U.S. President's Malaria Initiative

13th Annual Report to Congress

MAY 2019

Before joining the U.S. President's Malaria Initiative (PMI) in April 2018, it was clear to me how much respect and admiration it commanded worldwide. Over the past year, I have witnessed first-hand how PMI is a trusted partner of national governments, local communities, donors, faith groups, the private sector, and many others in the fight against malaria. PMI shows what is possible when we work together across the U.S. Government (USG), alongside many partners, to empower countries to lead the way to Zero Malaria. PMI's funding benefited a record number of people this year, and we saw significant progress as we continued to scale proven interventions and advance innovations that helped further drive down deaths. Looking forward to 2019 and beyond, we are excited to help expand the coverage of life-saving interventions, introduce new tools, and revolutionize our use and sharing of data to realize the global vision for a world without malaria.

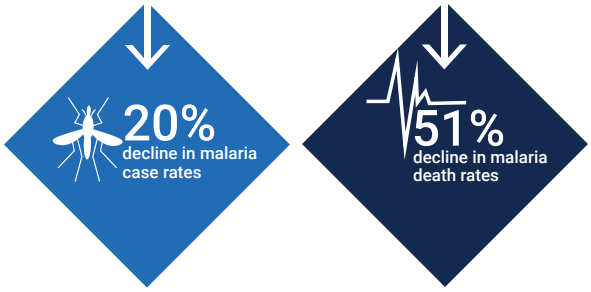
— Dr. Kenneth Staley, U.S. Global Malaria Coordinator

PMI IS DELIVERING ON ITS MISSION

PMI has been fighting mosquitoes and malaria parasites since President George W. Bush launched it in 2006. Before PMI started, a child would die from malaria every 30 seconds. U.S. technical and financial commitments through PMI and contributions by the U.S. Government (USG) to the Global Fund to Fight AIDS, Tuberculosis and Malaria, together with the efforts of national and global partners, have weakened malaria's grip worldwide. Thanks to USG leadership and collective global action, every two minutes, three of four children who would have died now survive.

With national governments in the lead and in close collaboration with global and local partners, PMI has helped countries achieve and maintain substantial reductions in malaria cases while continuing to save more lives each year (Figure 1). Focusing on Africa and Southeast Asia, where the need is greatest, PMI's central role in optimizing and scaling up proven, cost-effective interventions—such as insecticide-treated bed nets, indoor residual spraying (IRS), and

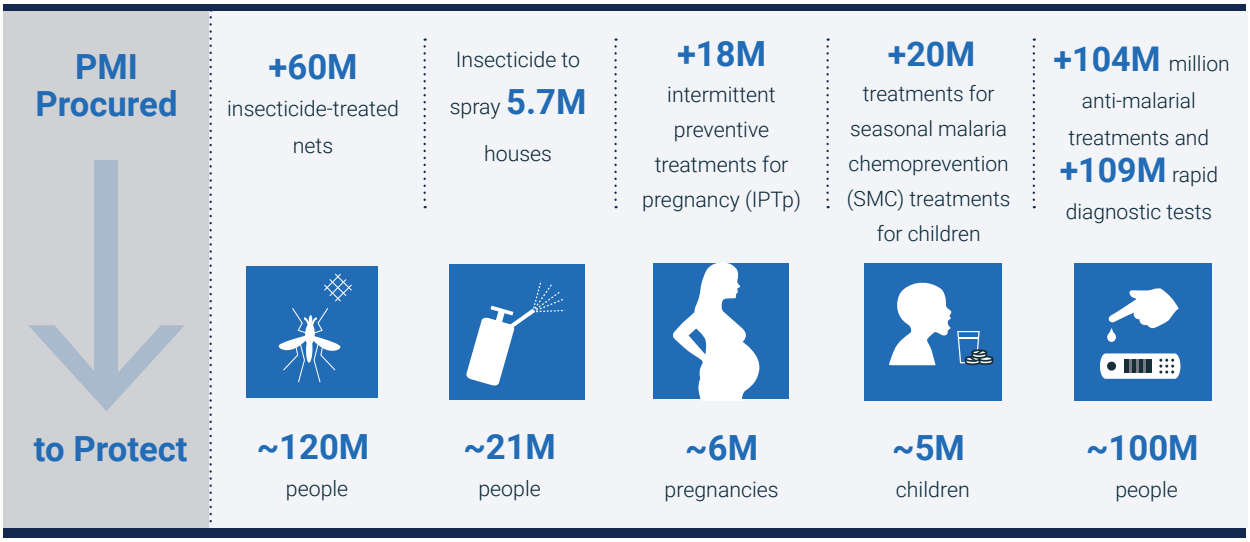
FIGURE 1. Since 2006, in countries where PMI works, global efforts have supported:



life-saving medicines—has helped drive these impressive results. PMI balances its commodity investments with catalytic technical and operational assistance for partners to generate even more impact. In Fiscal Year (FY) 2018, thanks to the bipartisan support of Congress and the American taxpayer, PMI benefited at least 570 million people at risk of malaria—90 million more than in FY 2017.

Preventing and controlling malaria remains a U.S. national security and foreign-assistance priority—and one of the most cost-effective development investments for the USG. Thanks to the generosity of the American people, PMI invested $723 million across 27 country programs in FY 2018.

FIGURE 2. PMI contributions to fight malaria in FY 2018



PMI IS DRIVING PROGRESS IN THE HARDEST PLACES

By design, PMI works where malaria hits the hardest. PMI's focus countries account for around 85 percent of global malaria cases, with the two largest and most complex—Nigeria and the Democratic Republic of the Congo (DRC)—accounting for 35 percent of all cases. Each PMI-collaborating country is different and presents its own logistical, environmental, political, and other challenges that influence the delivery of interventions and progress against the disease.

PMI now supports 24 countries in sub-Saharan Africa and 3 programs in the Greater Mekong Subregion. Burkina Faso, Cameroon, Côte d'Ivoire, Niger, and Sierra Leone launched as PMI focus countries in FY 2017, becoming fully operational in FY 2018.

In the DRC—more than triple the size and population of Texas—PMI's partners deliver malaria interventions despite disruptions caused by political or social unrest and other disease outbreaks like Ebola. Yet, malaria mortality has decreased by 30 percent in the DRC since 2011, and the total estimated number of deaths reported in the 2018 World Malaria Report published by the World Health Organization (WHO) fell to 46,007.[1] As PMI's program only covers a third of the DRC, we work closely with the National Malaria-Control Program, other donors, and a range of in-country partners to deliver interventions that sustain these gains, expand coverage, and respond to emerging threats.

Since 2006, total populations in PMI countries have increased by more than a third on average, raising the number of people at risk of malaria

Uganda, one of the first PMI focus countries, has seen a 45-percent growth in population since 2006, but a 30-percent decrease

in malaria cases, and a 57-percent reduction in malaria deaths across all ages. Even more encouraging is Uganda's 70-percent reduction in deaths attributable to malaria in children under five.[1]

In Ethiopia, after a decade of progress during which malaria case and death rates fell by more than 60 percent between 2006 and 2015, PMI is helping to finance Ethiopia's elimination efforts that have since contributed to another 30-percent decline in case rates and a 20-percent drop in death rates. PMI is also facilitating elimination in the Greater Mekong Subregion (where overall malaria cases in PMI-supported countries have continued to fall since 2015), and closely monitoring resistance to first-line anti-malarial drugs via a network of more than 40 surveillance sites.

With successes like these, the global conversation has shifted from controlling malaria to eradicating it from the globe. As we drive down the malaria burden and shrink the map of the disease, the fight is narrowing, but intensifying. We are simultaneously sustaining fragile gains, staying ahead of resistance to drugs and insecticides, optimizing the effectiveness of our interventions, and expanding coverage into more remote or challenging areas.

[1] 2018 World Malaria Report

PMI is building capacity to generate and use data to tackle malaria. More than 275 people (mostly from PMI focus countries) have completed an e-learning open course on measuring malaria through household surveys that PMI launched in June 2018 to build basic knowledge on collecting and interpreting key malaria indicators. PMI also held more advanced data courses in several countries, including training more than 40 health professionals from 18 African countries on key tools and data systems used to monitor malaria during intensive two-week regional workshops in Ghana (Anglophone) and Cote d'Ivoire (Francophone) in FY 2018.

PMI IS EMPOWERING GOVERNMENTS AND CIVIL SOCIETY IN COUNTRIES TO LEAD THE FIGHT

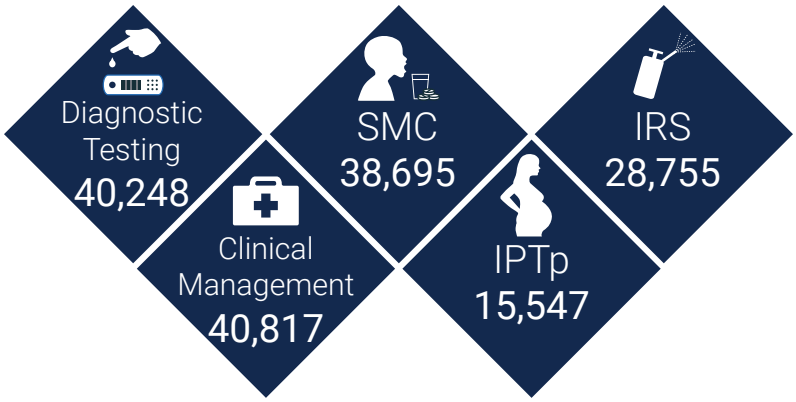
By controlling and eventually eliminating malaria, countries unlock economic growth and human potential. Assisting countries to overcome their malaria burden is an important development objective of the USG. PMI bolsters the capacity of governments and civil society to lead malaria-control efforts; promotes their Journey to Self-Reliance; and enables stronger, more productive partnerships with the United States.

To achieve our goal most efficiently, PMI's investments are country-driven, integrated, and designed to generate benefits that extend beyond malaria-control programs. For example, PMI invests in capacity-building for the health workforce (Figure 3), strengthens routine information systems, and reinforces the regulatory environment. Each of these investments is critical for the eradication of malaria, and contributes to stronger, more comprehensive health institutions that can tackle a broader array of health challenges and promote more-resilient malaria control.

At the community level, PMI funding strengthens models that deploy community health workers and scales up community-based approaches, both of which enable the more-efficient delivery of interventions. PMI also funds social and behavior-change interventions that reinforce its programs and enhance their effectiveness. In Malawi, for example, PMI reached more than 50,000 people in FY 2018 through community theater groups that provided vital health information and helped dispel common, community-held misbeliefs that make the elimination of malaria more difficult. In Zimbabwe, PMI enabled local health-center committees in commercial farming areas to organize around malaria, set priorities, enact effective strategies, and evaluate their actions, which led them to conduct door-to-door spot checks on families' use of mosquito nets and to promote early care-seeking behavior that helped reduce the local burden of malaria.

PMI helps countries strengthen regulatory systems to prevent counterfeit medicines and support global health security. For example, PMI helped Ghana's quality control lab achieve ISO accreditation in 2015, strengthening processes and standards that enable authorities to better detect and remove sub-standard antimalarials. In FY 2018, Ghana assumed the costs for maintaining accreditation and is leading its own re-accreditation process. Similarly, PMI is helping Guinea secure ISO certification and has provided technical assistance to update national pharmaceutical laws.

FIGURE 3. Number of health workers trained with PMI funds



Using a see one, do one, teach one model, PMI is creating a network of African scientists with the advanced molecular monitoring skills needed to track antimalarial drug resistance. In FY 2018, PMI trained researchers from Benin, DRC, and Tanzania, expanding the network's reach to nine countries. PMI is also building ministry capacity in epidemiology via a two-year advanced training program in 13 PMI partner countries. In FY 2018, 200 PMI-supported trainees graduated and 300 were enrolled, roughly a third of which were women. Many graduates go on to serve in ministry positions, leading malaria outbreak investigations and program improvements.

PMI IS BUILDING DIVERSE PARTNERSHIPS IN THE FIGHT AGAINST MALARIA

PMI's success depends on the strong partnerships it promotes among USG entities, other donors, technical experts, foundations, faith communities, and the private sector.

USG partnerships. PMI is a multi-agency initiative led by the U.S. Agency for International Development (USAID) and co-implemented with the U.S. Centers for Disease Control and Prevention within the U.S. Department of Health and Human Services (HHS), and has strong support from the U.S. Department of Defense (DoD), the HHS National Institutes of Health, Peace Corps, and other U.S. Departments and Agencies. PMI demonstrates the power of working as one USG toward a shared, measurable objective.

In Cameroon and Uganda, PMI works with the U.S. Navy Entomology Center of Excellence within DoD on research and vector-control programs that help protect the health of U.S. military personnel and the members of the armed forces of partner nations. In Nigeria, PMI works with the Walter Reed Army Institute of Research within DoD to institutionalize quality-assurance for malaria diagnostics. In FY 2018, the partnership helped train 48 Nigerian scientists to implement and supervise quality-assurance procedures in their labs. Initiated in eight PMI-supported Nigerian States, the Global Fund is now replicating the model in additional areas.

> ***"We promise to work closely with you shoulder to shoulder, every step of the way. We promise to fight back and conquer malaria together."***
> ***— USAID Administrator Mark Green***

Across many PMI countries, our programs are more effective through collaboration with Peace Corps. In Madagascar, volunteers helped educate rural communities on the benefits of, and preparation necessary for, IRS. Their work contributed to a well-received campaign in FY 2018 that sprayed almost 550,000 Malagasy homes, and protected more than two million people.

Partnerships with other donors. PMI works closely with other donors to ensure our collaborative efforts generate more impact than any of our investments would alone. Since 2006, PMI has engaged closely with the Global Fund to ensure a coordinated country-level response to malaria. PMI also works with the Bill and Melinda Gates Foundation to introduce and scale innovations. PMI, the Global Fund, and the Gates Foundation made significant commitments to advance collaboration around the collection, analysis, and sharing of data on malaria; the procurement, delivery, and tracking of malaria drugs and commodities; and the monitoring of global resistance to anti-malarial drugs and insecticides. With each progressive

step in the fight against malaria, we must work with other donors more deliberately than ever to leverage our funding and comparative advantages to accelerate progress.

> ***Malaria is a battle that can be won when everyone works together. PMI and the Global Fund are irreplaceable partners in the fight against malaria.***
> ***— Peter Sands, Executive Director of the Global Fund***

Partnerships with faith-based groups. PMI's collaborations with faith leaders and their communities foster local ownership, accountability, and sustainability. As countries progress toward malaria elimination, the work of faith groups becomes even more vital in connecting with hard-to-reach communities. Religious leaders can engage with and motivate communities to protect themselves and their loved ones against malaria. In Guinea, PMI financial and technical assistance brought religious leaders, health workers, youth groups, women's committees, and other villagers together in "community dialogues" to understand the reasons why malaria was much higher in their areas, and to develop action plans that reversed this trend.

In Zambia, PMI works closely with the inter-denominational Churches Health Association of Zambia (CHAZ)—a major health care provider supported by the Government of Zambia and the Global Fund. In FY 2018, PMI collaborated with CHAZ to distribute mosquito nets across four provinces and promote strong community engagement via its network of hospitals, health centers, health posts, community-based organizations, and training schools.

Partnerships with the private sector. Partnerships with commercial firms and private providers of health care provide key avenues for PMI to assist governments to reach more people and amplify impact. In Benin, where 65 percent of patients seek malaria care from the private sector, PMI worked with the Ministry of Health to boost access to affordable, high-quality diagnosis and treatment for malaria. As a result of the innovative effort, PMI trained more than 400 health workers on best practices and national protocols; accredited 145 private facilities; and put in place strict new requirements for quality, price, and reporting. In addition, reporting from participating private facilities into the national health-information system rose from 77 percent in January 2017 to 96 percent in June 2018, which gives the Ministry more-robust data for decision-making and demonstrates the value of public-private partnerships.

> ***Church is a perfect place for spreading information, because when people come to church they are devoted. Their ears are open.***
> ***— Beneficiary***

PMI IS IMPROVING THE DELIVERY OF PROVEN TOOLS AT SCALE

PMI employs the most effective weapons against malaria, including insecticide-treated bed nets, indoor residual spraying with insecticides, rapid tests to diagnose infection, and medicines to prevent and treat malaria. These core interventions remain the best offense. PMI continually improves its performance and addresses challenges through cutting-edge research, dynamic collaborations, and pioneering data initiatives.

Protecting larger populations. Ensuring widespread coverage of interventions is critical to breaking the transmission cycle of malaria and preventing resistance. Despite the challenge of rising total populations within each focus country—meaning more people must be covered with the same resources—PMI continues to expand its reach and impact.

Delivering proven interventions in new ways. Distribution of nets through schools has emerged as a promising continuous delivery mechanism that incorporates domestic contributions for improved sustainability. After testing the approach in Ghana and Tanzania, PMI piloted school-based distribution of nets in several more countries in FY 2018, including Benin, the DRC, Guinea, and Mozambique.

PMI supported 20+ operational research studies in FY 2018.

Taking newer solutions to scale. In recent years, SMC has emerged as a highly effective approach to dramatically reduce child mortality in areas where malaria follows seasonal

patterns. Devised by African scientists, SMC delivers preventive medicine to as many children under five as possible during peak malaria season. After testing SMC's viability in Mali and Senegal, PMI adopted it as a core intervention in FY 2018, and procured enough medicine to protect more than five million children across seven countries that have highly seasonal transmission of the disease.

Expanding available tools. As a leading donor with extensive on-the-ground capacity plus technical and programmatic experience, PMI is a major channel for bringing innovations to the field. PMI added several innovations to its tool kit in FY 2018.

- ***New Nets***. PMI procured pyrethroid-piperonyl butoxide (PBO) combination nets following updated policy recommendations from WHO

on their deployment. PMI also collaborated with Unitaid and the Global Fund on their initiative to roll out next-generation nets, which PMI plans to procure in FY 2019, to help generate data and guide international policy on their use.

PMI funds around 230 sites to monitor resistance by mosquitoes to insecticides. In FY 2018, PMI added susceptibility testing for new net chemistries, and financed PBO assays in 15 countries and susceptibility testing for the new insecticide chlorfenapyr in 14 countries to identify where to deploy new nets.

- ***New insecticides***. PMI began procuring a new insecticide formulation (clothianidin) for IRS in FY 2018, and deployed it for the first time in spray campaigns across five countries (Burkina Faso, Ghana, Madagascar, Mali, and Tanzania). With this new tool, governments and their partners can implement insecticide-rotation strategies to combat resistance. In addition, PMI financed susceptibility-testing for clothianidin in 11 countries, providing the evidence base needed to procure this product.
- ***New medicines.*** PMI helps shape markets for novel antimalarial treatments. In FY 2018, PMI procured more than 700,000 quality-assured rectal artesunate suppositories following their pre-qualification by WHO, and funded the training of health workers to administer the treatment, which will enable children with severe malaria to receive this life-saving medicine at the community level.

Generating cost savings. PMI promotes a healthy, competitive marketplace for quality malaria drugs and commodities through strategic procurements that adhere to strict standards. In FY 2018, PMI saved more than $22 million on commodities through promoting a diverse supplier pool, negotiating long-term contracts, expanding economies of scale, and simplifying processes for orders. Achieving a long-held goal, PMI also standardized the shape, size, and color of insecticide-treated nets, which allows for greater interchangeability across orders and generates further cost-savings. By driving down costs, PMI maximizes its funds, and ensures U.S. taxpayer dollars continue to save the most lives possible. PMI also is finding ways to improve efficiency while protecting the environment. In Benin, PMI worked with a

local non-governmental organization (NGO) to recycle more than 6,000 commodity boxes into low-cost construction materials, and re-purposed shipping containers into mobile storage facilities for a fraction of the cost of permanent structures. In Malawi, PMI co-invested with the U.S. President's Emergency Plan for AIDS Relief and the Department for International Development of the United Kingdom to build 117 pharmacy storage units where solar power regulates temperature, fuels security systems, and enables a secure connection to the government's central health-information portal. The units add a combined 2.4 megawatts per day to Malawi's energy sector, and enable the country to ensure a more secure and stable commodity supply.

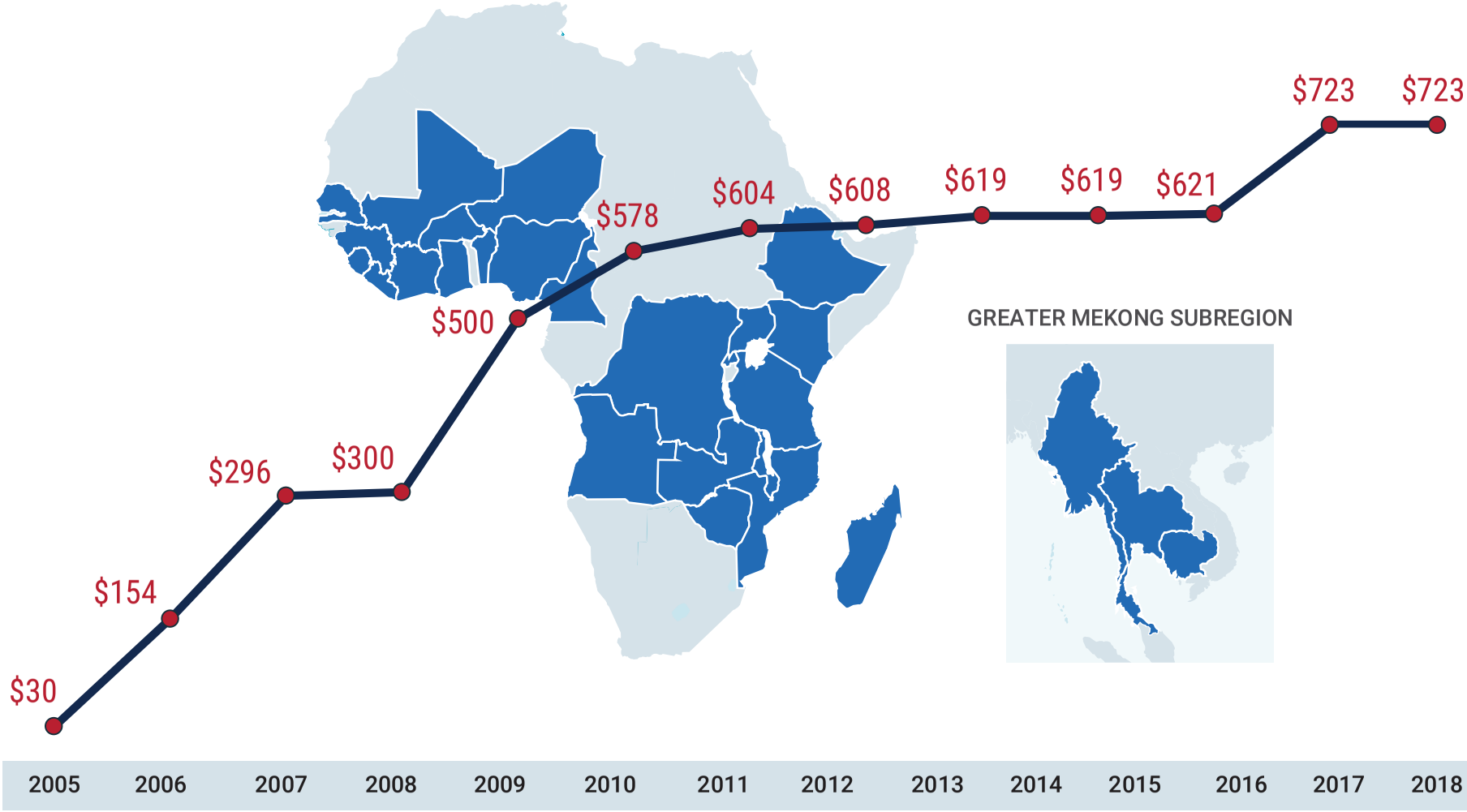
PMI funded 27 end-use verification surveys in FY 2018, bringing the total to 291 cumulative across 19 countries.

Driving change with data. PMI values transparency, accountability, and evidence-based programming. To further these goals, PMI is committing to support the efforts of national governments and their partners to generate real-time data to maximize transparently the impact of malaria control and elimination for each dollar invested. In FY 2018, PMI took initial steps to streamline its reporting processes to become more agile and responsive to evolving needs. A data-focused strategy is essential to guide the next phase of the global fight to eliminate malaria.

Looking forward. American leadership, including its financial and technical contributions through PMI, remains a cornerstone of continued progress. Recent reported increases in cases of malaria in some sub-Saharan African countries reminds us how fragile progress toward global elimination can be—which underscores the importance of sustained investment to keep hard-won gains against this opportunistic, unrelenting, yet preventable disease. Since the inception of PMI in 2005, the U.S. Government and the American people have shown the unwavering commitment needed to save lives and advance a free, peaceful, and prosperous world free of malaria, and commitment that will continue into 2019 and beyond.

ANNEX 1:
FUNDING FOR THE U.S. PRESIDENT'S MALARIA INITIATIVE (PMI)

A1-1. PMI Country Funding, 2005 to 2018



NOTE: Please refer to funding table A1-2 for more information. This graphic does not include funding programmed for malaria beyond PMI partner countries. USAID also supports programs in Burundi and in the Latin America and Caribbean region, complemented by a portfolio of malaria research and other discrete investments that advance global malaria policy. In addition to the PMI country funding shown above, the U.S. Government is the largest donor to the Global Fund. The Global Fund was the other leading source of donor funding for country malaria programs over the same period.

A1-2. PMI Funding, 2005 to 2018

Country[1]	FY 2005 Jumpstart Funding	FY 2006	FY 2007[2]	FY2008[3]	FY2009	FY2010[4]	FY2011[5]	FY2012[6]	FY2013[7]	FY2014[9]	FY2015[10]	FY2016[11]	FY2017[12]	FY2018[13]	Total
Angola	1,740,000	7,500,000	18,500,000	18,846,000	18,700,000	35,500,000	30,614,000	30,750,000	28,547,000	29,000,000	28,000,000	27,000,000	22,000,000	22,000,000	**318,697,000**
Tanzania	2,000,000	11,500,000	31,000,000	33,725,000	35,000,000	52,000,000	46,906,000	49,000,000	46,057,000	46,000,000	46,000,000	46,000,000	44,000,000	44,000,000	**533,188,000**
Uganda	510,775	9,500,000	21,500,000	21,822,000	21,600,000	35,000,000	34,930,000	33,000,000	33,782,000	34,000,000	34,000,000	34,000,000	33,000,000	33,000,000	**379,644,775**
Malawi		2,045,000	18,500,000	17,854,000	17,700,000	27,000,000	26,447,000	24,600,000	24,075,000	22,000,000	22,000,000	22,000,000	22,000,000	24,000,000	**270,221,000**
Mozambique		6,259,000	18,000,000	19,838,000	19,700,000	38,000,000	29,241,000	30,000,000	29,023,000	29,000,000	29,000,000	29,000,000	29,000,000	29,000,000	**335,061,000**
Rwanda		1,479,000	20,000,000	16,862,000	16,300,000	18,000,000	18,962,000	18,100,000	18,003,000	17,500,000	18,000,000	18,000,000	18,000,000	18,000,000	**217,206,000**
Senegal		2,168,000	16,700,000	15,870,000	15,700,000	27,000,000	24,451,000	24,500,000	24,123,000	24,000,000	24,000,000	24,000,000	25,000,000	24,000,000	**271,512,000**
Benin		1,774,000	3,600,000	13,887,000	13,800,000	21,000,000	18,313,000	18,500,000	16,653,000	16,500,000	16,500,000	16,500,000	16,000,000	16,000,000	**189,027,000**
Ethiopia		2,563,000	6,700,000	19,838,000	19,700,000	31,000,000	40,918,000	43,000,000	43,772,000	45,000,000	44,000,000	40,000,000	37,000,000	36,000,000	**409,491,000**
Ghana		1,478,000	5,000,000	16,862,000	17,300,000	34,000,000	29,840,000	32,000,000	28,547,000	28,000,000	28,000,000	28,000,000	28,000,000	28,000,000	**305,027,000**
Kenya		5,470,000	6,050,000	19,838,000	19,700,000	40,000,000	36,427,000	36,450,000	34,257,000	35,000,000	35,000,000	35,000,000	35,000,000	35,000,000	**373,192,000**
Liberia			2,500,000	12,399,000	11,800,000	18,000,000	13,273,000	12,000,000	12,372,000	12,000,000	12,000,000	14,000,000	14,000,000	14,000,000	**148,344,000**
Madagascar		2,169,000	5,000,000	16,862,000	16,700,000	33,900,000	28,742,000	27,000,000	26,026,000	26,000,000	26,000,000	26,000,000	26,000,000	26,000,000	**286,399,000**
Mali		2,490,000	4,500,000	14,879,000	15,400,000	28,000,000	26,946,000	27,000,000	25,007,000	25,000,000	25,000,000	25,000,000	25,000,000	25,000,000	**269,222,000**
Zambia		7,659,000	9,470,000	14,879,000	14,879,000	25,600,000	23,952,000	25,700,000	24,027,000	24,000,000	24,000,000	25,000,000	30,000,000	30,000,000	**278,987,000**
DRC						18,000,000	34,930,000	38,000,000	41,870,000	50,000,000	50,000,000	50,000,000	50,000,000	50,000,000	**382,800,000**
Nigeria						18,000,000	43,588,000	60,100,000	73,271,000	75,000,000	75,000,000	75,000,000	75,000,000	70,000,000	**564,959,000**
Guinea							9,980,000	10,000,000	12,370,000	12,500,000	12,500,000	15,000,000	15,000,000	15,000,000	**102,350,000**
Zimbabwe							11,977,000	14,000,000	15,035,000	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	**116,012,000**
Mekong[8]							11,976,000	14,000,000	3,521,000	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000	**44,497,000**
Burma									6,566,000	8,000,000	9,000,000	10,000,000	10,000,000	10,000,000	**53,566,000**
Cambodia									3,997,000	4,500,000	4,500,000	6,000,000	10,000,000	10,000,000	**38,997,000**
Burkina Faso													25,000,000	25,000,000	**50,000,000**
Cameroon													20,000,000	22,500,000	**42,500,000**
Côte D'Ivoire													25,000,000	25,000,000	**50,000,000**
Niger													18,000,000	18,000,000	**36,000,000**
Sierra Leone													15,000,000	15,000,000	**30,000,000**
Headquarters		1,500,000	10,000,000	21,596,500	26,100,000	36,000,000	36,000,000	36,000,000	37,500,000	37,500,000	38,000,000	38,000,000	38,000,000	38,000,000	**396,696,500**
PMI Total		**30,000,000**	**154,200,000**	**295,857,500**	**299,900,000**	**500,000,000**	**578,413,000**	**603,700,000**	**608,401,000**	**618,500,000**	**618,500,000**	**621,500,000**	**723,000,000**	**723,000,000**	**6,374,971,500**
Jump-Start Total	**4,250,775**	**35,554,000**	**42,820,000**	**0**	**0**	**36,000,000**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**118,624,775**
Total Overall	**4,250,775**	**65,554,000**	**197,020,000**	**295,857,500**	**299,900,000**	**536,000,000**	**578,413,000**	**603,700,000**	**608,401,000**	**618,500,000**	**618,500,000**	**621,500,000**	**723,000,000**	**723,000,000**	**6,493,596,275**

(1) This table does not include other U.S. Government funding for malaria activities from the U.S. Agency for International Development (USAID), the U.S. Centers for Disease Control and Prevention (CDC), the National Institutes of Health or the Department of Defense. (2) $25 million plus-up funds include $22 million allocated to 15 PMI focus countries ($19.2 million for Round 2 countries and $2.8 million for jump-starts in Round 3 countries). (3) Levels after USAID 0.81-percent rescission. (4) In FY 2010, USAID also provided funding for malaria activities in Burkina Faso ($6 million), Burundi ($6 million), Pakistan ($5 million), South Sudan ($4.5 million), the Amazon Malaria Initiative ($5 million), and the Mekong Malaria Programme ($6 million). (5) In FY 2011, USAID also provided funding for malaria activities in Burkina Faso ($5,988,000), Burundi ($5,988,000), South Sudan ($4,491,000), and the Amazon Malaria Initiative ($4,990,000). (6) In FY 2012, USAID also provided funding for malaria activities in Burkina Faso ($9,000,000), Burundi ($8,000,000), South Sudan ($6,300,000), and the Amazon Malaria Initiative ($4,000,000). (7) In FY 2013, USAID also provided funding for malaria activities in Burkina Faso ($9,421,000), Burundi ($9,229,000), South Sudan ($6,947,000), and the Amazon Malaria Initiative ($3,521,000). (8) Starting in FY 2011, PMI funding to the Greater Mekong Subregion was programmed through the Mekong Regional Program. With FY 2013 funding, PMI began supporting activities in Burma and Cambodia directly. In addition, PMI continued to provide FY 2013 funding to the Mekong Regional Program for activities in the region outside of the PMI Burma and PMI Cambodia bilateral programs. (9) In FY 2014, USAID also provided funding for malaria activities in Burkina Faso ($9,500,000), Burundi ($9,500,000), South Sudan ($6,000,000), and the Amazon Malaria Initiative ($3,500,000). (10) In FY 2015, USAID also provided funding for malaria activities in Burkina Faso ($12,000,0000), Burundi ($12,000,000), South Sudan ($6,000,000), and Latin America and the Caribbean Region ($3,500,000). (11) In FY 2016, USAID also provided funding for malaria activities in Burkina Faso ($14,000,0000), Burundi ($9,500,000), South Sudan ($6,000,000), and Latin America and the Caribbean Region ($5,000,000). (12) In FY 2017, USAID also provided funding for malaria activities in Burundi ($9,000,000) and Latin America and the Caribbean Region ($5,000,000). (13) In FY 2018, USAID also provided funding for malaria activities in Burundi ($9,000,000) and Latin America and the Caribbean Region ($5,000,000).

ANNEX 2:
SUMMARY OF CONTRIBUTIONS BY THE U.S. PRESIDENT'S MALARIA INITIATIVE (PMI)

NOTES FOR ANNEX 2

- The reporting timeframe for this PMI annual report is the 2018 Federal Fiscal Year (October 1, 2017 to September 30, 2018).
- PMI provides a comprehensive package of proven, cost-effective malaria interventions. The appropriateness of its interventions depends on many factors including demographics, national policies, climate, resistance patterns, and mosquito/parasite type, among others. PMI only procures and distributes commodities where they are recommended based on these factors, which is partly why some interventions are only conducted in certain countries and not others.
- PMI counts commodities (ITNs, RDTs, ACT treatments, SP treatments, SP+AQ treatments) as "procured" once the procurement service agent has released a purchase order or invoice for those commodities has been released by the procurement service agent during the reporting fiscal year.
- Depending on the country, PMI reports commodities as "distributed" once they have reached the central medical stores or once they have transitioned beyond the central medical stores to regional warehouses, health facilities, or other distribution points.
- Cumulative procurements are higher than cumulative distributions because of the lead time between the placement of an order and its arrival in country and to ensure adequate reserve stocks, among other factors.
- In FY 2018, some procurements are listed as zero because orders were placed just outside the fiscal year. Similarly, some distributions are listed as zero because distribution occurred just outside the fiscal year.
- PMI works closely with national malaria control programs and other donors to ensure commodity orders are highly coordinated and avoid duplications or gaps. This can lead PMI to procure additional or fewer commodities in certain countries based on evolving needs and other inputs.
- Cumulative figures have been adjusted to take into account the three-month overlap between PMI Years 5 and 6, when PMI switched from a calendar year (CY) to fiscal year (FY) for reporting.
- In Burma, the number of commodities distributed might exceed commodities procured because these include some that were procured under the Mekong row in previous years.

Artemisinin-based Combination Therapy (ACT)

ACTs are the best medicine available for treating the most-common form of malaria.

PMI Year 13 (FY 2018)

A2-1: ACT Treatments Procured and Distributed with PMI Funding

Country	ACTs Procured	ACTs Distributed
Angola	1,949,275	1,949,275
Benin	1,700,040	1,700,040
Burkina Faso	6,300,090	6,300,090
Burma	22,020	9,654
Cambodia	0	0
Cameroon	541,890	147,510
Côte d'Ivoire	2,339,700	0
DRC	15,652,335	7,293,594
Ethiopia	0	0
Ghana	2,203,070	301,140
Guinea	500,040	102,279
Kenya	7,388,280	4,112,100
Liberia	1,872,025	3,828,481
Madagascar	131,000	16,700
Malawi	4,602,120	3,852,930
Mali	2,564,850	1,742,926
Mekong	0	0
Mozambique	5,634,810	6,181,435
Niger	1,464,990	0
Nigeria	30,924,115	11,339,960
Rwanda	2,842,380	2,440,920
Senegal	390,000	587,114
Sierra Leone	0	0
Tanzania	7,236,090	586,809
Uganda	1,892,010	2,063,160
Zambia	5,375,160	5,375,160
Zimbabwe	1,149,240	526,200
FY 2018 Total	**104,675,530**	**60,457,477**

104,675,530
ACT Treatments Procured

60,457,477
ACT Treatments Distributed

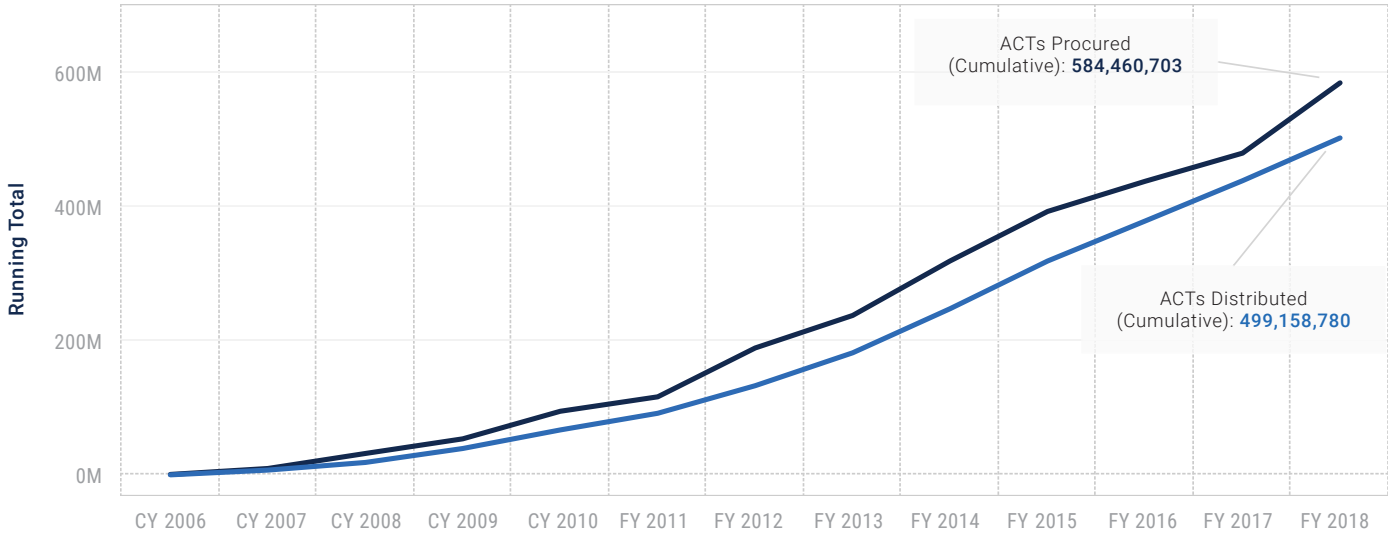
40,817
Health Workers Trained in Malaria Case Management

In FY 2018, PMI funded more than 65 therapeutic efficacy survey sites across sub-Saharan Africa and Southeast Asia to closely monitor resistance to ACTs.

A2-1 reports actual number of ACT treatments procured and distributed with PMI funding. In addition, PMI coordinates with other donors to distribute commodities purchased with non-PMI resources (see Partnerships).

All Years (Cumulative)

A2-2. Cumulative Total of ACT Treatments Procured and Distributed with PMI Funding



Rapid Diagnostic Tests (RDTs)

RDTs are a quick and easy way to confirm a suspected case of malaria. Because other diseases have similar symptoms to malaria, testing helps ensure patients get the right diagnosis and treatment.

PMI Year 13 (FY 2018)

A2-3: RDTs Procured and Distributed with PMI Funding

Country	RDTs Procured	RDTs Distributed
Angola	2,000,000	2,000,000
Benin	4,000,000	1,680,250
Burkina Faso	8,000,000	8,000,000
Burma	787,500	212,025
Cambodia	10,000	0
Cameroon	0	0
Côte d'Ivoire	2,865,000	0
DRC	9,000,400	7,488,344
Ethiopia	0	0
Ghana	4,000,000	7,442,200
Guinea	367,875	752,812
Kenya	7,500,000	0
Liberia	2,400,000	1,783,516
Madagascar	1,000,000	945,675
Malawi	10,500,000	6,258,400
Mali	6,000,700	3,766,900
Mekong	0	0
Mozambique	6,000,000	7,245,000
Niger	2,183,000	0
Nigeria	12,054,675	7,835,850
Rwanda	3,500,040	2,157,750
Senegal	3,640,000	1,562,700
Sierra Leone	0	0
Tanzania	6,894,500	6,894,500
Uganda	3,090,600	1,972,000
Zambia	13,244,400	13,244,400
Zimbabwe	255,850	762,675
FY 2018 Total	**109,294,540**	**82,009,747**

109,294,540

RDTs Procured

82,009,747

RDTs Distributed

40,248

Health Workers Trained in Malaria Diagnosis (RDTs and /or Microscopy)

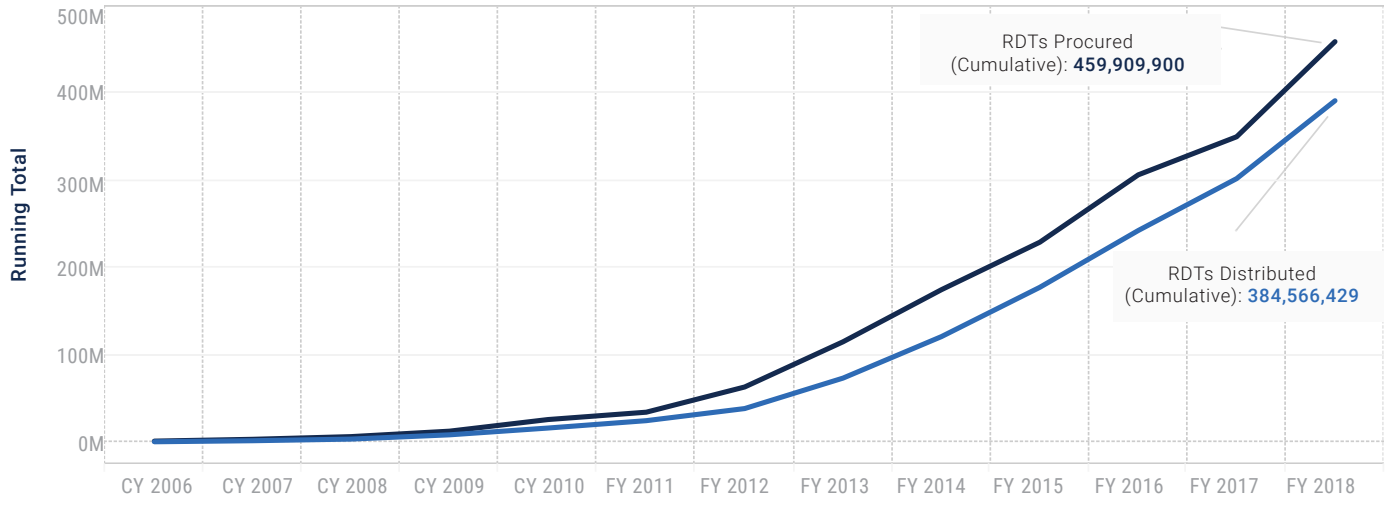
According to latest routine data, 9 of 14 PMI countries* reported at least 80% of malaria cases were confirmed by diagnostic test versus just 1 country in 2012. Higher confirmation rates indicate more people are diagnosed correctly and antimalarials are only given to those who need them.

A2-3 reports actual number of RDTs procured and distributed with PMI support. In addition, PMI coordinates with other donors to distribute commodities purchased with non-PMI resources (see Partnerships).

*PMI countries with available data from at least 2012 and excluding new PMI countries

All Years (Cumulative)

A2-4. Cumulative Total of RDTs Procured and Distributed with PMI Funding



Insecticide-Treated Nets (ITNs)

ITNs work two ways: physically blocking mosquitoes at night (when they are most likely to bite) and killing mosquitoes that land on them. Mass net distribution campaigns and continuous distribution via multiple channels help achieve and maintain ITN coverage.

PMI Year 13 (FY 2018)

A2-5: ITNs Procured and Distributed with PMI Support

Country	ITNs Procured	ITNs Distributed
Angola	1,500,000	0
Benin	0	800,000
Burkina Faso	50,000	50,000
Burma	652,000	135,541
Cambodia	522,677	28,983
Cameroon	255,749	0
Côte d'Ivoire	1,175,000	0
DRC	7,615,450	3,917,817
Ethiopia	8,400,000	10,195,481
Ghana	3,160,000	4,243,800
Guinea	1,085,000	105,146
Kenya	0	2,050,963
Liberia	390,000	302,650
Madagascar	4,662,000	6,000,000
Malawi	1,200,150	1,135,663
Mali	1,300,000	1,224,136
Mekong	122,500	0
Mozambique	1,199,900	1,302,796
Niger	990,600	0
Nigeria	14,586,050	10,339,702
Rwanda	0	0
Senegal	2,500,000	390,340
Sierra Leone	675,000	0
Tanzania	3,102,286	2,910,853
Uganda	1,999,613	1,643,411
Zambia	1,579,000	800,000
Zimbabwe	811,650	807,700
FY 2018 Total	**59,534,625**	**48,384,982**

59,534,625

ITNs Procured

48,384,982

ITNs Distributed

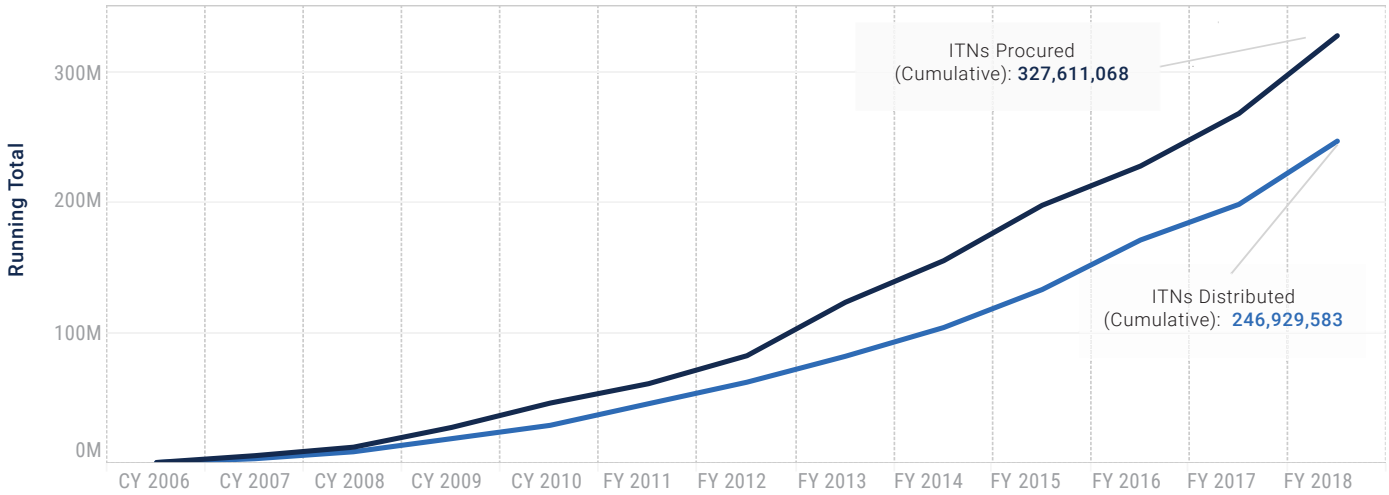
PMI worked closely with national malaria control programs and other donors such as the Global Fund to support net campaigns in 16 countries in FY 2018. PMI also supports continuous net distribution via health clinics, schools, and other channels.

PMI has distributed approximately **250** million nets since 2006, plus an additional 100 million nets purchased by other partners.

A2-5 reports actual number of ITNs procured and distributed with PMI fundng. In addition, PMI coordinates with other donors to distribute commodities purchased with non-PMI resources (see Partnerships).

All Years (Cumulative)

A2-6: Cumulative Total of ITNs Procured and Distributed with PMI Funding



Indoor Residual Spraying (IRS)

IRS involves spraying the inside of homes with long-lasting insecticides.
It is an effective way to kill mosquitoes and disrupt the transmission of malaria.

PMI Year 13 (FY 2018)

A2-7: Houses and Residents Protected by PMI–funded IRS

Country	Houses Sprayed	Residents Protected
Benin	400,997	1,321,758
Burkina Faso	266,765	766,374
Ethiopia	472,569	1,264,189
Ghana	298,701	836,376
Kenya	440,969	1,833,860
Madagascar	548,789	2,232,097
Mali	160,723	665,581
Mozambique	381,463	1,711,158
Rwanda	214,802	885,060
Tanzania	744,597	2,840,927
Uganda	950,939	3,504,041
Zambia	634,410	3,005,878
Zimbabwe	209,055	517,374
FY 2018 Total	**5,724,779**	**21,384,673**

A2-7 reports number of houses sprayed and residents protected with PMI funding. In addition, PMI provides technical assistance to IRS campaigns financed with non-PMI resources. PMI defines "spray personnel" as spray operators, supervisors, and ancillary personnel. This definition does not include the many people trained to conduct information and community mobilization programs surrounding IRS campaigns.

21,384,673
Residents Protected

5,724,779
Houses Sprayed

40,248
IRS Spray Personnel Trained

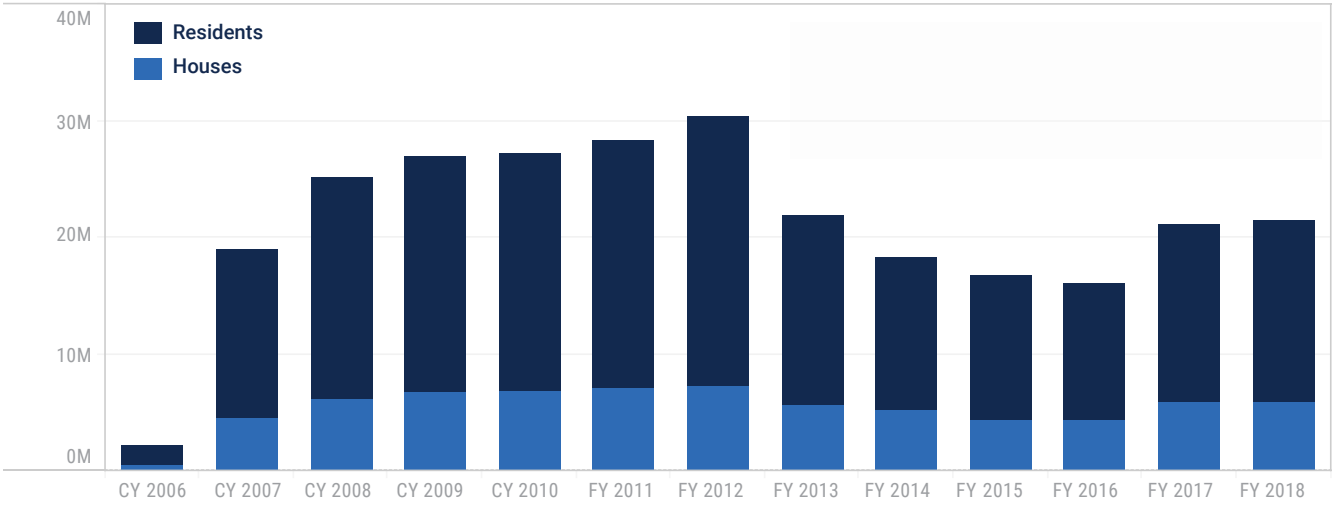
PMI started testing for resistance to the new insecticide clothianidin in FY 2018. Monitoring resistance is important for selecting the most effective insecticide and preventing resistance from spreading.

Research published in December 2017 found that PMI increased the proportion of women in supervisory IRS roles from 17% in 2012 to 46% in 2015.*

*https://www.ncbi.nlm.nih.gov/pubmed/29242251

All Years

A2-8: Houses Sprayed and Residents Protected by IRS Campaigns



NOTE: A cumulative count of the number of houses sprayed and residents protected is not provided because many areas have been sprayed on more than one occasion.

Sulfadoxine-Pyrimethamine (SP)

Malaria in pregnancy is dangerous for mothers and their babies. Giving women SP treatment at every antenatal care visit after the first trimester helps prevent malaria. Pregnant women should receive at least three intermittent preventive treatments (IPTp3).

PMI Year 13 (FY 2018)

A2-9: SP Treatments Procured and Distributed with PMI Funding

Country	SP Procured	SP Distributed
Angola	1,166,667	1,166,667
Benin	0	222,906
Burkina Faso	167,000	167,000
Côte d'Ivoire	874,200	0
DRC	6,556,900	2,500,667
Ghana	2,035,250	130,133
Guinea	1,231,667	14,592
Liberia	626,000	3,333
Madagascar	500,000	0
Malawi	2,400,000	1,891,333
Mali	666,667	962,000
Mozambique	0	1,433,333
Niger	1,365,000	0
Nigeria	0	5,477,270
Uganda	750,000	0
Zimbabwe	0	156,650
FY 2018 Total	**18,339,351**	**14,125,884**

18,339,351
SP Treatments Procured

14,125,884
SP Treatments Distributed

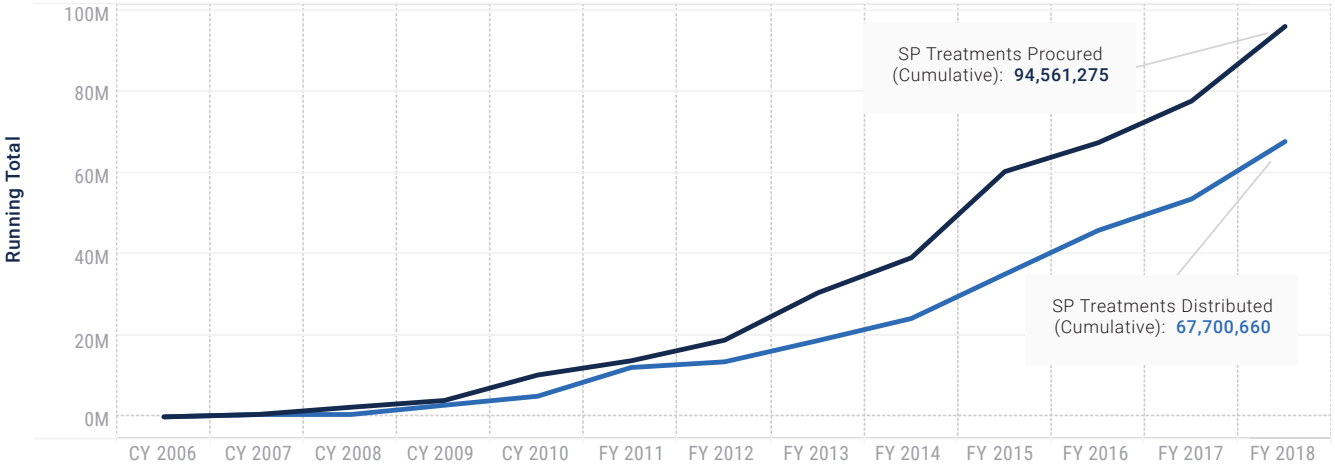
15,547
Health Workers Trained in the use of IPTp

A2-9 reports actual number of SP treatments procured and distributed with PMI funding. One treatment consists of three tablets. In addition, PMI coordinates with other donors to procure commodities purchased with non-PMI resources (see Partnerships).

PMI also funds provision and promotion of ITNs as well as prompt diagnosis and appropriate treatment of malaria and anemia as part of a multi-pronged approach to preventing malaria in pregnancy.

All Years (Cumulative)

A2-10: Cumulative Total of SP Treatments Procured and Distributed with PMI Funding



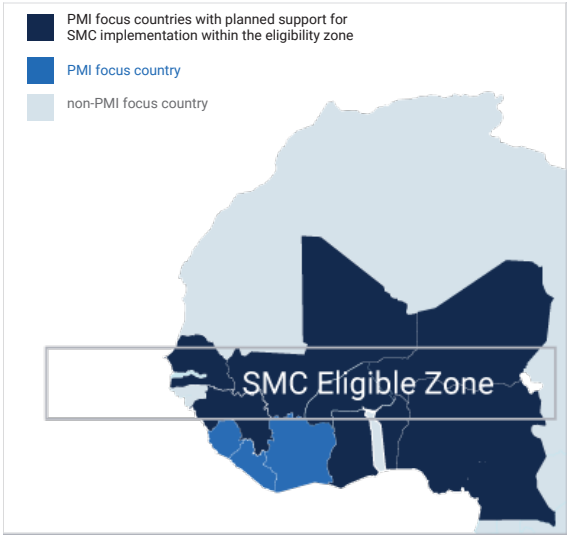
Sulfadoxine-Pyrimethamine Plus Amodiaquine (SP +AQ)

Seasonal malaria chemoprevention (SMC) is the monthly administration of antimalarial medication SP+AQ to children under five years of age that protects them from contracting malaria during peak transmission season.

PMI Year 13 (FY 2018)

A2-11: SP+AQ Doses for SMC Procured and Distributed with PMI Funding

Country	SP-AQ Procured	SP-AQ Distributed
Benin	509,400	0
Burkina Faso	2,400,000	2,400,000
Cameroon	8,073,025	6,972,247
Guinea	1,514,600	1,456,173
Mali	2,998,000	2,998,000
Nigeria	1,689,300	0
Senegal	3,544,400	0
FY 2018 Total	**20,728,725**	**13,826,420**



38,695

Health Workers Trained in SMC

PMI first piloted SMC in Mali and Senegal. In FY 2018, PMI adopted SMC as a core intervention in five more countries after research showed it dramatically reduced malaria cases and deaths in children.

A2-11 reports number of SP+AQ doses (co-blisters) for SMC procured and distributed with PMI Funding. Prior to FY 2015, PMI purchased SP and AQ separately for SMC.

20,728,725

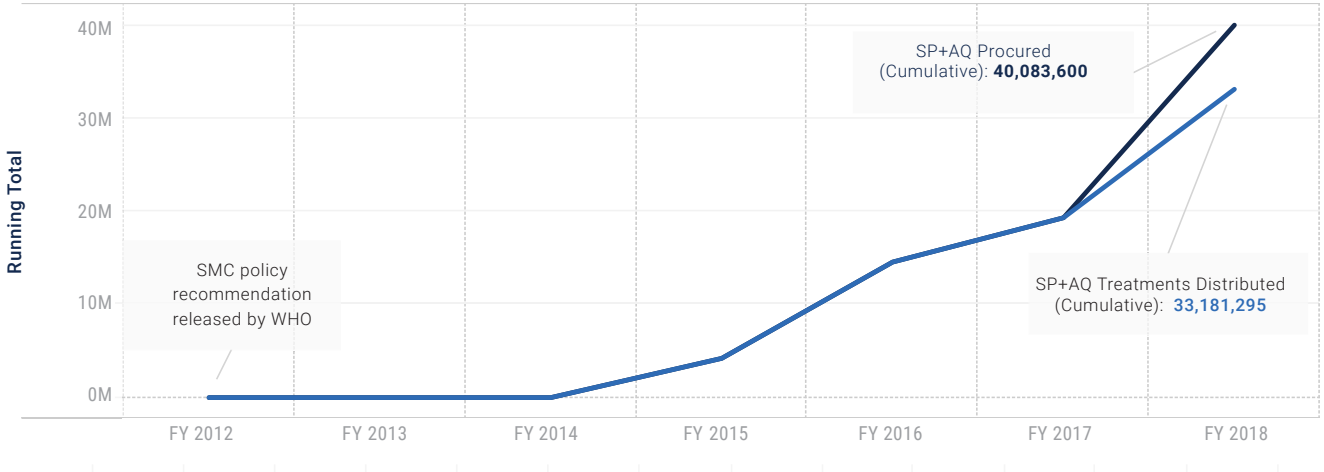
SP+AQ Doses Procured

13,826,420

SP+AQ Doses Distributed

All Years (Cumulative)

A2-12: Cumulative Total of SP+AQ Doses for SMC Procured and Distributed with PMI Funding



NOTES

- In FY 2013, PMI procured 2,308,800 SP tablets and 6,926,454 AQ tablets for Senegal.
- In FY 2014, PMI procured 1,132,800 SP tablets and 1,098,409 AQ tablets for Senegal.
- In FY 2015, in addition to SP+AQ co-blisters, PMI procured a separate 2,430,000 SP tablets, and 7,278,000 AQ tablets for Senegal.

Partnerships

Fighting malaria together makes us more effective and achieves greater impact than any of us could alone. PMI works with national malaria control programs in close partnership with other multilateral and bilateral donors, academic and research institutions, civil society, the private sector, faith-based organizations, and advocacy groups, among others.

PMI Year 13 (FY 2018)

A2-13: Commodities Procured by Other Donors and Distributed with PMI Support

Country	ITNs	ACTs	SP+AQ
Angola	1,466,000	0	0
Benin	61,711	0	0
Cambodia	293,783	43,353	0
Côte d'Ivoire	3,723,792	579,000	0
Guinea	0	653,601	0
Kenya	1,884,730	0	0
Liberia	239,500	2,037,660	0
Madagascar	745,000	6,000,000	0
Malawi	0	432,870	0
Mali	1,472,705	0	0
Mekong	115,775	0	0
Mozambique	0	928,360	0
Niger	0	0	1,359,166
Nigeria	50,000	186,060	0
Tanzania	3,102,286	0	0
Zimbabwe	0	400,360	0
Grand Total	**13,155,282**	**5,261,264**	**1,359,166**

13,155,282
ITNs Procured by Other Donors and Distributed by PMI

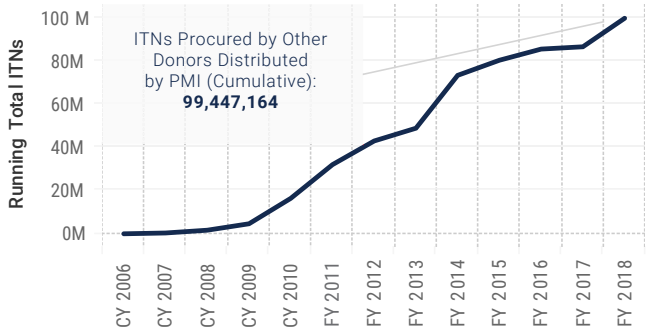
5,261,264
ACT Treatments Procured by Other Donors and Distributed by PMI

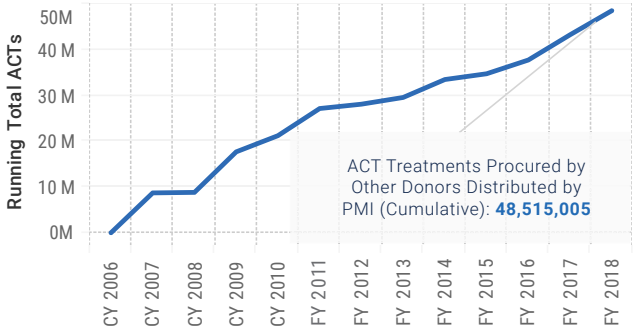
1,359,166
SP+AQ Treatments Procured by Other Donors and Distributed by PMI

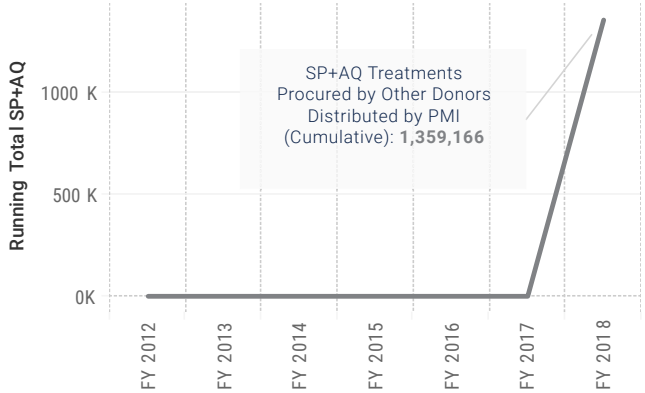
In addition to distributing commodities procured by other donors, PMI also procured 1,500,000 ITNs for Uganda with a donation from the U.K. Department for International Development.

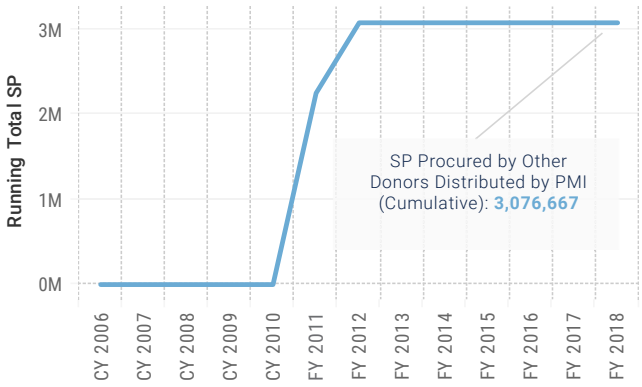
All Years (Cumulative)

A2-14: Cumulative Total of Commodities Procured by Other Donors and Distributed with PMI Funding









ANNEX 3:
MORTALITY RATES AND INTERVENTION COVERAGE IN FOCUS COUNTRIES OF THE U.S. PRESIDENT'S MALARIA INITIATIVE (PMI)

NOTES FOR ANNEX 3

- Country survey data mentioned in this Annex include a 'baseline' survey for each indicator, defined as the data point closest to the year in which PMI began operating in the country, as well as the 'most recent' comparable survey that is publicly available.
- Burkina Faso, Cameroon, Cote d'Ivoire, Niger, and Sierra Leone were not included because they became PMI focus countries in FY 2017 and do not yet have two comparable household surveys available.
- For more information on household surveys by country, please visit the Demographic and Health Services Program website and the United Nations Children's Fund Multiple Indicator Cluster Surveys website.

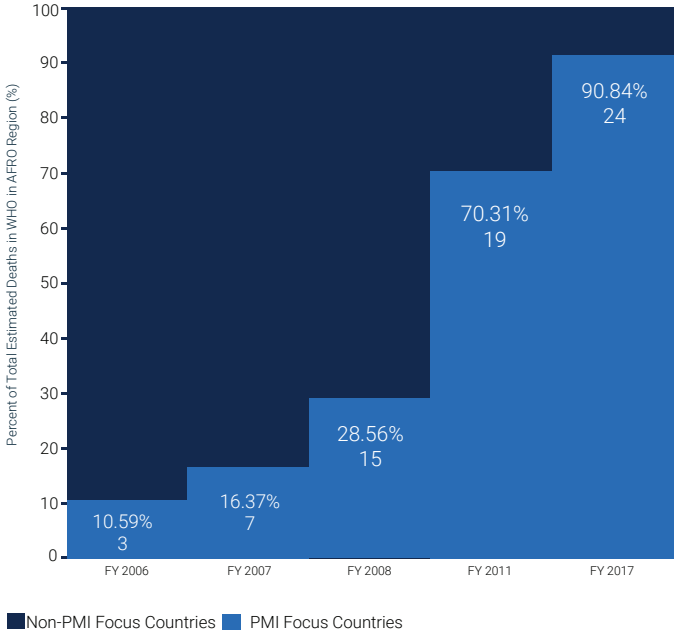
PMI has expanded into countries where the malaria burden is greatest to achieve the scale necessary for impact. In 2006, PMI first launched in three African countries, which together accounted for 10 percent of malaria deaths and 12 percent of malaria cases in sub-Saharan Africa. Today, PMI has grown to fund programs in 24 African countries that collectively represent more than 90 percent of malaria deaths in the region (Figure A3-1). As PMI has grown, it has benefited more people and contributed to saving more lives.

Within PMI countries, there are now more people to protect. Total populations in PMI countries have risen more than 40 percent since 2005 from approximately 580 million to 828 million people. While generous increases in appropriations from Congress have enabled PMI to expand its number of focus countries, PMI resources allocated to each country have remained relatively fixed over time (see Annex 1).

Fewer people die from malaria each year in PMI focus countries. When PMI began, more than 500,000 African people in 19 PMI focus countries* died from malaria each year; today, this number has been almost halved. Collective malaria efforts by PMI and the wider malaria community have helped prevent an estimated 2.8 million malaria deaths in 19 PMI focus countries in Africa since 2006—including more than 420,000 deaths in 2017 (Figure A3-2).

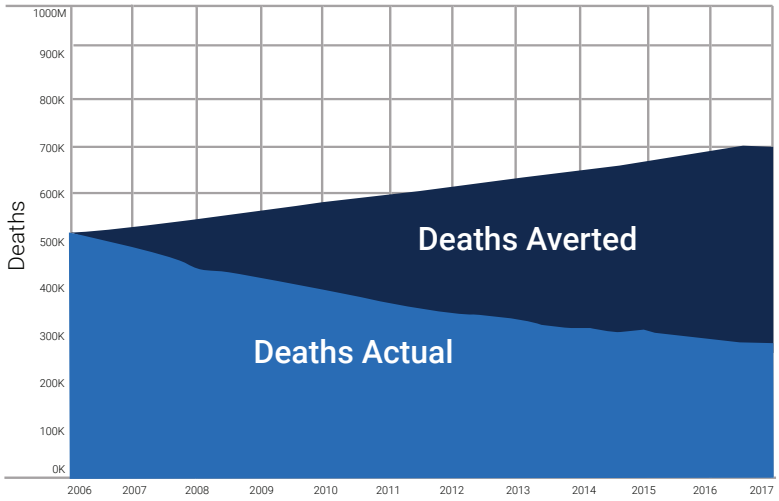
Children under five years of age are the most vulnerable group affected by malaria, as they accounted for almost two thirds of all malaria deaths worldwide in 2017. All 19 PMI focus countries in Africa have seen reductions in child death rates since 2006, by up to 67 percent (Figure A3-3).

A3-1. Estimated Malaria Deaths in the WHO AFRO Region Occurring in PMI Focus Countries



NOTE: PMI has expanded its support to now reach 24 African countries that collectively account for more than 90% of all malaria deaths in sub-Saharan Africa. Each bar shown represents a PMI expansion year. The large increase in 2011 is mostly driven by the addition of two countries: DRC and Nigeria.

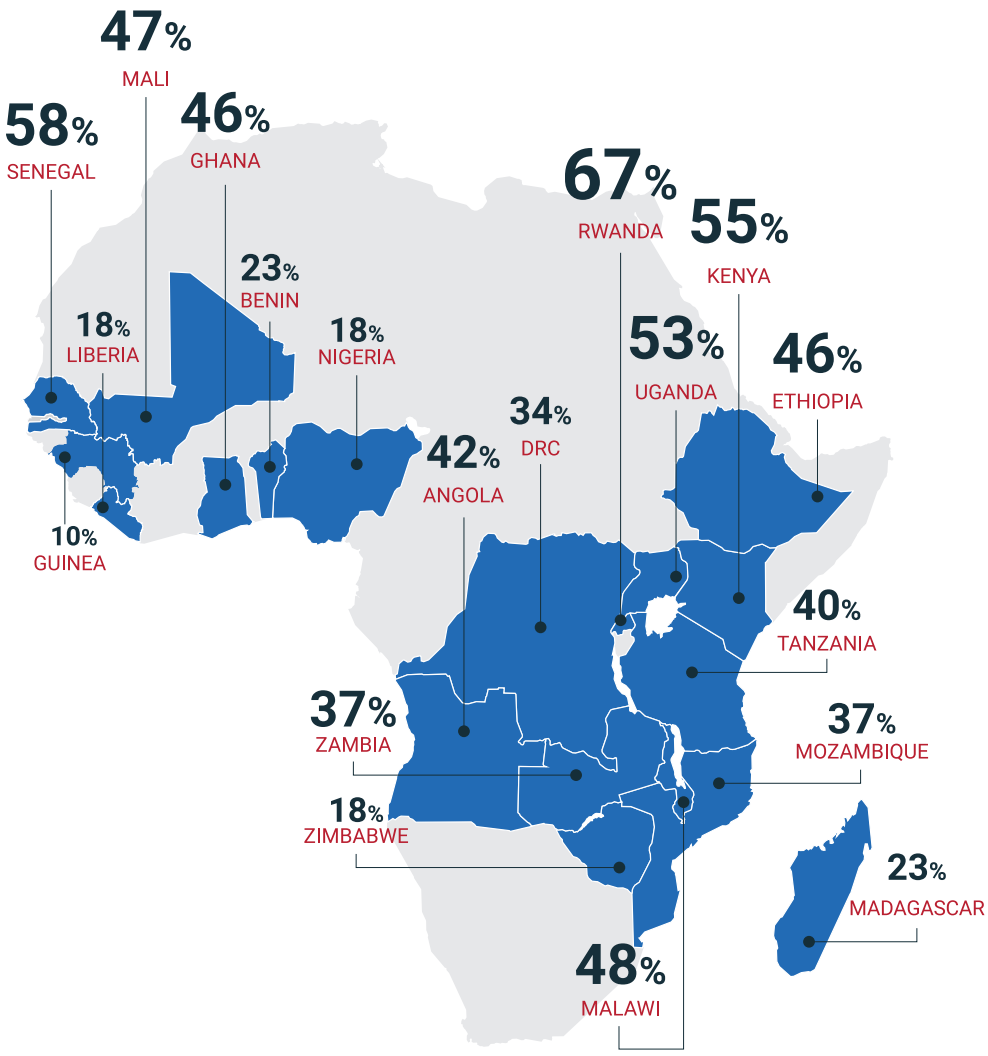
A3-2. Estimated Deaths Averted in PMI Focus Countries



NOTE: Estimated number of deaths averted since 2006 in 19 PMI focus countries* in Africa assuming fixed mortality rate since 2006 and accounting for population growth. Without malaria control, deaths would have increased by an estimated 37%. Instead, collective efforts have helped achieve a 45% reduction in malaria deaths.
SOURCE: Malaria burden estimates and estimation of "no malaria control" based on the World Malaria Report 2018.

*Excludes new PMI focus countries

A3-3. Reductions in All-Cause Death Rates in Children Under Age 5 in PMI Focus Countries



A3-4: All-Cause Death Rates in Children Under Age 5 in PMI Focus Countries, PMI Baseline and Most Recent Survey

Country	Survey	Deaths per 1,000 live births
Angola	MIS 2011	118
	DHS 2015-2016	68
Benin	DHS 2006	125
	DHS 2017	96
DRC	MICS 2010	158
	DHS 2013	104
Ethiopia	DHS 2005	123
	DHS 2016	67
Ghana	MICS 2006	111
	DHS 2014	60
Guinea	DHS 2012	123
	DHS 2018 KIR	111
Kenya	DHS 2003	115
	DHS 2014	52
Liberia	MIS 2009	114
	DHS 2013	94
Madagascar	DHS 2003-2004	94
	DHS 2008-2009	72
Malawi	MICS 2006	122
	DHS 2015-2016	63
Mali	DHS 2006	191
	DHS 2018 KIR	101
Mozambique	DHS 2003	153
	DHS 2011	97
Nigeria	DHS 2008	157
	DHS 2013	128
Rwanda	DHS 2005	152
	DHS 2014-2015	50
Senegal	DHS 2005	121
	cDHS 2017	56
Tanzania	DHS 2004-2005	112
	DHS 2015-2016	67
Uganda	DHS 2006	137
	DHS 2016	64
Zambia	DHS 2007	75
	DHS 2013-2014	119
Zimbabwe	DHS 2010-2011	84
	DHS 2015	69

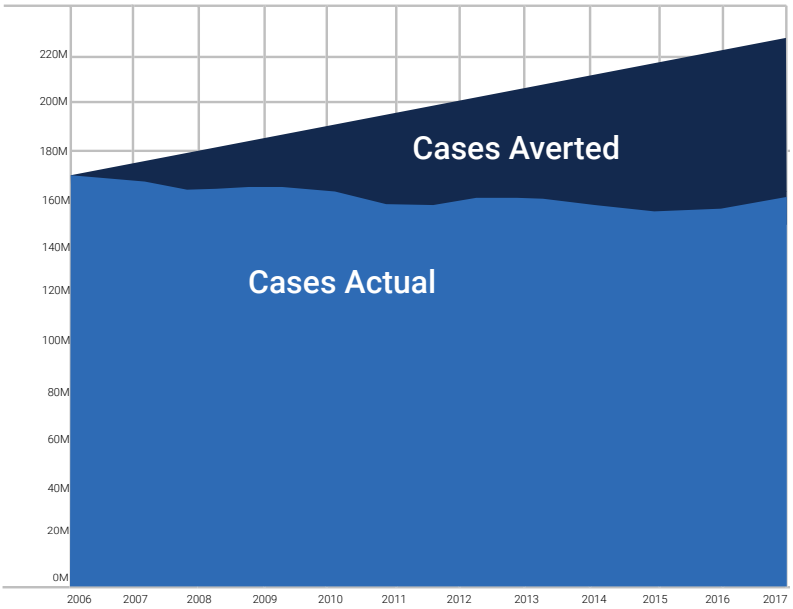
NOTE: All 19 PMI focus countries included in this figure have at least two data points from nationwide household surveys that measured all-cause mortality in children under the age of five. Burkina Faso, Cameroon, Côte d'Ivoire, Niger, and Sierra Leone were not included as they became PMI focus countries in FY 2017 and do not yet have two comparable household surveys available. See A3-4 for more detail including the source and year of the surveys.

Further, despite substantial population growth and relatively flat overall global funding, we are succeeding in our mission to control malaria cases. An estimated 450 million malaria cases have been averted in 19 PMI focus countries since 2006 (A3-5). In FY 2018, an estimated 70 million cases were averted.

History has shown how fragile malaria control efforts can be, and that malaria can quickly resurge if left unchecked. Sustaining the substantial gains in malaria control is a considerable feat. Achieving more comprehensive coverage of proven interventions within countries and layering a mix of interventions to generate more impact is key to further accelerating declines in malaria cases and deaths.

The added value PMI brings to partner countries and other donor investments through its unique technical and operational assistance is a critical component for expanding the coverage of interventions. For example, PMI leverages social and behavior change interventions to increase the likelihood beneficiaries sleep under insecticide-treated nets, attend antenatal care, and take preventive medicine, among other protective health behaviors. PMI also funds training of the health workforce, which helps ensure providers deliver recommended care, request the stock they need, and report malaria cases correctly to central systems for tracking. Through these cross-cutting efforts, PMI helps create more meaningful impact and enhance countries' efforts to prevent and control malaria. A3-6 to A3-12 highlight increasing coverage of two core PMI interventions: ownership and use of nets and use and rates of intermittent preventive treatment in pregnancy (IPTp).

A3-5. Estimated Cases Averted in PMI Focus Countries

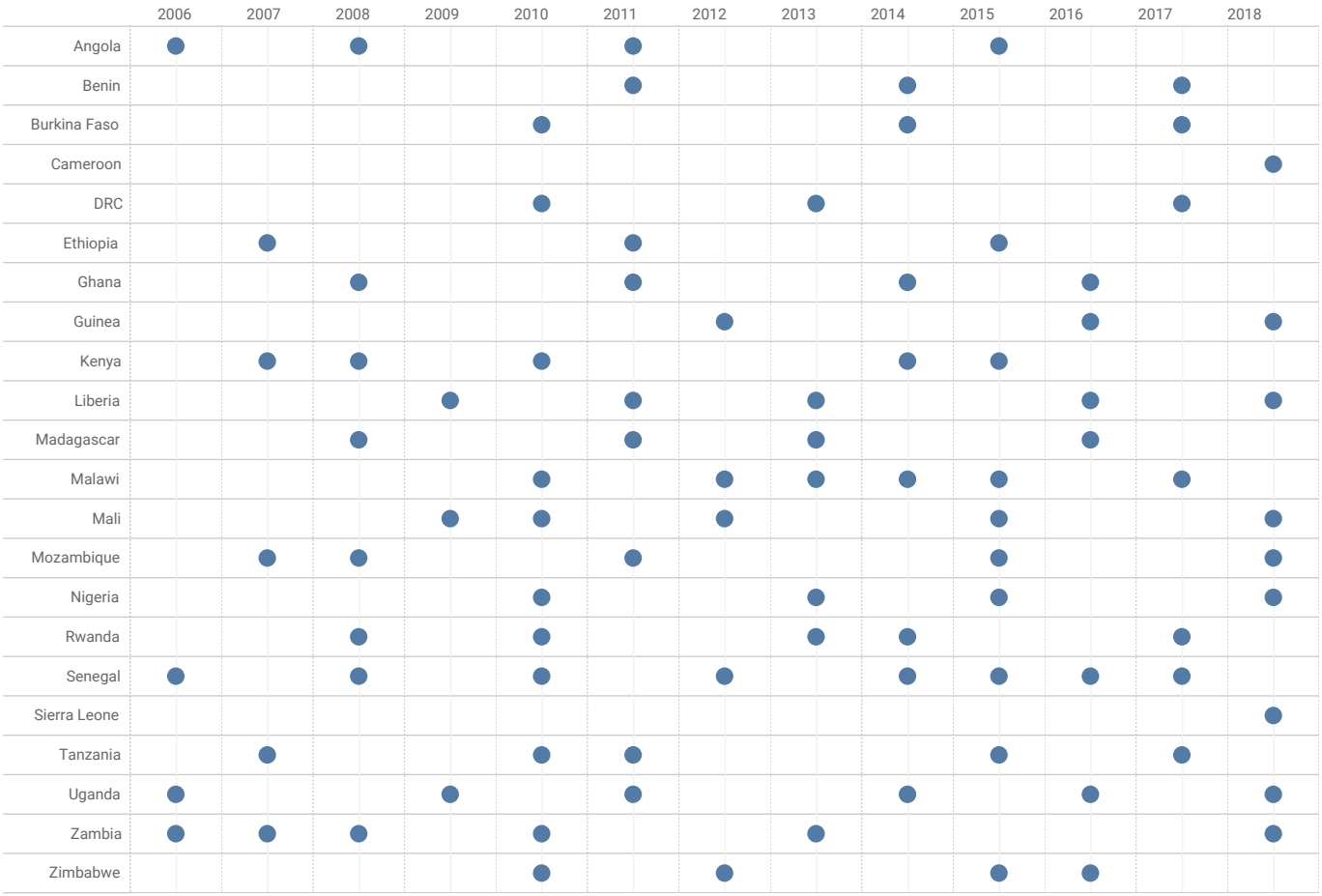


NOTE: Estimated number of cases averted since 2006 in 19 PMI focus countries* in Africa assuming fixed malaria incidence since 2006 and accounting for population growth.
SOURCE: Malaria burden estimates and estimation of "no malaria control" based on WHO World Malaria Report 2018.

*Excludes new PMI focus countries

A3-6: PMI-Funded Household Surveys

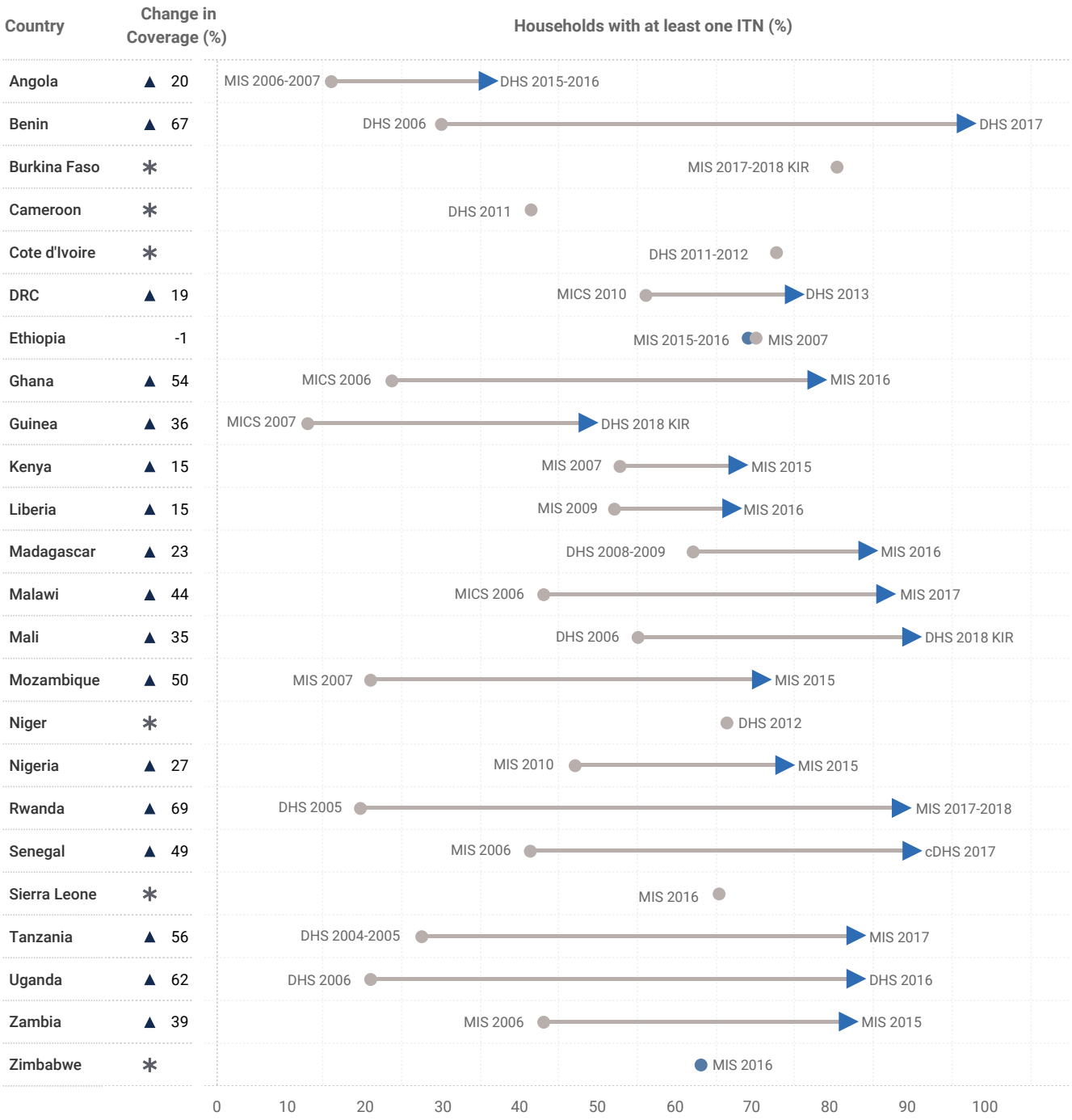
In conjunction with partners, PMI fully or partially funded a total of 93 Demographic Health Surveys (DHS), Malaria Indicator Surveys (MIS), Multiple Indicator Cluster Surveys (MICS), and Anemia & Parasitemia (A&P) surveys between 2006 and 2018.



NOTES

- Country survey data referenced in this Annex include a 'baseline' survey for each indicator, defined as the data point closest to the year in which PMI began operating in the focus country, as well as the 'most recent' comparable survey that is publicly available.
- Burkina Faso, Cameroon, Cote d'Ivoire, Niger, and Sierra Leone were not included because they became PMI focus countries in FY 2017 and do not yet have two comparable household surveys available.
- Due to differences in survey method, Zimbabwe does not have two comparable household surveys.
- For more information on household surveys by country, please visit the Demographic and Health Services Program website and the UNICEF Multiple Indicator Cluster Surveys website.

A3-7: Ownership of Insecticide-Treated Nets (ITNs) in PMI Focus Countries



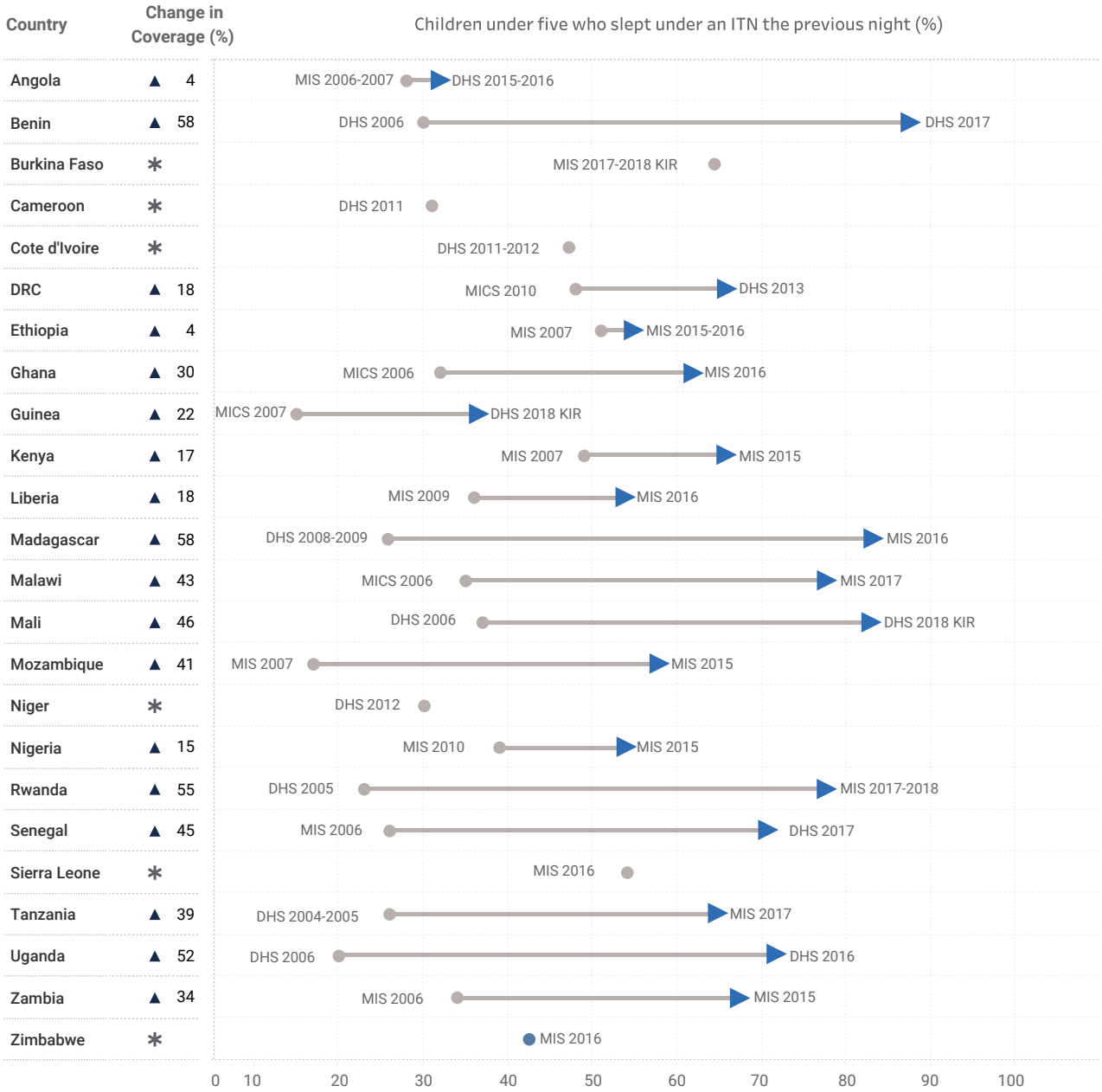
NOTES

- Data points included in this figure come from nationwide household surveys that measured ITN ownership, defined as the percentage of households that own at least one ITN.
- Survey data from Ethiopia reflects malarious areas only (areas higher than 2000 meters above sea level).
- The Zimbabwe MIS in 2016 was conducted in 45 districts at moderate and high risk of malaria, without disaggregation by type of intervention (ITNs, IRS, IPTp).

Legend

- Baseline Survey
- Most Recent Survey
- ▲ Positive Change (Baseline to Most Recent)
- ✱ Two comparable surveys not available

A3-8: Use of ITNs Among Children Under Age 5 in PMI Focus Countries



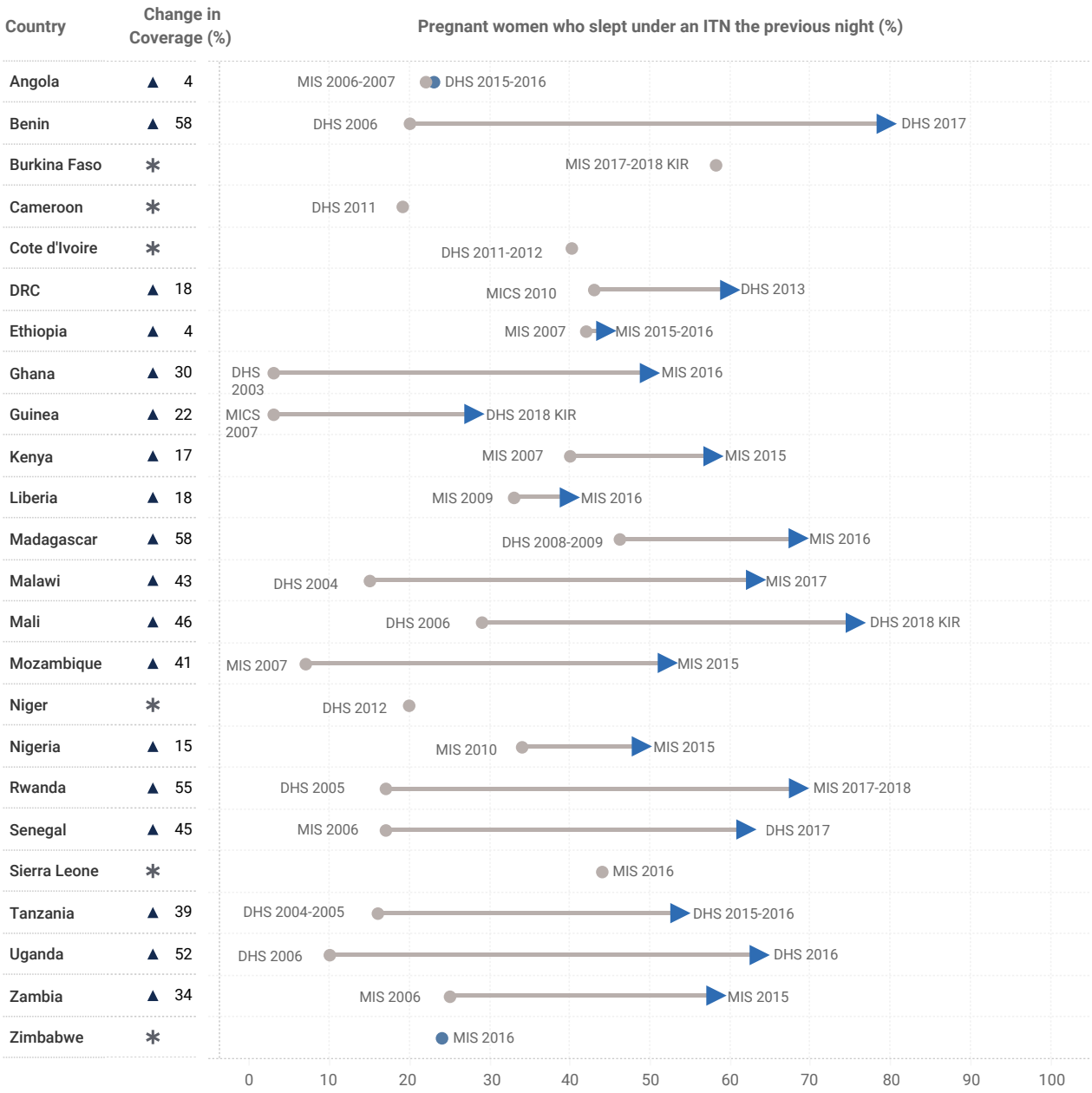
NOTES

- Data points included in this figure come from nationwide household surveys that measured ITN use among children under age five, defined as the percentage of children under age five who slept under an ITN the night before the survey.
- Survey data from Ethiopia reflect malarious areas only (areas higher than 2,000 meters above sea level).
- The Zimbabwe MIS in 2016 was conducted in 45 districts at moderate and high risk of malaria, without disaggregation by type of intervention (ITNs, IRS, IPTp).

Legend

- Baseline Survey
- Most Recent Survey
- ▲ Positive Change (Baseline to Most Recent)
- ✱ Two comparable surveys not available

A3-9: Use of ITNs Among Pregnant Women in PMI Focus Countries



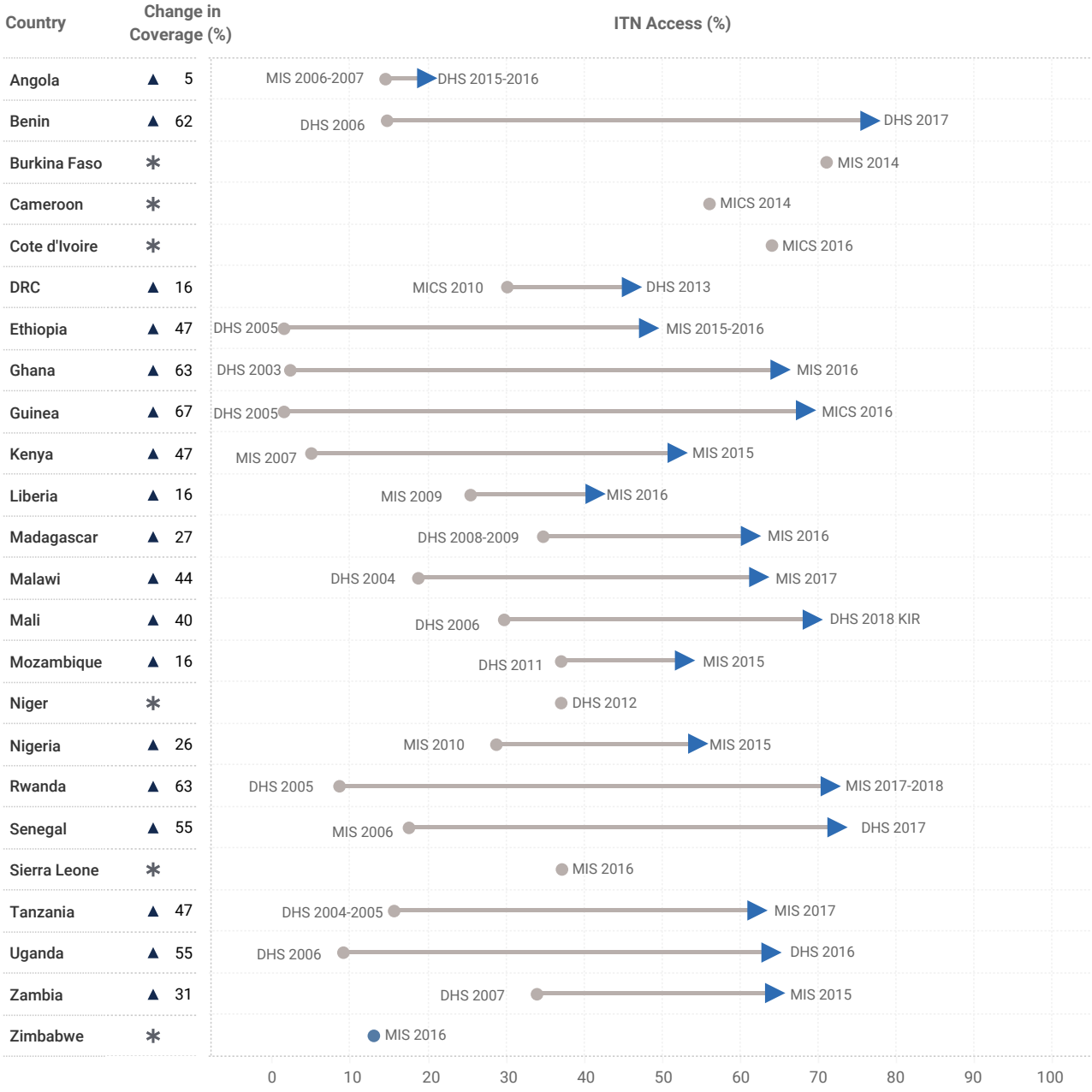
NOTES

- Data points included in this figure come from nationwide household surveys that measured the use of ITNs among pregnant women, defined as the percentage of pregnant women who slept under an ITN the night before the survey.
- Survey data from Ethiopia reflect malarious areas only (areas higher than 2,000 meters above sea level).
- The Zimbabwe MIS in 2016 was conducted in 45 districts at moderate and high risk of malaria, without disaggregation by type of intervention (ITNs, IRS, IPTp).

Legend

- Baseline Survey
- Most Recent Survey
- ▲ Positive Change (Baseline to Most Recent)
- ✱ Two comparable surveys not available

A3-10: Access to ITNs in PMI Focus Countries



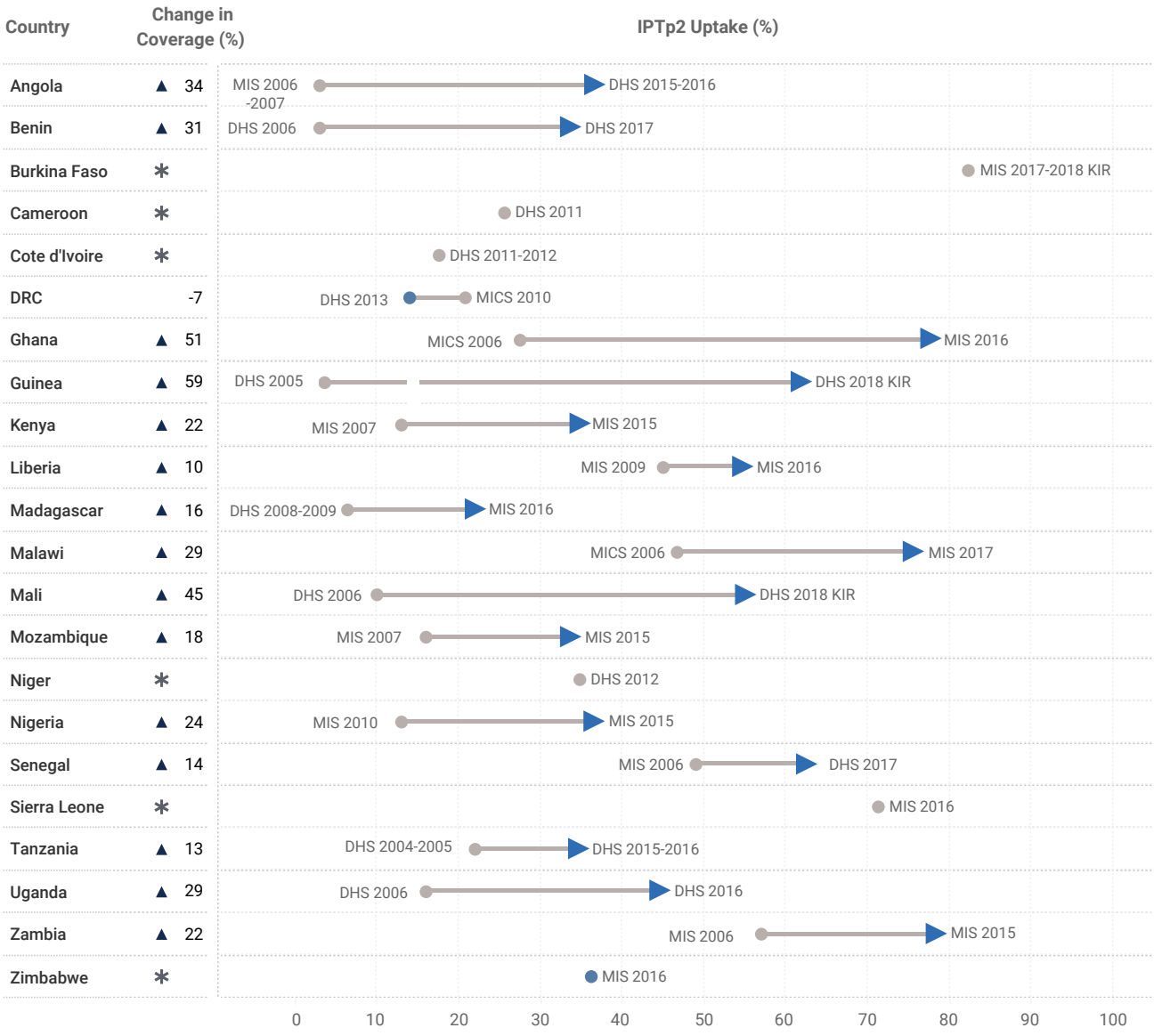
NOTES

- Data points included in this figure come from nationwide household surveys that measured ITN access, defined as the percentage of the de facto household population who could sleep under an ITN if up to two individuals in the household used each ITN.
- Survey data from Ethiopia reflect malarious areas only (areas higher than 2,000 meters above sea level).
- The Zimbabwe MIS in 2016 was conducted in 45 districts at moderate and high risk of malaria, without disaggregation by type of intervention (ITNs, IRS, IPTp).

Legend

- Baseline Survey
- Most Recent Survey
- ▲ Positive Change (Baseline to Most Recent)
- ✱ Two comparable surveys not available

A3-11: Rates of Two-Dose Intermittent Preventative Treatment in Pregnancy (IPTp2) in PMI Focus Countries



NOTES

- Data points included in this figure come from nationwide household surveys that measured coverage of IPTp2 for pregnant women, defined as the percentage of surveyed women who received at least two doses of Sulfadoxine-Pyrimethamine (SP) during their last pregnancy in the past two years.
- IPTp is not part of the national policy in Ethiopia and Rwanda.
- Kenya, Madagascar, and Zimbabwe implement IPTp sub-nationally because of heterogeneous malaria transmission with areas of low risk. The coverage estimates included here are national and therefore likely underestimate the operational coverage in the areas targeted for this intervention.
- The IPTp2 rate from the Guinea DHS in 2005 was calculated for the five years preceding the survey.
- The Zimbabwe MIS in 2016 was conducted in 45 districts at moderate and high risk of malaria, without disaggregation by type of intervention (ITNs, IRS, IPTp).

Legend

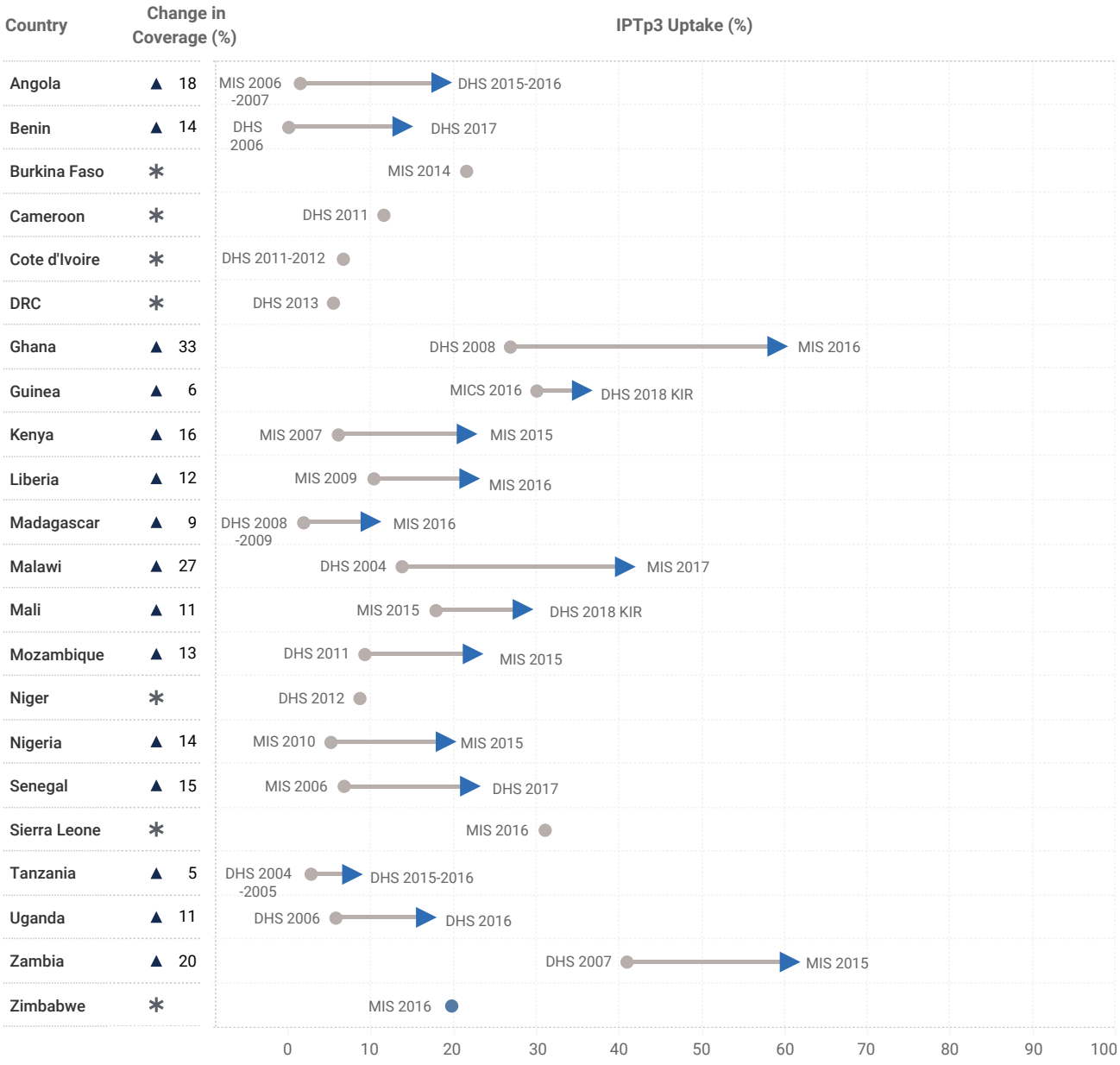
Baseline Survey

Most Recent Survey

▲ Positive Change (Baseline to Most Recent)

✱ Two comparable surveys not available

A3-12: Rates of Three-Dose Intermittent Preventative Treatment in Pregnancy (IPTp3) in PMI Focus Countries



NOTES

- Data points included in this figure come from nationwide household surveys that measured IPTp3 coverage for pregnant women, defined as the percentage of surveyed women who received at least three doses of SP during their last pregnancy in the past two years.
- IPTp is not part of the national policy in Ethiopia and Rwanda.
- Kenya, Madagascar, and Zimbabwe implement IPTp is implemented sub-nationally because of heterogeneous malaria transmission with areas of low risk. The coverage estimates included here are national and therefore likely underestimate the operational coverage in the areas targeted for this intervention.
- The Zimbabwe MIS in 2016 was conducted in 45 districts at moderate and high risk of malaria, without disaggregation by type of intervention (ITNs, IRS, IPTp).

Legend

- Baseline Survey
- Most Recent Survey
- ▲ Positive Change (Baseline to Most Recent)
- ✱ Two comparable surveys not available

PHOTO CREDITS

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