulnerable groups, and uptake of IPTp when compared with the 2006 MICS. The 2010 MIS provided more insight to malaria indicators including biomarkers during the period of peak transmission. The DHS provided district-level estimates of under-five mortality and malaria indicators to allow for better targeting of PMI resources.

*Health facility survey*
In 2011, a nationwide health facility survey was to assess the quality of malaria diagnosis and treatment at outpatient facilities. This survey was conducted prior to the roll-out of RDTs, and preliminary data show that the use of malaria diagnostics was quite low. With the effort to expand malaria diagnostic services through the use of RDTs and training on malaria case management, health facility surveys to assess malaria case management practices are critical to assess progress in outpatient facilities. A health facility survey will be conducted with FY 2012 funds to monitor progress in improving case management practices with a specific focus on the use of RDTs. The survey will assess treatment practices in inpatient facilities with a focus on monitoring the implementation of diagnostics.

*Secondment of M&E Officer to NMCP*
Since 2010, PMI has supported the secondment of an M&E officer to the NMCP. The NMCP has requested continued support for this M&E officer to assist in coordinating M&E activities. The M&E officer's role is to support routine malaria surveillance, assist in planning and analysis of national population-based surveys in conjunction with the National Statistics Office, and institutionalize M&E systems to track the status of key malaria indicators. Given that PMI has already supported the M&E officer for several years, this will be the last year of support before transition to a permanent MOH employee.

*BCC independent evaluation*
Since 2007, the PMI has invested significant resources in BCC in Malawi to promote positive behavior change through increasing use of LLINs, uptake of ANC, and care-seeking behavior. To date, there has not been any independent evaluation of BCC activities impact to identify which tools and approaches are most effective at impacting behavior change. An independent evaluation of specific BCC interventions will be conducted by behavioral scientists not associated with the implementing partners with FY 2012 funds to assist the PMI in focusing limited resources in areas that achieve greatest impact.

*Entomologic and environmental monitoring and evaluation of IRS activities*
The PMI has supported entomological monitoring activities, including vector assessments and insecticide resistance testing in Nkhotakota District, where PMI spray operations have focused. The NMCP scaled up its IRS program to seven districts in 2010 and plans to scale up to a total of 10 districts in 2012. To provide the MoH support with its spray program, PMI has funded quarterly surveys of IRS effectiveness using pyrethrum spray catches and WHO-insecticide resistance testing of mosquitoes collected in villages where IRS was being conducted by the NMCP. The 10 sites are the minimum necessary, given the amount of heterogeneity in resistance and vector profiles, to acquire the data to understand the impact of IRS on *Anopheles* spp. populations and to help the NMCP to make decisions on when to stop IRS and when there is need to switch to a different insecticide. Support for monitoring of the environmental effects of IRS will therefore continue in FY 2012 expanding from 7 to 10 districts ($400,000).

*Mid-term evaluations of key USAID bilateral projects*
Per the new USAID evaluation policy, the PMI is committed to the robust evaluation of it's key bilateral projects to ensure that they are meeting their objectives. In 2013, several PMI supported bilateral projects will require a mid-term evaluation to assess their progress and highlight any

corrections needed. Three integrated bilateral projects will reach their mid-point and the support for mid-term evaluation will be shared by all USAID/Health funding streams at the approximate cost of $200,000 each. Two PMI-specific bilateral projects will reach their mid-point; funds will be available to evaluate one of them at an approximate cost of $200,000.

*Antimalaria therapeutic efficacy testing*
The PMI will continue to monitor the efficacy of Malawi's first-line antimalarial drugs, AL, through *in-vivo* drug efficacy trials. The results of this study should guide the PMI and Malawi's decision-making regarding prompt and effective case management of malaria.

*Supply chain management*

- Given Malawi's ongoing challenges with public sector supply chain management, the PMI will support an independent internal controls assessment in late 2011 to assess specific areas of weakness in the country's supply systems. The results of this assessment will help to mark the roadmap towards significant and lasting supply chain sector reforms. The assessment in Malawi will identify key weaknesses in the public sector supply chain. Second assessment, approximately two years later, will assess whether significant improvements have been made. This will enable PMI to determine whether adequate improvement has been made to disband the parallel supply chain. The results of this assessment will help lay out a plan for significant and lasting supply chain sector reforms and will help the USG determine if the supply chain reforms have been effective.

***Planned Activities with FY 2012 Funding: ($1,800,000)***

Specifically, in FY 2012, the PMI will:

- Continued support for an NMCP M&E Officer for a final year ($100,000) ;
- Support the re-assessment of GoM's supply chain management systems in 2013 with a particular focus security and internal controls. This assessment will help PMI determine if USG commodities can be distributed through this system in the future ($300,000);
- Support environmental monitoring of the programmatic use and disposal of insecticides as in accordance with environmental compliance regulations ($25,000);
- Support expanded entomological monitoring in Malawi's 10 IRS districts. This will cover quarterly surveys of IRS effectiveness using pyrethrum spray catches and WHO-insecticide resistance testing of mosquitoes collected from the villages where IRS is conducted by PMI and the NMCP ($400,000);
- Support a national health facility survey to assess outpatient malaria case management practices. The proposed health facility survey will follow approximately two years after a nationally-representative baseline survey that was conducted in 2011. The baseline survey was conducted before RDTs were rolled out in Malawi, which happened in late 2011 and will provide information on the uptake of RDTs at health facilities and monitor improvements in achieving universal laboratory diagnosis for all fever cases.[3] ($225,000);

[3] If the SPA happens in 2012, we will work with MACRO to try to ensure that as much information on malaria case management, including use of RDTs, is included to answer M&E questions about the RDT roll-out. In this case, if necessary, some of the money for the HFS could be used to supplement the SPA to include additional malaria elements. Remaining funds will be used for an OR proposal to focus on quality of RDT testing and clinician utilization of results

- Support an independent evaluation of BCC interventions to ensure they provide value for money. Information is needed on how the targeted communities comprehend and act on the information provided by these front line staff to improve malaria BCC programming ($200,000);
- Support to mid-term evaluations of all five USAID implementing partners to help understand what programmatic changes need to be made to improve the operations of the projects. This will be co-funded with the USAID health program. PMI will contribute to three integrated and two malaria-specific bilateral projects, specifically the Support for Service Delivery project, the BCC project, HPSS, PSI (LLIN) and Chemonics (IRS). Recent project evaluations have cost a minimum of $200,000. PMI will cost-share the integrated project evaluations with other funding streams; PMI's contribution is currently about 1/3 of the total cost. USAID Malawi has found that mid-term evaluations of the project provide valuable insights into the progress the project has made and allows for staff to make crucial midterm corrections.($375,000);
- Conduct *in vivo* malaria drug efficacy testing; the drugs to be tested and sites for the testing have not yet been decided. The budget will be adjusted accordingly when these decisions are made. ($175,000).

## STAFFING AND ADMINISTRATION

Both USAID and CDC currently have a Resident Advisor in place to manage the PMI. In addition, two Foreign Service nationals have been hired to support the PMI team. In 2011, a Peace Corps Response Volunteer has been seconded to the in-country PMI team. All PMI staff members are part of a single interagency team led by the USAID Mission Director in country. All staff members report to the Health Officer and the USAID Mission Director. The CDC staff person is supervised by CDC/Atlanta both technically and administratively.

The PMI professional staff work together to oversee all technical and administrative aspects of the PMI, including finalizing details of the project design, implementing malaria prevention and treatment activities, monitoring and evaluation of outcomes and impact, and reporting of results. The PMI team meets at least once per week and shares responsibility for development and implementation of the PMI strategies and work plans, coordination with national authorities, managing collaborating agencies, and supervising day-to-day activities. All technical activities are undertaken in close coordination with the MoH and NMCP and other national and international partners, including WHO, UNICEF, the Global Fund, World Bank, and the private sector.

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

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to include understanding barriers to utilization of RDT results. If the SPA does not go out, these funds will be used as originally intended.

**Table 1:**
**President's Malaria Initiative - Malawi**
**Year 6 (FY12) Budget Break-down by Partner ($23.4 M)**

| Partner Organization | Geographic Area | Activity | Budget |
|---|---|---|---|
| CDC/ TBD | Nationwide | Entomology, health facility survey, therapeutic drug efficacy study, SP efficacy | $ 1,014,000 |
| DELIVER | Nationwide | Procurement of LLINs, ACTs for community-level distribution, RDTs, support for parallel supply chain, TA for public sector supply chain and End Use Verification | $ 10,725,000 |
| TBD | IRS districts | Environmental monitoring | $ 25,000 |
| TBD | Nationwide | Microscopy support | $ 400,000 |
| IRS TO | IRS districts | Indoor residual spraying activities in Nkhotakota District, TA to NMCP for additional five IRS districts, IEC for community sensitization for IRS | $ 3,500,000 |
| BCC Project | Nationwide | National IEC campaign to promote year-round ITN use, community-based ITN hang-and-use campaign, national IPTp IEC and mass media campaign, community-based IPTp and case management IEC activities, mass media malaria IEC campaign. Small Grants mechanism will be used to ensure coverage of all districts in Malawi. | $ 2,000,000 |
| PSI LLIN | Nationwide | Distribution of LLINs to under 5s and ANCs, TA for LLIN policy and planning | $ 950,000 |
| SSD TBD | Nationwide | Support for FANC, TA for strengthening the national case management program including RDTs through training, supervision, and monitoring at community and facility level | $ 1,000,000 |
| TBD | Nationwide | Support for enhanced pre-service training curriculum development | $ 100,000 |

| | | | |
|---|---|---|---|
| TBD | Nationwide | NMCP secretariat support, additional HSS activities, M&E Advisor to NMCP | $ 450,000 |
| TBD | Nationwide | Support to GHI to strengthen health information systems | $100,000 |
| TBD | Nationwide | Support for infrastructure development at facility level under GHI | $ 200,000 |
| Deloitte | Nationwide | Review of supply chain | $ 300,000 |
| TBD | Nationwide | Support for mid-term project evaluations | $ 375,000 |
| TBD | Nationwide | Independent assessment of BCC activities and impact | $200,000 |
| World Health Organization | Nationwide | Support to WHO country malaria officer | $ 66,000 |

**Table 2:**
**President's Malaria Initiative - Malawi**

**PLANNED OBLIGATIONS FOR FY 2012**

| Proposed Activity | Mechanism | Total Budget | Commodities | Geographic area | Description of Activity |
|---|---|---|---|---|---|
| **Preventive Activities** | | | | | |
| **ITNs** | | | | | |
| Procurement of LLINs | DELIVER | $3,225,000 | $3,225,000 | Nationwide | ~540,000 WHOPES approved LLINs |
| Distribute LLINs for continuous distribution | PSI | $800,000 | | Nationwide | Distribution of LLINs to clinics and other continuous systems, including monitoring of distribution |
| Technical assistance to the NMCP for LLIN distribution | PSI | $150,000 | | Nationwide | Support to the NMCP efforts to plan the 2014 universal coverage campaign |
| National level BCC strategy and materials development | BCC Project | $200,000 | | Nationwide | Development of materials and harmonization of approaches, potentially explore new approaches such as care and repair, other target groups other communication approaches + supervision of small grants |
| Community-based small grants program | BCC Project | $450,000 | | Nationwide | Use of community-based organizations to encourage correct and consistent use of ITNs through interpersonal and community-level approaches |
| ***Subtotal*** | | ***$4,825,000*** | ***$3,225,000*** | | |
| **IRS** | | | | | |
| IRS in one district | Chemonics | $3,300,000 | $1,200,000 | KK | IRS supported directly by PMI in Nkhotakota district. and insecticide resistance plan |
| Technical assistance to NMCP | Chemonics | $200,000 | | MOH IRS districts (9) | Technical assistance to NMCP for the spraying of six additional districts |
| ***Subtotal*** | | ***$3,500,000*** | ***$1,200,000*** | | |
| **IPTp** | | | | | |
| Strengthening of IPTp via support for focused-ANC | Strengthening Service Delivery Project | $400,000 | | Nationwide | Support for the strengthening of national focused antenatal care programs particularly focused on improving the quality of Focused ANC services and proper |

| Proposed Activity | Mechanism | Total Budget | Commodities | Geographic area | Description of Activity |
|---|---|---|---|---|---|
| | | | | | implementation of IPTp guidelines |
| National level BCC strategy and materials development | BCC Project | $200,000 | | Nationwide | Development of materials and harmonization of approaches, potentially explore new approaches, support for Small Grants |
| SP IPTp Efficacy | TBD/Malaria Alert Centre | $214,000 | | Study Site | Support for a SP efficacy study to determine resistance to SP and the effectiveness of IPTp |
| Community IPTp BCC activities | BCC Project | $450,000 | | Nationwide | Community-based IEC/BCC campaign to increase the uptake of two doses of SP and improve ANC attendance by late or non-attending pregnant women |
| ***Subtotal*** | | ***$1,264,000*** | ***$0*** | | |
| **Case Management** | | | | | |
| Strengthen microscopy as part of a larger lab strengthening partnership | TBD | $400,000 | | Nationwide | Support for OTSS for microscopy as part of TB/PEPFAR lab strengthening efforts |
| Procurement and distribution of RDTs & ancillary commodities | DELIVER | $3,800,000 | $3,800,000 | Nationwide | Procurement and distribution of RDTs for PMI-supported village health clinics and health facilities through the PMI supported supply chain systems |
| Technical assistance to train, supervise and monitor using quality improvement in the community-based and facility with RDTs and case management program | Strengthening Service Delivery Project | $600,000 | | Nationwide | Provide technical assistance for improving the case management system at the facility and community level using quality improvement procedures |
| Technical assistance to HTSS to strengthen the supply chain | DELIVER | $600,000 | | Nationwide | Provide support for technical advisors in HTSS to provide technical assistance on supply chain issues |
| Commodity distribution | DELIVER | $900,000 | | Nationwide | Provide support for management, oversight and |

| Proposed Activity | Mechanism | Total Budget | Commodities | Geographic area | Description of Activity |
|---|---|---|---|---|---|
| through parallel supply chain | | | | | physical distribution of PMI-procured case management commodities |
| Procure and distribution of ACTs for community-level distribution | DELIVER | $2,000,000 | $2,000,000 | Nationwide | Procurement and distribution of ACT for PMI-supported village health clinics through the PMI supported supply chain systems |
| Pre-service training curriculum development | TBD | $100,000 | | Nationwide | Update malaria curriculum for new health workers |
| Community-based and integrated case management IEC campaign | BCC Project | $500,000 | | Nationwide | IEC material development and production to promote prompt and effective treatment of fever and to educate communities on national drug policy and the need for adherence. |
| National-level BCC strategy and materials development | BCC Project | $200,000 | | Nationwide | Development of materials and harmonization of approaches, potentially explore new approaches, other target groups other communication approaches + supervision of Small Grants |
| End User Verification | DELIVER | $200,000 | | Nationwide | Support for monitoring of PMI-procured commodities at health facility level |
| ***Subtotal*** | | ***$9,300,000*** | ***$5,800,000*** | | |
| **NMCP Capacity Building Health Systems Strengthening** | | | | | |
| Logistical and operational support to NMCP Secretariat | Health Policy and Systems Strengthening Project | $50,000 | | Nationwide | Assist the TWG operations via logistical and operational support |
| Salary support to WHO in-country malaria officer | World Health Organization | $66,000 | | Nationwide | To provide salary support to WHO in-country malaria officer |
| Infrastructure repairs of selected health centers | Health Policy and Systems Strengthening Project | 200,000 | | Selected sites | Support to integrated GHI investments to health facilities in need of electrification, running water, structural repairs |
| Support supervision | Health Policy and Systems Strengthening Project | $300,000 | | Nationwide | Health financing, DIPs strengthening, Supervision structures, HRH issues, especially HSA support |
| Support to GHI to | TBD | $100,000 | | Selected | Support to integrated GHI |

| Proposed Activity | Mechanism | Total Budget | Commodities | Geographic area | Description of Activity |
|---|---|---|---|---|---|
| CDC Temporary Duties | CDC | $80,000 | | | To provide technical assistance for the HF survey, entomology, and the therapeutic efficacy study |
| ***Subtotal*** | | ***$1,995,000*** | ***$0*** | | |
| **GRAND TOTAL** | | $23,400,000 | $10,225,000 | | |