



Executive Summary

# THE PRESIDENT'S MALARIA INITIATIVE

Eighth Annual Report to Congress | April 2014





Maggie Haldeman Photography

## Executive Summary

Across sub-Saharan Africa, where countries have scaled up insecticide-treated mosquito nets (ITNs), indoor residual spraying (IRS), improved diagnostic tests, and highly effective antimalarial drugs, mortality in children under five years of age has fallen dramatically. The risk of malaria is declining, and it is apparent that the cumulative efforts by the President's Malaria Initiative (PMI), national governments, The Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund), and many other partners are working. According to the World Health Organization's (WHO's) *2013 World Malaria Report*, the malaria mortality rates in children under five years of age in Africa were reduced by an estimated 54 percent between 2000 and 2012. Over the same period, the estimated number of malaria cases in all age groups in Africa dropped from 174 million to 165 million, together with a decrease in deaths due to malaria from 802,000 to 562,000.

The U.S. Government's financial and technical contributions have played a major role in this remarkable progress.

Nonetheless, malaria control is now at a key juncture. More than 1,000 children still die from malaria every day, and without sustained and vigilant efforts, the great progress made could be quickly reversed, and successful investments in malaria control could be lost. Therefore, we must redouble our efforts, sustain our financial resources, and accelerate the scale-up of malaria prevention and treatment measures lest we risk a resurgence of malaria. Fighting malaria not only saves lives, but also directly supports the achievement of broader development goals as better health contributes to poverty alleviation.

### SAVING CHILDREN'S LIVES

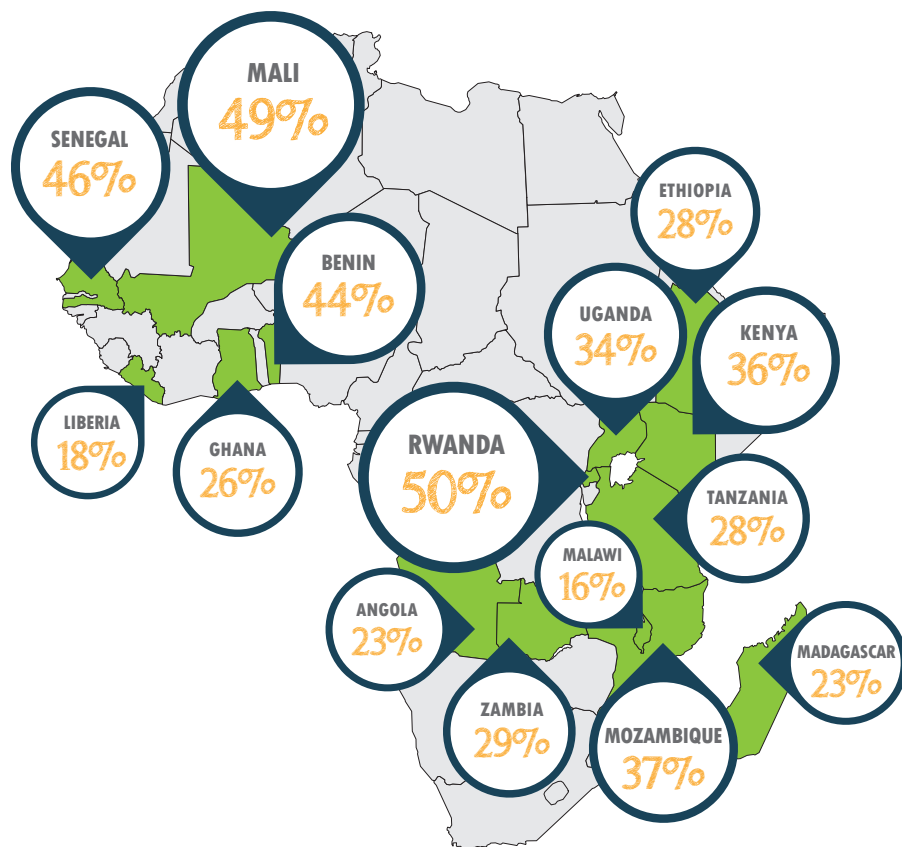
In PMI focus countries, the achievements in malaria control have been impressive

since PMI was first launched in June 2005. To date, all of the original 15 PMI focus countries have data from paired nationwide surveys that were conducted since PMI activities began. In all 15 focus countries, all-cause mortality rates among children under five years of age have significantly decreased. These declines have ranged from 16 percent in **Malawi** to 50 percent in **Rwanda** (see Figure 1).

### EVALUATING IMPACT

Although declines in all-cause under-five mortality are not exclusively due to malaria interventions, there is growing evidence that the scale-up of malaria prevention and treatment measures across sub-Saharan Africa is playing a major role in these unprecedented reductions. PMI is carefully estimating the contribution of malaria control efforts to declines in mortality in PMI focus countries through in-depth impact evaluations. These evaluations examine mortality reductions

**FIGURE 1**  
**Reductions in All-Cause Mortality Rates of Children Under Five**



Note: All 15 original PMI focus countries included in this figure have at least two data points from nationwide household surveys that measured all-cause mortality in children under the age of five. Refer to Appendix 3 (Figure 1) for more detail.

over the decade 2000–2010, whereas PMI calculates mortality reductions using baseline data corresponding to when countries joined PMI (see Figure 1). Six impact evaluations have been completed or are nearing completion (**Angola, Ethiopia, Malawi, Rwanda, Senegal, and Tanzania**). Furthermore, PMI is working with countries to continue to track reductions in disease burden. The findings from the three impact evaluations conducted during FY 2013 are summarized below:

- In **Ethiopia**, a 47 percent reduction in all-cause mortality among children under five years of age occurred in the period 2000–2011 together with improvements in access to health services and increases in coverage of malaria control interventions. More than 35,000 health extension

workers were trained to provide malaria case management services, ownership of ITNs increased tenfold to 55 percent in 2011, and households with at least one ITN or IRS in the last 12 months reached 71 percent in 2011. The proportion of malaria cases that were confirmed with a diagnostic test increased from less than 10 percent in 2000 to 83 percent in 2012. These improvements resulted in a very low malaria prevalence of only 1.3 percent in 2011.

- **Rwanda** has achieved some of the highest coverage of malaria control interventions in all of sub-Saharan Africa: 82 percent of all households own an ITN, 70 percent of children under the age of five and 72 percent of pregnant women either sleep under an ITN or sleep in a

household that has been sprayed with an insecticide, and 99 percent of malaria cases are confirmed by a diagnostic test. Malaria prevalence in children under five years of age declined from 2.6 percent in 2007 to only 1.4 percent in 2010. These malaria control interventions have contributed substantially to all-cause under-five mortality decreasing by 61 percent between 2000 and 2010.

- Between 2005 and 2010, **Senegal** reduced its all-cause under-five mortality rate by 40 percent from 121 to 72 deaths per 1,000 live births. Household ITN ownership increased to 63 percent by 2010 and use of ITNs by children under five years of age also increased significantly from 7 percent in 2005 to 35 percent in 2010. Decreases in two key impact indicators – severe anemia and malaria prevalence – were likely associated with malaria control interventions and were most pronounced among the poorest populations and in rural areas.

**PMI’S CONTRIBUTIONS**

Since PMI’s inception in 2005, the efforts of national governments, together with PMI, the Global Fund, the World Bank, the U.K. Department for International Development (DFID), and many other partners, have resulted in a massive scale-up of malaria prevention and treatment measures across focus countries (see PMI Contributions at a Glance on page 7). In fiscal year (FY) 2013 alone, PMI:

- Protected more than 21 million residents by spraying more than 5 million houses with insecticides
- Procured more than 40 million long-lasting ITNs
- Procured more than 10 million sulfadoxine-pyrimethamine (SP) treatments for intermittent preventive treatment for pregnant women (IPTp)
- Trained more than 16,000 health workers in IPTp
- Procured more than 48 million treatments of artemisinin-based combination therapy (ACT) and more than 51 million malaria rapid diagnostic tests (RDTs)

## PMI CONTRIBUTIONS AT A GLANCE

Indicator <sup>1</sup>	Year 1 (2006)	Year 2 (2007)	Year 3 (2008)	Year 4 (2009)	Year 5 (2010)	Year 6 (FY 2011) <sup>2</sup>	Year 7 (FY 2012)	Year 8 (FY 2013)	Cumulative
People protected by IRS (houses sprayed)	2,097,056 (414,456)	18,827,709 (4,353,747)	25,157,408 (6,101,271)	26,965,164 (6,656,524)	27,199,063 (6,693,218)	28,344,173 (7,004,903)	30,297,000 (7,127,040)	21,801,615 (5,553,556)	N/A <sup>3</sup>
ITNs procured	1,047,393	5,210,432	6,481,827	15,160,302	18,592,039	23,174,496	21,407,129	40,877,491	123,621,109 (81,942,473 distributed)
ITNs procured by other donors and distributed with PMI support	–	369,900	1,287,624	2,966,011	11,728,674	19,307,756	10,927,791	5,888,463	48,723,286
SP treatments procured	–	583,333	1,784,999	1,657,998	6,264,752	4,701,162	4,493,217	10,881,600	29,169,062 (17,966,280 distributed)
Health workers trained in IPTp	1,994	3,153	12,557	14,015	14,146	28,872	27,348	16,159	N/A <sup>4</sup>
RDTs procured	1,004,875	2,082,600	2,429,000	6,254,000	13,340,910	14,572,510	28,957,905	51,939,940	114,479,230 (67,039,333 distributed)
Health workers trained in malaria diagnosis (RDTs and/or microscopy)	–	1,370	1,663	2,856	17,335	34,740	28,210	26,232	N/A <sup>4</sup>
ACT treatments procured	1,229,550	8,851,820	22,354,139	21,833,155	41,048,295	38,588,220	72,345,860	48,433,634	237,602,123 (185,021,809 distributed)
ACT treatments procured by other donors and distributed with PMI support	–	8,709,140	112,330	8,855,401	3,536,554	6,993,809	950,239	1,466,959	29,559,232
Health workers trained in treatment with ACTs	8,344	20,864	35,397	41,273	36,458	42,183	39,797	61,554	N/A <sup>4</sup>

<sup>1</sup> The data reported in this table are up-to-date as of September 30, 2013, and include all PMI focus countries and the Greater Mekong Subregion. In addition, during FY 2013, the U.S. Government provided support for malaria prevention and control activities in other countries. For data by country, see Appendix 2.

<sup>2</sup> In Year 6, PMI transitioned from a calendar year to a fiscal year reporting schedule. The cumulative column takes into account the three-month overlap between Year 5 (covering the 2010 calendar year) and Year 6 (covering the 2011 fiscal year).

<sup>3</sup> A cumulative count of people protected by IRS is not provided because most areas are sprayed on more than one occasion.

<sup>4</sup> A cumulative count of individual health workers trained is not provided because some health workers have been trained on more than one occasion.

- Trained more than 61,000 health workers in treatment of malaria with ACTs and more than 26,000 health workers in laboratory diagnosis of malaria

In addition, in seven PMI focus countries (**Angola, Democratic Republic of the Congo [DRC], Guinea, Mali, Nigeria, Uganda, and Zimbabwe**) and in the **Greater Mekong Subregion**, PMI assisted with the distribution of more than 5 million long-lasting ITNs and more than 1 million ACTs that were procured by other donors, highlighting the well established and productive collaboration between PMI and its partners.

### SCALING UP MALARIA CONTROL INTERVENTIONS

PMI's contributions, together with those of other partners, have led to dramatic improvements in the coverage of malaria control interventions in PMI focus countries. In 19 countries where at least two comparable nationwide household surveys have

been conducted since PMI activities were launched:

- Household ownership of at least one ITN increased from a median\* of 29 percent to 55 percent.
- Usage of an ITN the night before the survey increased from a median\* of 20 percent to 43 percent for children under five years.
- Usage of an ITN the night before the survey more than doubled from a median\* of 17 percent to 43 percent for pregnant women.

In all 17 countries where IPTp is national policy and where at least two comparable nationwide household surveys have been conducted since PMI activities were launched:

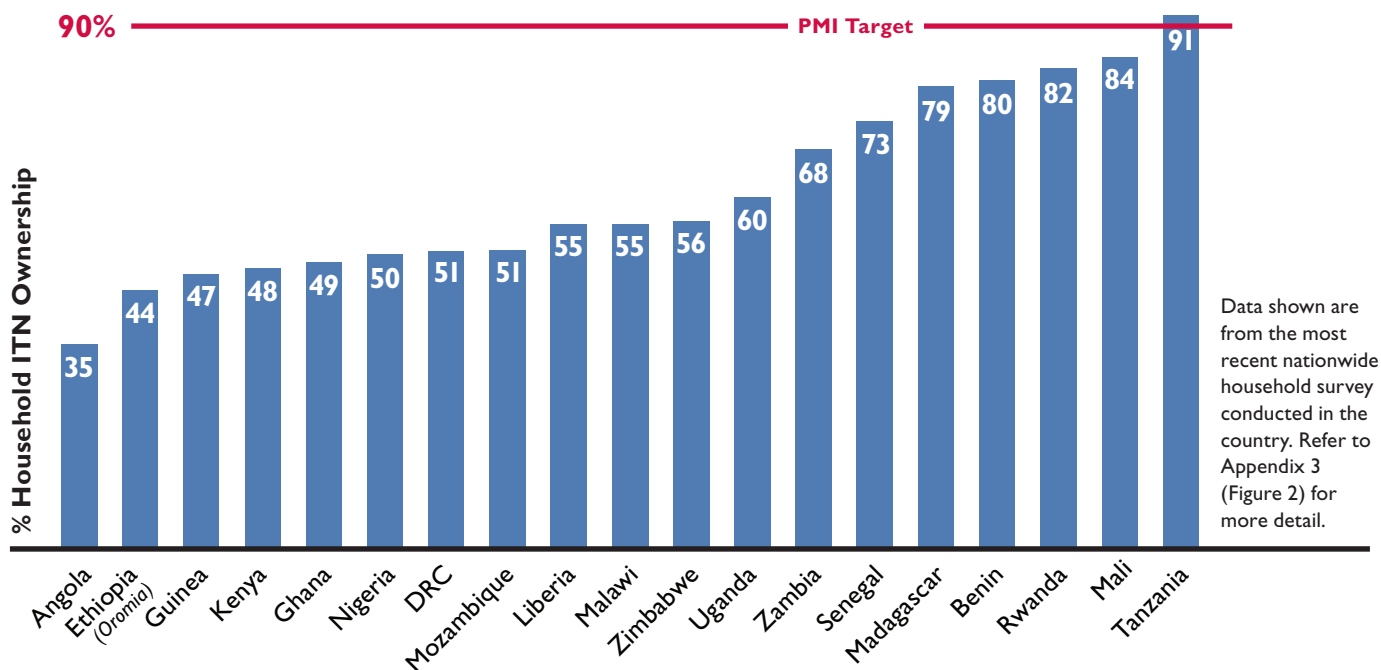
- The proportion of pregnant women who received two or more doses of IPTp (IPTp2) for the prevention of malaria

increased from a median\* of 13 percent to 25 percent.

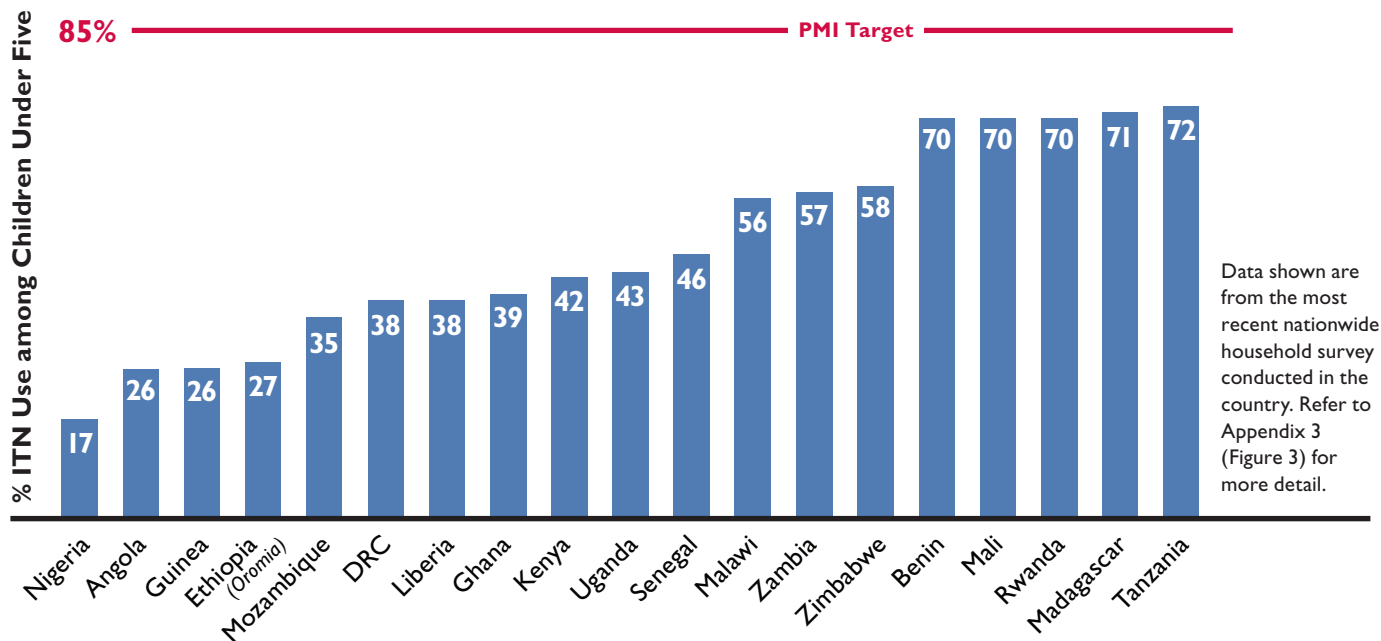
In PMI focus countries overall, there has been enormous progress in ITN ownership and use. However, while some countries are nearing PMI targets for net ownership and use among children and pregnant women (e.g., **Benin, Madagascar, Mali, Rwanda, and Tanzania**), others still have further to go (see Figures 2 and 3). Progress has been slower for IPTp. While most PMI focus countries show low IPTp2 coverage, some countries, such as **Zambia and Zimbabwe**, have reached 70 and 75 percent coverage, respectively. To increase coverage, PMI intensified its support for the development and implementation of global malaria in pregnancy policies as well as training and supervision of health workers on IPTp guidance. PMI has also continued to support IRS activities; in FY 2013, more than 90

\* The median is the middle value of a set of numbers ordered by rank.

**FIGURE 2**  
Household Ownership of at Least One ITN



**FIGURE 3**  
ITN Use among Children Under Five



percent of houses targeted were successfully sprayed, protecting more than 21 million people in 15 countries.

PMI’s scale-up of effective diagnosis and treatment of malaria in all 19 focus countries in sub-Saharan Africa is starting to show results. At health facilities and at the community level throughout PMI focus countries, RDTs and ACTs are now widely available,

and health workers have been trained in their use. Where quality data are available, annual increases in the proportion of suspected malaria cases that are confirmed with laboratory tests and treated with a recommended anti-malarial drug have been observed in nearly all focus countries. For example, more than 80 percent of malaria cases are now confirmed by a diagnostic test in **Ethiopia** and **Senegal** and close to 100 percent in **Rwanda** and

**Zanzibar**. Furthermore, accurate diagnosis facilitates the detection and appropriate treatment of other causes of fever.

As a result of PMI’s support for ITNs, IPTp, IRS, and appropriate diagnosis and treatment, a large proportion of at-risk populations in PMI focus countries are now benefiting from highly effective malaria control measures.

## LEVERAGING PARTNERSHIPS

PMI is one of the major international financers of malaria control (15 percent of total aid for malaria since 2002) along with the Global Fund (76 percent), the World Bank Malaria Booster Program (8 percent), and the United Kingdom, which has recently substantially increased its effort.<sup>1</sup> Partnerships at the country and global levels are central to the success of PMI's malaria control efforts. PMI strategically targets its investments to support each focus country's malaria control strategy and plan and coordinates activities with a wide range of partner organizations. These include multilateral and bilateral institutions, such as WHO and the United Nations Children's Fund (UNICEF); private foundations, such as the Bill & Melinda Gates Foundation, Clinton Foundation, and UN Foundation; other U.S. Government programs; and numerous nonprofit and faith-based organizations. Examples of PMI partnerships in FY 2013 include:

- PMI and DFID continued to collaborate closely in **Zambia**, where DFID has channeled funding to PMI for the procurement of antimalarial commodities. In FY 2013, using DFID funds, PMI procured more than 271,000 ITNs, 2 million RDTs, and 4.4 million ACTs for Zambia. The ongoing strong collaboration with DFID will make it possible to fill commodity gaps and improve access to commodities through 2015.
- PMI continued to be an active member of the Roll Back Malaria (RBM) Partnership, providing financial support for numerous RBM activities, serving on the partnership's Board of Directors, and participating in many of its working groups. During FY 2013, PMI supported an evaluation of RBM's subregional networks and worked closely with the RBM Secretariat to strengthen the overall support these networks provide to countries to improve their malaria control efforts.
- PMI's collaboration with UNICEF in introducing and scaling up integrated community case management in a number of countries has now expanded to include the rollout of seasonal malaria chemoprevention for children in **Mali** and **Senegal**.
- To extend the reach of malaria control interventions into communities, nearly 900



*PMI is exploring how new technologies can facilitate the collection and transmission of data. In Rwanda, a mobile phone is used to record data about storage conditions for IRS equipment.*

*Credit: Abt Associates*

Peace Corps volunteers in 13 PMI focus countries assisted with malaria control activities, such as long-lasting ITN distribution campaigns and operations research.

- In FY 2013, PMI and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) continued to work to strengthen and expand collaboration in the 13 countries where both programs are present. For example, in **Nigeria**, the collaboration included combined training, supervision, and quality assurance of laboratories for malaria, HIV, and tuberculosis testing.
- To date, PMI has supported malaria activities through more than 200 nonprofit organizations, approximately one-third of which are faith based. These groups often have strong and highly effective bases of operations in underserved rural areas where the burden of malaria is greatest.

## SUPPORTING RESEARCH

Research to support malaria control efforts and reduce the burden of malaria has been a high priority of the U.S. Government for many years. The U.S. Government malaria research effort involves the U.S. Centers for Disease Control and Prevention (CDC) and the National Institutes of Health of the Department of Health and Human Services, the Naval Medical Research Center

and the Walter Reed Army Institute of Research of the Department of Defense, and the U.S. Agency for International Development (USAID).

While USAID does not directly conduct malaria research, it invested approximately \$11 million in FY 2013 to support development of new antimalarial drugs and malaria vaccines. PMI complements the more upstream malaria vaccine and drug development work of other U.S. Government agencies by supporting operational research to help guide its program investments, make policy recommendations to national malaria control programs (NMCPs), and target interventions to increase their cost-effectiveness. As the burden of malaria falls in sub-Saharan Africa, operational research will help programs adjust to the changing epidemiological landscape. PMI funds operational research across all interventions to improve uptake and scale-up, preserve intervention effectiveness in the face of resistance, and assess how to incorporate new interventions and when to withdraw less effective interventions. To facilitate the identification and prioritization of operational research questions that are important for PMI, headquarters and field staff developed the

1. [www.rollbackmalaria.org/financing/funding-tends.html](http://www.rollbackmalaria.org/financing/funding-tends.html)



Spray operators receive training in Ethiopia, where community-based IRS utilizes female health extension workers who supervise local IRS teams.

Credit: Abt Associates

*Strategic Guidance for Operational Research* and a list of priority research activities. External review of this list confirmed that PMI's research priorities are consistent with the priorities of the global malaria research community. PMI carries out operations research in collaboration with local investigators and institutions, thus strengthening in-country capacity to undertake research. Examples of PMI-supported operational research in FY 2013 include:

- In **Benin** and **Ghana**, a study was conducted to evaluate progress and best practices for scaling up diagnostic testing,

which included site visits to health facilities to observe patient consultations and laboratory practices. In both countries, health workers correctly interpreted the results of RDTs almost 100 percent of the time. The accuracy of malaria microscopy was 85 percent in Ghana but lower in Benin (70 percent). In Benin, more than 90 percent of patients with fever were referred for a diagnostic test, while less than 60 percent were referred in Ghana. PMI is working with counterparts in Ghana and Benin to refine and strengthen training, supervision, and quality assurance activities to address the noted deficiencies.

- In **Tanzania**, PMI supported a study to understand the impact of combining IRS and ITNs on malaria transmission. The findings demonstrated that IRS provided additional protection against malaria as compared with ITNs alone in this context, adding to the global knowledge base on combining vector control interventions.
- PMI conducted qualitative studies in **Benin**, **Malawi**, and **Mali** to understand the concerns of pregnant women around taking SP and the attitudes and practices of health care providers regarding the administration of IPTp. Study findings pointed to a need to retrain providers in the simplified dosing regimen recently approved by WHO. Practical obstacles to implementing directly observed administration of IPTp, such as lack of clean drinking water at health facilities and concerns among pregnant women about taking SP on an empty stomach, were also identified as barriers to IPTp scale-up.

- To address the growing issue of pyrethroid resistance, PMI is funding a study in **Mali** evaluating the effectiveness of second generation long-lasting ITNs that use a synergist to enhance insecticide activity, as well as a study on second generation non-pyrethroid durable wall liners in **Tanzania** to determine their potential as an effective alternative to IRS.

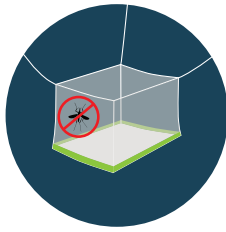
### **STRENGTHENING HEALTH SYSTEMS AND BUILDING NATIONAL CAPACITY**

PMI supports the strengthening of the overall capacity of health systems, both

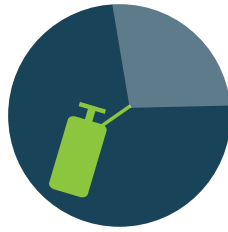
## *Fostering Innovation in Malaria Control*

To improve the delivery of interventions, PMI continues to develop and advance innovations in malaria control. For example, in 12 focus countries, PMI is piloting an innovative mobile application using smartphones to conduct environmental compliance assessments for IRS programs. Results are uploaded to a central database, and it is anticipated that this will allow IRS programs to reduce errors, respond more quickly to correct issues, and improve overall supervision of environmental compliance activities. In **Benin**, **Ghana**, and **Liberia**, PMI's IRS program has devised an innovative way to dispose of used insecticide bottles by recycling them into pavement blocks. And, building on a similar accomplishment in **Mali**, PMI converted a shipping container into a working insectary in **Angola**. This "insectary-in-a-box" model can serve as a quickly implementable, cost-effective solution to carry out entomological monitoring that ultimately results in improved quality of IRS.

## IN FY 2013, PMI:



Procured **+40M**  
long-lasting insecticide-  
treated nets



Sprayed **+5M** houses  
with insecticides



Procured **+10M** preventive  
treatments for pregnant women  
and trained **+16,000** health  
workers in their use



Procured **+48M**  
antimalarial treatments  
and **+51M** rapid  
diagnostic tests

directly and indirectly. In highly endemic countries, malaria typically accounts for 30 to 40 percent of outpatient visits and hospital admissions. Reducing malaria transmission levels in these countries unburdens the health system so health workers can concentrate on managing other important childhood illnesses and conditions, such as pneumonia, diarrhea, and malnutrition. A PMI-funded study in **Zambia** showed substantial reductions in inpatient admissions and outpatient visits for malaria after the scale-up of malaria control interventions, and hospital spending on malaria admissions also decreased by a factor of 10.<sup>2</sup> In addition to providing assistance to countries to roll out malaria-specific activities, PMI helps build national capacity in a variety of cross-cutting areas that benefit both malaria and other health programs. This support includes strengthening supply chain management, laboratory diagnosis, and monitoring and evaluation systems. In FY 2013, PMI efforts to strengthen health systems included:

- Building a cadre of ministry of health staff with technical skills in the collection, analysis, and interpretation of data for decision-making and epidemiologic investigations through support to the CDC's Field Epidemiology and Laboratory Training Program in 12 PMI focus countries in Africa (**Angola, DRC, Ethiopia, Ghana, Kenya, Mozambique, Nigeria, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe**) and in the **Greater Me-kong Subregion (Burma)**, supporting approximately 70 trainees globally to date
- Supporting supervision and training of health workers at all levels of the health

system, including in the community – more than 61,000 health workers were trained in the treatment of malaria with ACTs

- Providing technical assistance and programmatic support for forecasting commodity requirements (e.g., diagnostic tests and drugs), conducting quality testing of those commodities, strengthening supply chain management systems, and improving the tracking of those commodities in all PMI focus countries in Africa to ensure an uninterrupted supply of commodities and protect their quality and safety
- Collaborating with ministries of health and other partners to build quality assurance systems for laboratories that conduct malaria diagnosis and improve the overall quality of health care
- Supporting drug and insecticide-resistance monitoring systems

PMI also fosters country ownership by carrying out annual planning visits with NMCPs and their partners to collaboratively develop annual PMI Malaria Operational Plans that directly support national malaria control strategies and priorities. Furthermore, PMI's in-country teams worked with NMCPs during FY 2013 to help develop concept notes under the Global Fund's new funding model, thus increasing capacity to write successful malaria proposals.

### LOOKING AHEAD

The decade of progress that we have witnessed in the fight against malaria is historic. However, technical challenges remain, including sustaining high ITN cov-

erage over time, ensuring that more women receive IPTp2 during their pregnancies, managing antimalarial drug and insecticide resistance, and supporting the implementation of diagnostic testing for all suspected malaria cases together with appropriate treatment for confirmed malaria cases. Looking ahead, PMI and the global malaria community will need to address a number of challenges, including:

- **Antimalarial Drug and Insecticide Resistance:** While resistance to artemisinin drugs has thus far been confined to Southeast Asia, its spread to sub-Saharan Africa would result in a major setback for malaria control efforts on the continent. Resistance of the mosquito vector of malaria to the pyrethroid class of insecticides, which are widely used for IRS and are the only insecticides currently recommended for ITNs, has already been detected in multiple sites in Africa. PMI is therefore supporting NMCPs to conduct regular monitoring of both antimalarial drug and insecticide resistance. PMI is also supporting studies to assess the impact of emerging insecticide resistance on the effectiveness of ITNs and IRS. Furthermore, PMI is looking at other approaches, such as rotation of insecticides used for IRS, to delay the development of further resistance to pyrethroid insecticides and prolong their effectiveness on ITNs.

2. Comfort, A.B. et al. (2014). Hospitalizations and Costs Incurred at the Facility Level after Scale-up of Malaria Control: Pre-Post Comparisons from Two Hospitals in Zambia. *American Journal of Tropical Medicine and Hygiene*, 90: 20-32



PMI, launched in June 2005 by President George W. Bush, represented a major five-year, \$1.265 billion expansion of U.S. Government resources for malaria control. The Initiative is led by USAID and implemented together with the CDC. Based on the 2008 Lantos-Hyde United States Leadership against HIV/AIDS, Tuberculosis, and Malaria Act, which authorized a further increase of up to \$5 billion in PMI funding, PMI's goal was broadened to achieve Africa-wide impact by halving the burden of malaria in 70 percent of at-risk populations in sub-Saharan Africa, i.e., approximately 450 million people. PMI funds programs in 19 focus countries in Africa and 1 regional program in the Greater Mekong Subregion of Southeast Asia (see Appendix 1). In addition, USAID provides malaria funding to Burkina Faso, Burundi, and South Sudan in Africa and the regional Amazon Malaria Initiative in Latin America (which includes Brazil, Colombia, Ecuador, Guyana, Peru, and Suriname).

PMI's efforts to reduce malaria mortality directly contribute to the goal to end preventable child deaths, as articulated by the 2012 Call to Action and implemented through A Promise Renewed, a joint global effort led by the Governments of Ethiopia, India, and the United States, in collaboration with UNICEF. Furthermore, reducing malaria transmission unburdens health systems, allowing health workers to address other important childhood illnesses and conditions, such as pneumonia, diarrhea, and malnutrition. Malaria is also an important economic burden in affected countries, with wide-ranging effects from reduced school attendance and worker productivity to out-of-pocket spending on malaria treatment by households. A recent study<sup>3</sup> estimated that annual costs of malaria are \$38 million in Ghana, \$109 million in Kenya, and \$132 million in Tanzania, with average treatment costs per case ranging from \$7 to \$21. Combating malaria directly supports the achievement of broader development goals, such as the alleviation of extreme poverty.

- **Counterfeit and Substandard Drugs:** Counterfeit, falsified, and substandard medicines pose a considerable threat to public health. Substandard medical products increase the likelihood of drug resistance and harm to patients by preventing them from obtaining high quality medical products. Falsified medicines usually have no active ingredient or contain dangerous substances and can also cause serious harm to patients. Malaria medicines have been particularly vulnerable to these threats. As a major procurer of ACTs for public health programs in malaria-endemic Africa, PMI employs rigorous measures to ensure the integrity of the medicines it supplies. In recent years, PMI has increased its support to prevent the introduction of counterfeit drugs into supply chains, help national regulatory authorities improve drug quality, provide technical assistance on quality assurance testing, and strengthen capacity for monitoring and regulation in the public and private sectors.
- **Strengthening Surveillance and Data Systems:** As PMI has supported countries to successfully scale up malaria control interventions, malaria morbidity and mortality have declined. These decreases in malaria burden have often been uneven, with some parts of countries experiencing significant reductions in malaria cases and deaths, while other areas lag behind. Facing an increasingly complex pattern of malaria transmission in their countries, NMCPs will require more detailed and granular information on malaria burden and coverage of interventions, so their resources can be better targeted.

In the years ahead, tailoring PMI support for each country will take into consideration the existing capacity, malaria burden, and the availability and quality of malaria data, among other factors. PMI will support a range of activities, including strengthening malaria epidemic detection and response, community-based malaria surveillance, the use of mobile technology for malaria surveillance and commodity tracking, and the use of alternative data sources (such as school-based surveillance).

Through PMI, the U.S. Government remains steadfast in its commitment to fighting malaria and will continue to work together with other partners to overcome these and other challenges in program implementation. The tremendous expansion of financing and coverage of malaria control interventions has resulted in great successes in reducing the burden of malaria. PMI is recognized as a highly effective program that combines solid country-level support with global leadership on malaria prevention and control in close collaboration with other funding and technical partners. With an estimated 3 million malaria deaths averted among children under five years of age in Africa between 2001 and 2012, the Initiative remains dedicated to continuing to save lives, improving health systems, and building healthier, more productive communities.

---

3. Sicuri, E. et al. (2013). The Economic Costs of Malaria in Children in Three Sub-Saharan Countries: Ghana, Tanzania and Kenya. *Malaria Journal*, 12:307