

END MALARIA FASTER

U.S. PRESIDENT'S MALARIA INITIATIVE
STRATEGY 2021–2026



PMI

U.S. PRESIDENT'S
MALARIA INITIATIVE

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Twins Dorcas and Deborah Bendak, 7, under a mosquito net at their home in Tanzania. They both received new mosquito nets provided by PMI and partners at their school. Photo by Riccardo Gangale, VectorWorks, 2016

ABOUT THE U.S. PRESIDENT'S MALARIA INITIATIVE (PMI)

The U.S. President's Malaria Initiative (PMI) works to end malaria, one of the world's deadliest pandemics.

PMI works to end malaria, one of the world's deadliest pandemics. Malaria causes hundreds of millions of infections and claims hundreds of thousands of lives every year. PMI works with partners to change that. With 24 partner countries in Sub-Saharan Africa and three programs across the Greater Mekong in Southeast Asia, PMI works to deliver lifesaving interventions—such as insecticide-treated nets and sprays that kill malaria-carrying mosquitoes, and tests and medicines that diagnose and treat malaria. PMI and its partners invest in health workers, laboratories, supply chains, surveillance and other health systems pillars to control and eliminate malaria, save lives, and strengthen global health security. Thanks to the generous support of the American people, PMI has invested billions of dollars since its creation in 2005 and helped lead global efforts to save more than 7.6 million lives and prevent more than 1.5 billion malaria infections as of 2020.

PMI is a multi-agency initiative, led by the U.S. Agency for International Development (USAID) and co-implemented with the U.S. Department of Health and Human Services' Centers for Disease Control and Prevention (CDC). PMI has strong support from and collaborates closely with the White House and National Security Council, Department of Defense, National Institutes of Health, Peace Corps, and other U.S. government entities. PMI works closely with national malaria programs and supports partner governments' national malaria strategies. PMI also engages with the Global Fund to Fight AIDS, Tuberculosis, and Malaria; local research institutions and universities; nongovernmental organizations; faith and community groups; and the private sector to strengthen local leadership and wide-ranging investment in fighting malaria.



A mother installs a new mosquito net she received from USAID's Afya Ugavi program, which has distributed over 1 million mosquito nets donated by PMI. Over the last 15 years, U.S. funding has supported the distribution of over 20 million nets in Kenya. Photo by USAID, 2021



EXECUTIVE SUMMARY

Dramatic progress over the past two decades has prevented 1.5 billion malaria infections and saved 7.6 million lives.

Dramatic progress over the past two decades has prevented 1.5 billion malaria infections and saved 7.6 million lives. PMI has been a key driver of this progress, providing approximately \$8 billion in country support to expand access to malaria-fighting tools, support frontline and community health workers, and strengthen health systems across Sub-Saharan Africa and Southeast Asia.

But this historic progress is in danger. The World Health Organization (WHO) estimates there were 229 million malaria infections and 409,000 deaths worldwide in 2019—figures that have stopped declining since 2015. Efforts to achieve ambitious global targets to reduce malaria dramatically have fallen short. In the past decade, global funding for malaria has plateaued despite increasing U.S. government investments, and the resource gap grows each year. The unmet need in global malaria funding has slowed progress and threatens to reverse gains.

New threats are compounding these problems. The devastating impacts of COVID-19 on communities, the health workforce, supply chains, and health systems have set malaria progress back by years. Increasing drug and insecticide resistance, unpredictable effects of climate change, and growing conflict and violence in malaria-affected communities all pose major challenges to progress. A reversal in progress against malaria will have dire consequences, resulting in hundreds of thousands of additional deaths, increasing the risk of outbreaks and drug resistance, undermining economies, increasing poverty, and weakening global health security.

Yet, unprecedented opportunities offer hope. The world's first malaria vaccine paired with existing proven interventions could dramatically reduce cases and severe disease and ultimately reduce malaria deaths. Strategic investments in community health systems and surveillance can fight malaria, extend care to the unreached, and strengthen pandemic preparedness and response. Innovations to combat insecticide and drug resistance and improvements in data and supply systems mean that optimal interventions can be deployed where they

are needed most. Strong global partnerships can ensure a healthy, resilient market for lifesaving prevention and treatment products.

We cannot afford to lose the hard-won gains against malaria. PMI's 2021-2026 Strategy, *End Malaria Faster*, aims to address these threats and take advantage of opportunities to end malaria within our lifetime. The U.S. government's goal is to prevent malaria cases, reduce malaria deaths and illness, and accelerate toward elimination in PMI partner countries. Building on the progress to date, PMI will work with national malaria programs in countries that account for 80 percent of the global malaria burden to drive toward the global goals of saving more than four million lives and averting over one billion cases by 2025. PMI's three strategic objectives are to:

1. Reduce malaria mortality by 33 percent from 2015 levels in high-burden PMI partner countries, achieving a greater than 80 percent reduction from 2000.
2. Reduce malaria morbidity by 40 percent from 2015 levels in PMI partner countries with high and moderate malaria burden.
3. Bring at least ten PMI partner countries toward national or subnational elimination and assist at least one country in the Greater Mekong Subregion to eliminate malaria.

To achieve these objectives, PMI will take a strategic approach to:

Reach the unreached: Achieve, sustain, and tailor deployment and uptake of high-quality, proven interventions with a focus on hard-to-reach populations.

Strengthen community health systems: Transform and extend community and frontline health systems to end malaria.

Keep malaria services resilient: Adapt malaria services to increase resilience against shocks, including COVID-19 and emerging biological threats, conflict, and climate change.

Invest locally: Partner with countries and communities to lead, implement, and fund malaria programs.

Innovate and lead: Leverage new tools, optimize existing tools, and shape global priorities to end malaria faster. ●

STRATEGIC FRAMEWORK



VISION

A world free of malaria within our generation



GOALS

Prevent malaria cases, reduce malaria deaths and illness, and eliminate malaria in PMI partner countries



OBJECTIVES 2021–2026

1

Reduce malaria mortality by 33 percent from 2015 levels in high-burden PMI partner countries, achieving a greater than 80 percent reduction from 2000

2

Reduce malaria morbidity by 40 percent from 2015 levels in PMI partner countries with high and moderate malaria burden

3

Bring at least ten PMI partner countries toward national or subnational elimination and assist at least one country in the Greater Mekong Subregion to eliminate malaria



FOCUS AREAS

1

REACH THE UNREACHED

Achieve, sustain, and tailor deployment and uptake of high-quality, proven interventions with a focus on hard-to-reach populations

2

STRENGTHEN COMMUNITY HEALTH SYSTEMS

Transform and extend community and frontline health systems to end malaria

3

KEEP MALARIA SERVICES RESILIENT

Adapt malaria services to increase resilience against shocks, including COVID-19 and emerging biological threats, conflict, and climate change

4

INVEST LOCALLY

Partner with countries and communities to lead, implement, and fund malaria programs

5

INNOVATE AND LEAD

Leverage new tools, optimize existing tools, and shape global priorities to end malaria faster

BACKGROUND

TARGETED STRATEGIC SHIFTS



- Strategically prioritize countries with the highest burden of malaria and deaths
- A primary focus on reaching people currently unreached by malaria services
- Less “one size fits all” implementation, more tailoring of interventions within countries based on data
- An emphasis on strengthening frontline and community health systems, including the primary health workforce
- Efforts to keep malaria services resilient in the face of conflict, COVID-19, and climate change, including making more strategic contributions to pandemic preparedness and response
- An increased commitment to partner with local stakeholders to lead and promote sustainability

Between 2000 and 2020, the world made historic gains against malaria—but this is now under threat

In the first two decades of the 21st century the world made historic progress in the fight to end malaria, preventing more than 1.5 billion malaria infections and saving more than 7.6 million lives. PMI was a key driver of this progress, providing approximately \$8 billion in country support to expand access to malaria-fighting tools, support frontline and community health workers, and strengthen health systems across Sub-Saharan Africa and Southeast Asia. PMI partner countries have achieved and sustained a 29 percent decline in malaria incidence and a 60 percent decline in malaria mortality since PMI began in 2005.¹ Child mortality, of which malaria has been a leading driver, in PMI partner countries across Africa has fallen 44 percent.

But this historic progress is under threat. A child still dies of malaria every two minutes, and the WHO estimates there were 229 million malaria infections and 409,000 deaths worldwide in 2019. Sub-Saharan Africa shoulders more than 90 percent of this burden. Efforts to achieve ambitious global targets to end malaria have fallen short. The U.S. government is the largest funder in the global malaria fight. Despite increased U.S. government contributions, global funding for malaria in the past decade has plateaued at

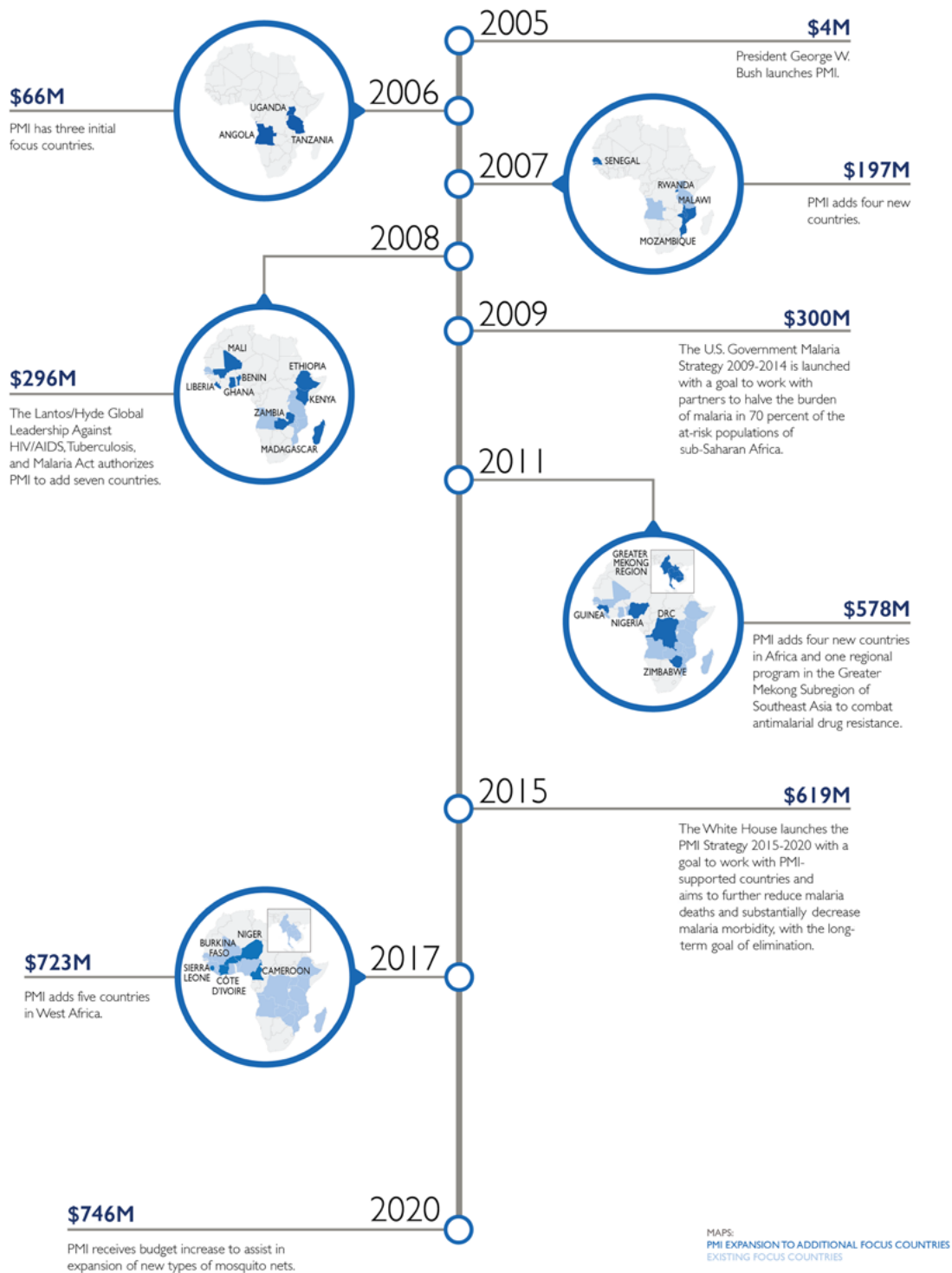
approximately \$3 billion per year. In 2020 the estimated global annual need was \$6.8 billion.² As populations have grown, global malaria programs have struggled to reach more people with fewer resources, slowing progress. Within countries, inequities in access to lifesaving malaria prevention and treatment leave children and families in rural, poor communities more vulnerable. Further, new threats, including COVID-19, rising conflict, and climate change, endanger overall gains.

Launched in 2005, PMI renewed hope for a malaria-free world

When President George W. Bush announced PMI in 2005, stating that “no child should die from a mosquito bite,” the United States renewed hope for a malaria-free world. With bipartisan support, PMI expanded its proven malaria-fighting tools and expert technical assistance to benefit more than 700 million people across Sub-Saharan Africa and Southeast Asia. Over the past 15 years, PMI helped shape how the world fights malaria, while strengthening health systems and protecting global health security with sustainable investments in health workers, supply chains, health infrastructure, and disease surveillance. ●

KEY MILESTONES

Key milestones and expansion of the U.S. President's Malaria Initiative, 2005–2020

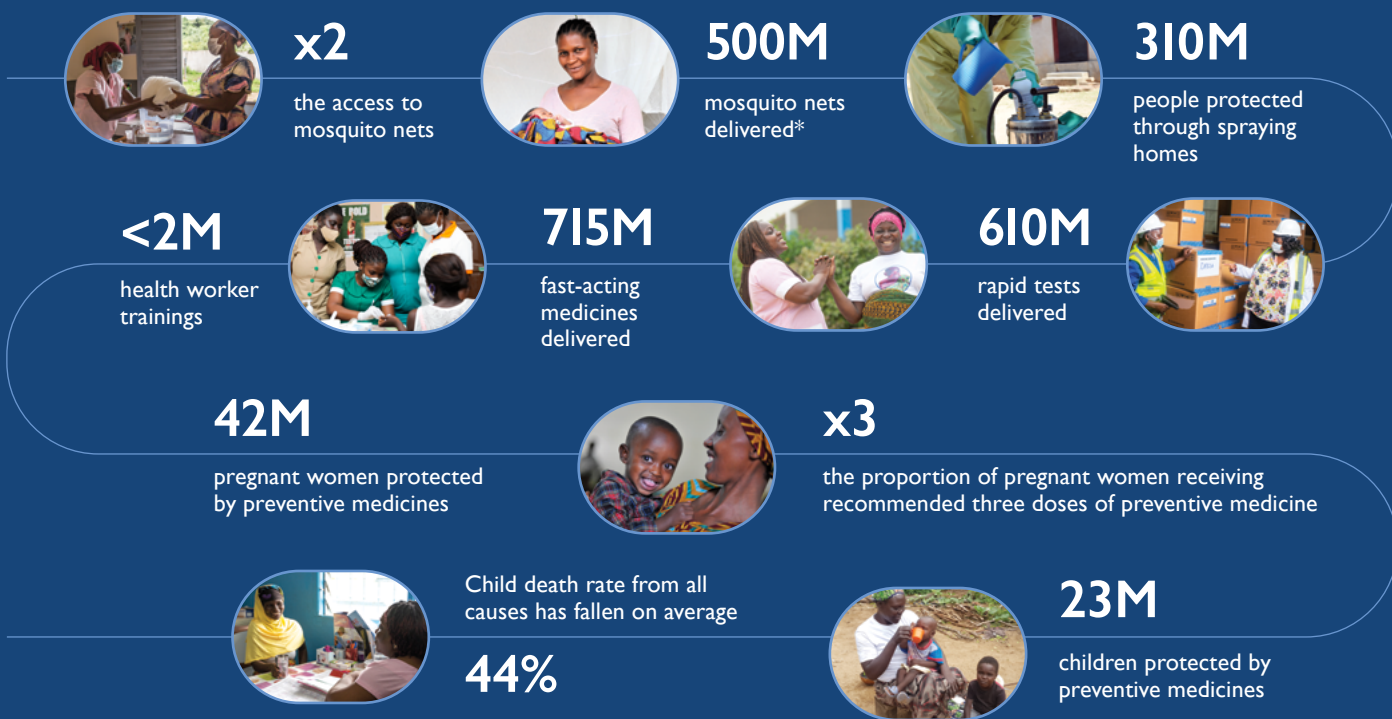


Progress on PMI's 2015–2020 strategic objectives has been significant

Since 2006, PMI partner countries have driven a 29 percent decline in malaria case rates and a 60 percent decline in malaria death rates.³ Dramatic and sustained scale-up of malaria prevention and treatment drove these successes, alongside investments to drive demand and

strengthen health systems, health workforces, supply chains, and surveillance capabilities. Thanks to the leadership of national malaria programs alongside the contributions of PMI and other partners, more people are now protected by mosquito nets, insecticides, and preventive medicines, while those falling ill have access to rapid testing and high-quality care from trained health workers.

Since 2005, the dramatic scale-up of lifesaving interventions in PMI partner countries has resulted in an average 44 percent reduction in child deaths from all causes.



*375 million with PMI funds and 130 million on behalf of other donors

But progress has been uneven

Countries like Burma, Cambodia, Senegal, and Zimbabwe continue to reduce malaria cases and transmission, accelerating toward nationwide or subnational elimination. Countries such as Niger and Sierra Leone, newer to PMI, have achieved reductions but still face a high burden of disease and death. Others, including the Democratic Republic of Congo, Nigeria, and Uganda, have seen persistent or increasing malaria case rates.

Uneven progress has been exacerbated by unmet funding assumptions. PMI's 2015-2020 strategy assumed \$1 billion of annual appropriated funding, but as of Fiscal Year (FY) 2020 the annual appropriated funding level was set at \$770M. The funding gap adversely affected achievement of 2015-2020 objectives. Other factors include continued gaps in coverage of key interventions, spread of insecticide resistance that has rendered mosquito nets less effective, and shocks such as COVID-19, conflict, instability, and climate events that have disrupted malaria programs. ●

PROGRESS TOWARD 2015–2020 OBJECTIVES

OBJECTIVE 1:

Reduce malaria mortality by 33 percent from 2015 levels in PMI partner countries,ⁱ achieving a greater than 80 percent reduction since 2000

Objective 1 was partially met. All PMI partner countries achieved reductions in deaths between 2015 and 2019.ⁱⁱ All-cause child deaths fell by an average of 13 percent, but no country reached the targeted 33 percent reduction. Malaria-specific deaths fell by an average of 18 percent, and four countriesⁱⁱⁱ surpassed the 33 percent target.

Since 2000, PMI partner countries have reduced all-cause child deaths by an average of 56 percent and malaria-specific deaths by 67 percent. One country exceeded the 80 percent targeted reduction by one country for all-cause child deaths, and five countries exceeded it for malaria-specific deaths.

OBJECTIVE 2:

Reduce malaria morbidity in PMI partner countries by 40 percent from 2015 levels

Objective 2 was partially met. Between 2015 and 2019, six PMI partner countries^{iv} reduced malaria prevalence by more than 40 percent. Seven countries reduced malaria prevalence by 20 to 40 percent. However, malaria prevalence rose in 12 countries, including seven with increases greater than 10 percent.



Community members in Garambe, Guinea, learn how to protect their children from malaria from their local community health workers. Photo by USAID StopPalu Project

OBJECTIVE 3:

Assist at least five PMI partner countries to meet the WHO criteria for national or subnational pre-elimination

Objective 3 was met and exceeded. Three countries^v achieved and maintained pre-elimination^{vi} status and four countries^{vii} achieved subnational pre-elimination in targeted districts.

- i. PMI uses multiple measures of mortality to understand progress. The first is all-cause child mortality, defined as the number of deaths in children under five per 1,000 live births and calculated using modeled estimates from UNICEF. It is an indirect measure of malaria-specific mortality in countries with high malaria burden. The second is the malaria-specific mortality rate as estimated by WHO (defined as the number of malaria-specific deaths per 100,000 population for all ages).
- ii. Global data through 2019 were available at the time of the writing of this strategy.

- iii. Burma, Cambodia, Ethiopia, Thailand
- iv. Burkina Faso, Burma, Cambodia, Mali, Niger, Thailand
- v. Burma, Cambodia, Thailand
- vi. Pre-elimination status was defined as achieving and maintaining an annual malaria-test positivity rate of less than 5 percent.
- vii. Ethiopia, Senegal, Zanzibar (Tanzania), Zimbabwe



(Above) Midwife Franca Fianuke at a hospital in Akosombo, Ghana, following proper protocol to protect herself and her patients from COVID-19 transmission. Photo by Emmanuel Attramah, PMI Impact Malaria, 2020

(Below) Women in Kenya transporting water. USAID partners with countries across sub-Saharan Africa to reduce vulnerabilities to climate change and make economies and livelihoods more resilient. Photo by Boniface Musembi, 2018



OUR PROGRESS IS UNDER THREAT

The world is at a turning point in the fight to end malaria. Our progress is under threat, yet new opportunities inspire hope that malaria can be defeated.

Coverage is insufficient, while costs are increasing

Malaria services in PMI partner countries have improved vastly in recent decades. Yet major gaps remain, particularly for rural and remote populations. More than 25 percent of households threatened by malaria still do not have a single mosquito net. Sixty-six percent of women do not receive preventive medicine to protect them from malaria while pregnant. More than 40 percent of severe malaria cases in children could be averted through prompt care seeking.⁴

Sustained and increased funding commitments from the U.S. government have been a cornerstone for malaria progress. However, in 2020, the WHO estimated that \$6.8 billion was needed annually to fight malaria, while total funding from all sources has stood at approximately \$3 billion annually since around 2012. At the same time, costs continue to increase and needs expand. As the population has increased substantially in Sub-Saharan Africa, so has the population at risk for malaria, from approximately 665 million in 2000 to 1.1 billion in 2019. This means that despite efficiencies, more resources are needed to reach a growing number of people at risk of malaria. Accelerating progress will be difficult unless additional funding becomes available.

COVID-19 has further derailed progress against malaria

COVID-19 has claimed more than four million lives through mid-2021. It has also disrupted supply chains, endangered health workers, drained fragile health systems, and made communities fearful of seeking needed health services—allowing diseases like malaria to resurge.

While close coordination and strong country leadership enabled many malaria-prevention campaigns to continue with adaptations, surveys by the Global Fund showed that malaria treatment services have been significantly disrupted. The WHO estimates these disruptions could add 100,000 additional deaths to the more than 400,000 malaria deaths annually. The WHO also reports that more than 115,000 health and care workers have died from COVID-19. Personal protective equipment and COVID-19 vaccines are urgently needed to keep health workers and the communities they serve safe.

Cumulating mutations in parasites and mosquitoes

Threats like insecticide and drug resistance loom large. Resistance to pyrethroids, the main type of insecticide used in mosquito nets, is present in nearly 80 percent of monitoring sites in Africa and is rapidly increasing. Resistance to recently introduced chemicals for insecticide spraying has also emerged. Drug resistance to artemisinin, a key ingredient in the most common malaria drugs, is widespread across Southeast Asia, limiting treatment options. In 2020, early signs of similar resistance emerging in Africa were reported for the first time.⁵ Without effective malaria treatments, decades of progress could be undone. Drug and insecticide resistance anywhere is a threat to people everywhere.

Climate change introduces unpredictability

Climate change significantly affects health. Climate change will cost billions in health expenditures, and the WHO

estimates it could trigger 250,000 more deaths per year in coming decades from malnutrition, heat stress, and diseases like malaria. Increasingly occurring climate crises such as major cyclones and floods will destroy health system infrastructure, create climate refugees, and produce new mosquito breeding sites. Unpredictability of rains will disrupt the usual planning for seasonally directed malaria interventions. Climate change may also result in shifts to mosquito survival, geographic range, and the duration of seasonal transmission of malaria.

Conflict and humanitarian crises endanger health workers and disrupt services

Conflict continues to displace people and disrupt malaria services. In Ethiopia, Burma, Burkina Faso, Mozambique, and other countries facing conflict, it is increasingly difficult to ensure the safety of health workers and the people they serve. In 2020 malaria was the largest cause of illness among refugees globally.⁶ In 2021, 235 million people, the highest number ever, are expected to need humanitarian assistance.⁷ ●



A team of mobile malaria workers provides testing for a mobile and migrant population in Pursat, Cambodia. Photo by Cambodia Malaria Elimination Project, 2020

BUT NEW OPPORTUNITIES ARE EMERGING

Anticipating a vaccine on the horizon

Introduction of a first malaria vaccine, the RTS,S/AS01 vaccine, in combination with other proven malaria interventions, could dramatically reduce malaria cases, life-threatening severe disease, and deaths, especially through initial targeting to the highest-risk populations and geographies. The RTS,S/AS01 vaccine was in large-scale pilot implementation in three countries in Sub-Saharan Africa as of mid-2021. The WHO will make a recommendation regarding its expected use in late 2021. Other vaccines are in the pipeline as of 2021 and may become vital tools against malaria in the future.

Building on investments in pandemic response and preparedness

Investments in laboratory, community health, and surveillance systems have been key in reducing the global threat of malaria infections and drug resistance. These systems have also been leveraged for pandemic preparedness and response. Community health workers trained in malaria testing quickly responded to prevent and detect COVID-19. Investments in laboratory surveillance to monitor for insecticide and malaria drug resistance enabled rapid detection of the virus. We can more strategically leverage these investments to prevent, detect, and respond to malaria and strengthen global health security against future threats.

Bring care to people—don't wait for people to come to care

Bringing care closer to people helps ensure no family is unreachable by lifesaving tools and services. Many countries have been making investments in employing, training, and equipping community health workers on a large scale. For example, 50 percent of malaria cases in rural Liberia are treated by community health workers; many of those cases may previously have gone undiagnosed and untreated. Community testing, treatment, and surveillance have been key components of malaria elimination programs, such as in Thailand, where community health workers helped reduce cases by more than 90 percent. Investment in communities

and community health systems has yielded great returns against malaria and for primary health care.

Strengthening supply of existing and new products

Increased coordination among global funders for procurement of essential malaria commodities has yielded cost savings and a greater supply of high-quality products. PMI has collaborated with global stakeholders to: expand the pool of quality-assured diagnostics suppliers, ensure that sufficient drugs for seasonal chemoprevention are available each year, address potential shortfalls in the supply of severe malaria medicines, and reduce costs of new types of mosquito nets and insecticides. Continued collaboration will be essential.

New weapons against malaria are also becoming available. New types of mosquito nets and public health insecticides are expected to reduce malaria cases significantly in regions with insecticide resistance. New drug combinations are being tested or are already in use to reduce the emergence and spread of drug resistance. Newer rapid tests are currently being validated against infections that have evaded current diagnostic tools. These concrete solutions to today's problems help the malaria community to stay one step ahead of the mosquito and the parasite.

Benefiting from strengthened data and supply systems

Countries have made significant progress in strengthening their data systems, though major challenges remain. Nearly all PMI partner countries have adopted electronic information systems, which have improved malaria data collection and reduced stockouts. PMI partner countries are using digital data collection for entomological monitoring and for implementation and tracking of insecticide spraying. Advances in mobile technology have also enabled, for the first time, health workers in remote communities to communicate with supervisors, capture data, and receive on-the-spot virtual support. As the cost of such tools continues to fall and connectivity improves, they can be used on a larger scale to improve simultaneously the quality of services provided and the data for surveillance and planning. ●



Truck driver Richar Nkhata helps unload mosquito nets from a truck for distribution in Zambia. Photo by GHSC-PSM, 2021

PMI STRATEGY 2021-2026: END MALARIA FASTER

Looking back on 15 years of PMI and ahead at these unprecedented threats and opportunities, we are at a crossroads in the fight against malaria. We ask: What if the next 15 years could be the last 15 years of one of history's deadliest pandemics?

PMI's 2021-2026 Strategy lays out a Vision, Goal, Objectives, and Strategic Approach to *End Malaria Faster*. To end

malaria within our generation, PMI will aim to greatly reduce malaria deaths and cases in countries that account for 80 percent of the global malaria burden—contributing to the global goals of saving more than four million lives and averting over one billion cases by 2025—and to accelerate toward elimination in ten countries. Five strategic focus areas have been identified to achieve these targets. ●



OBJECTIVES 2021–2026

Under this strategy, objectives are designed with equity in mind and tailored to groups of PMI partner countries based on their burdens of malaria disease and deaths. PMI has identified three clusters of partner countries: those with highest incidence of deaths and disease (all-cause child deaths greater than 70 per 1,000 and malaria prevalence greater than 20 percent), those with moderate levels of disease (malaria prevalence between 5 and 20 percent), and those with low disease burden (malaria prevalence below 5 percent).^{viii}

Building on existing progress, PMI will work with national malaria programs and partners to:

1. Reduce malaria mortality by 33 percent from 2015 levels in high-burden PMI partner countries,^x achieving a greater than 80 percent reduction from 2000

In the 14 countries with the highest burden of malaria, PMI will target a one-third reduction in deaths. These countries have the furthest to progress and accounted for nearly 300,000 or 66 percent of malaria deaths worldwide in 2015. Many continue to have large gaps in malaria intervention coverage and insufficient access to care. Most have also experienced recent or current conflict. Operating conditions in these countries may be challenging, yet sustained and effective malaria interventions can significantly reduce deaths.

2. Reduce malaria morbidity by 40 percent from 2015 levels in PMI partner countries with high and moderate malaria burden^x

PMI will target the same 14 high-burden countries plus five moderate-burden countries to reduce malaria morbidity by 40 percent. These 19 countries accounted for more than 170 million or nearly 80 percent of malaria cases worldwide in 2015. Countries with

moderate burden have made substantial progress against malaria, but some regions within each country continue to have high case rates. PMI will target reductions of disease with tailored support to these high-burden regions while working with partners to ensure that malaria stays under control in regions that have driven it down.

3. Bring at least ten PMI partner countries toward national or subnational elimination,^{xi} and assist at least one country in the Greater Mekong to eliminate malaria^{xii}

Low-burden countries^{xiii} have made impressive advances in reducing malaria deaths and disease—largely because they have been able to build strong health, surveillance, community health, and supply-chain systems to deliver interventions and monitor progress. These countries continue to fight pockets of malaria that will be targeted to reduce transmission. PMI will work with partner countries in Sub-Saharan Africa to eliminate malaria sub-nationally and in the Greater Mekong to achieve nationwide elimination goals. Sub-national elimination will likely require substantial reduction of malaria in the higher-transmission areas of a country, which are often the source of continual introduction of the parasite into the very-low-transmission settings where elimination is being targeted. ●

viii. PMI has chosen 2015 as its baseline due to the completeness and robustness of all partner-country data for that time period. PMI's objectives are ambitious, yet we recognize that many of our partner countries have been chosen specifically because they are among those hardest hit by malaria and by shocks such as conflict and political instability. Now countries are experiencing setbacks as a result of the COVID-19 pandemic, with the disruptions still being felt. PMI targets for mortality and morbidity therefore deviate from the WHO Global Technical Strategy target for 2025, set at 75 percent reductions. Given the unknown full impact of COVID-19 on partner countries in 2020 and 2021, PMI will reevaluate targets midway through the strategy and make adjustments to ensure that they remain effective yet realistic.

ix. Countries with malaria prevalence greater than 20 percent and all-cause child mortality greater than 70 per 1,000 live births in 2015: Angola, Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Democratic Republic of the Congo, Ghana, Guinea, Liberia, Mali, Mozambique, Niger, Nigeria, Sierra Leone.

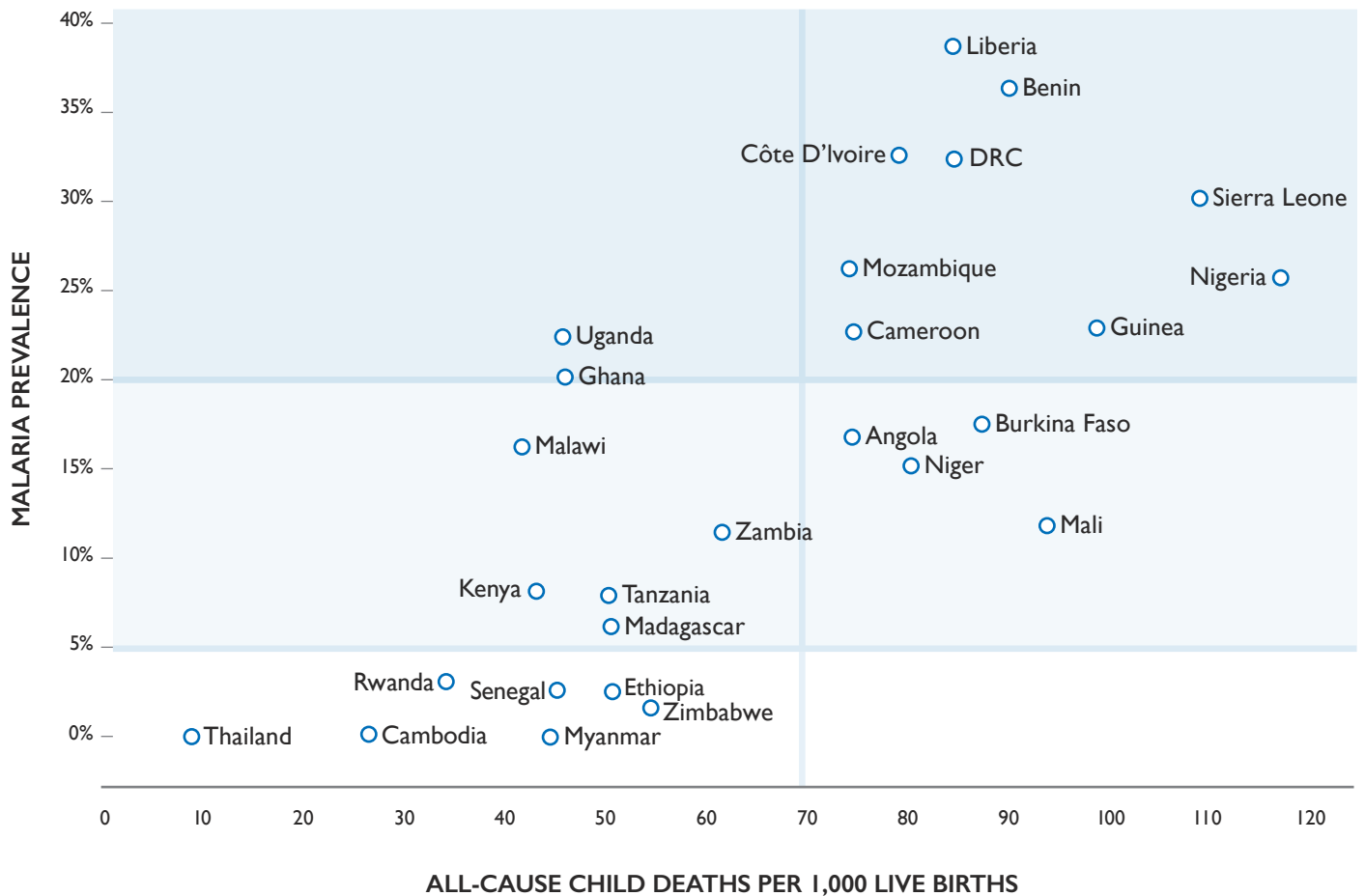
x. Countries with malaria prevalence greater than 5 percent in 2015: 14 listed above plus Madagascar, Malawi, Tanzania, Uganda, Zambia.

xi. Achieve annual test positivity rate below 5 percent or annual parasite incidence below 10 per 1,000 population.

xii. Defined by reaching zero indigenous cases.

xiii. Countries with malaria prevalence near or below 5 percent.

MALARIA AND CHILD MORTALITY BURDEN IN PMI PARTNER COUNTRIES



Strategic objectives are designed to meet PMI partner countries along their journeys to malaria elimination. In 2019, some countries continued to suffer from high death rates and high burden of disease, while others were approaching malaria elimination. All-cause child deaths range from fewer than 10 per 1,000 live births to nearly 120.

Malaria prevalence ranged from 0.6 percent to nearly 40 percent. Sources: Malaria Atlas Project, malaria prevalence estimates in children two to ten years of age; UNICEF, All-cause child mortality. 2019 estimates are presented here as a recent snapshot, while the strategic objectives apply to countries based on their 2015 statuses. ●

STRATEGIC APPROACH

End Malaria Faster maintains core support for proven, cost-effective interventions while increasing focus in five strategic areas. Each of these areas represents an essential aspect of success in meeting the three strategic objectives. In addition to tracking progress toward the objectives, PMI will establish metrics and measure progress as appropriate for each of the Strategic Focus Areas under a Strategic Implementation Plan.

In collaboration with national malaria programs, funders, and partners, the PMI Strategy will aim to:

1. **Reach the unreached:** Achieve, sustain, and tailor deployment and uptake of high-quality, proven interventions with a focus on hard-to-reach populations.
2. **Strengthen community health systems:** Transform and extend community and frontline health systems to end malaria.
3. **Keep malaria services resilient:** Adapt malaria services to increase resilience against shocks—including COVID-19 and emerging biological threats, conflict, and climate change.
4. **Invest locally:** Partner with countries and communities to lead, implement, and fund malaria programs.
5. **Innovate and lead:** Leverage new tools, optimize existing tools, and shape global priorities to end malaria faster.

THE U.S. PRESIDENT'S MALARIA INITIATIVE OPERATING PRINCIPLES

The U.S. President's Malaria Initiative Strategy for 2021–2026 is guided by many of the same principles that were established when PMI was launched, in addition to new areas of emphasis as needs and priorities have evolved. The following principles underpin the approach and success of the strategy:

1. **Country ownership:** Work within and support national malaria strategies; promote country ownership and leadership of the malaria program to ensure sustainability.
2. **Equity:** Achieve equity by prioritizing those with the greatest need and at highest risk, including gender, racial, socioeconomic and geographic equity; incorporate gender responsiveness in provision of services.
3. **Local leadership:** Invest in people closest to those whom we serve by leveraging community structures and supporting local partners to lead and sustain the fight against malaria.
4. **Strategic partnerships:** Partner with country governments, multilateral and regional organizations, implementers, foundations and other funders, financing institutions, private sector, and community organizations to avoid duplication, promote sharing of information, mobilize communities, leverage resources to fight malaria, align on global priorities, and reach a shared vision towards a malaria-free future.
5. **Efficiency:** Seek to make the greatest impact against malaria with every dollar.
6. **Flexibility, responsiveness, adaptability:** Maintain flexibility and remain responsive to the ever-changing nature of malaria, adapting to new challenges and situations in partner countries.
7. **Multisectoral approach:** Engage with stakeholders in other sectors, including education, agriculture, and commerce, to achieve malaria control and elimination objectives.
8. **Integration with USG global health investments:** Where beneficial, integrate malaria activities with maternal and child health, HIV/AIDS, tuberculosis, neglected tropical diseases, and Global Health Security activities. •



Deborah Olusch (right) lives with her six grandchildren in Kenya. She is consulted by an operator who will spray her home with insecticide before the high transmission season of malaria. Since 2005, 310 million people have been protected through spraying homes. Photo by Jessica Scranton, 2017

I REACH THE UNREACHED

Achieve, sustain, and tailor deployment and uptake of high-quality, proven interventions with a focus on hard-to-reach populations.

I.1 Achieve and maintain coverage of high-quality interventions to reach the highest malaria burden, highest-need populations in each country

Despite progress in scaling up malaria interventions, more than 30 percent of children with fever in Sub-Saharan Africa are not receiving care. These children predominantly come from the poorest and most rural families.¹ Where care is available, gaps persist in the quality of services. Up to 40 percent of pregnant women do not receive adequate preventive treatment during antenatal care visits. Gaps in quality and reliability are also common in malaria testing and treatment practices and in the deployment of optimal mosquito nets for insecticide resistance.

PMI will focus first on achieving and maintaining coverage of effective interventions for testing, treatment, and prevention to reach the unreached—typically remote, rural, and other marginalized populations living in regions of high malaria burden. PMI will work with partner countries to identify communities that are at high risk for malaria and have low

rates of malaria testing, treatment, and use of mosquito nets. PMI will work with national programs to improve their supply chains' functional capacities to deliver high-quality malaria commodities and equip health workers at the last mile. PMI will also engage these communities through social and behavioral change to increase uptake and use of interventions.

In high- and moderate-burden countries, this focus on reaching the unreached will help drive down malaria deaths and disease through prompt care and increased protection for the most vulnerable. In low-burden countries, targeting marginalized and mobile populations with poor access to services and persistent malaria transmission is key to eliminating the disease.

PMI will continue to focus on improving the quality and effectiveness of malaria interventions. Investments to improve the quality of malaria services, such as adherence to testing, treatment, and prevention guidelines, will first support frontline health workers at the community and clinic levels, including in private provider outlets that

reach underserved populations. These investments will be complemented by social and behavior-change interventions to increase demand for high-quality services, including testing prior to treatment.

I.2 Tailor deployment of interventions for maximal impact, using the right tools, in the right place, at the right time

Malaria is not the same everywhere. With differences in geography, climate and malaria seasons, mosquito characteristics, cultural and social norms, and human behavior, it is important to identify the most effective mix of interventions for each setting.

PMI will work with partner countries to tailor deployment of interventions and intervention packages sub-nationally so that the right tools are available in the right places at the right time to reduce malaria deaths and cases. Evidence from operational research, evaluations, modeling, and other data will guide selection of interventions and their combinations. Tailoring may include using local data to distribute mosquito nets effective against insecticide resistance preferentially, or extend the length of chemoprevention campaigns in districts with a longer malaria season. Referral of children with severe malaria may be strengthened in settings with high malaria burden and deaths to reduce malaria mortality. In elimination settings, different interventions may be used to target foci of local transmission than those used to prevent importation of malaria through exposure to high-risk populations.

I.3 Leverage data for decision-making and monitoring of progress and impact

Data advances have enabled national programs to better track disease trends, identify coverage gaps, monitor commodity stocks in more remote areas, and identify which

interventions work best. District and local data in particular are required to identify unreached populations and measure progress in reaching them.

While many PMI partner countries have built strong data capabilities at national levels, some high-burden PMI partner countries are at an earlier stage in this process. In these countries, PMI will continue to strengthen routine surveillance and supply-chain data systems and skills within national malaria programs. PMI will help partner countries improve data collection, quality, timeliness, and use, especially at the regional, district, and local levels wherever possible. PMI will also help introduce and scale digital technologies to spur rapid, accurate data reporting, increase health worker capacity, and improve service provision. In elimination settings, PMI will support local surveillance systems to rapidly detect, treat, and investigate every case.

Tailoring of approaches also depends on using malaria case information along with other local data. Local variation in malaria burden, seasonality, intervention coverage, and human behavior must be collected and understood. Advances in behavioral science can be leveraged to increase uptake of nets, tests, medicines and other interventions. Entomological data and epidemiological risk factors must be characterized and considered. PMI will work with partner countries to strengthen the collection and use of local data to inform effective tailoring of interventions to the setting. This includes making malaria data and information available to affected communities and those managing programs. Monitoring of parasites and mosquitoes to guide selection of malaria tests, treatments, insecticides, and other tools for mosquito control will continue. Need-based surveillance will be emphasized, such as the early detection and characterization of newly invasive mosquitoes in the Horn of Africa. ●



Regina Kluisse (left), District Deputy Director of Nursing Services, trains nurses on malaria rapid diagnostic tests at a hospital in Ghana. Photo by Emmanuel Attramah, 2021

2 STRENGTHEN COMMUNITY HEALTH SYSTEMS

Transform and extend community and frontline health systems to end malaria.

2.1 Transform the quality of community health systems, from the clinic to community levels, to improve malaria outcomes

Outbreaks start and stop in communities. Strong community health systems are essential for meeting malaria and child health goals and for achieving this strategy's three objectives. Community health workers have demonstrated the ability to provide testing and treatment for malaria, diarrhea, pneumonia, and other childhood diseases. They make lifesaving care accessible to millions of people—an equity-based, proven approach for reducing child mortality. Community health workers also play an active role in case follow-up and investigation in elimination settings. PMI has supported countries in their journeys to scale up community case management since its launch, investing millions every year in community health worker training, supervision, and supplies.

Despite these investments, major challenges remain in maintaining a well-supported, equipped, and fairly compensated community health workforce. Weak systems for supervision and data collection leave community health workers without the support and mentorship they need to work effectively and leave their true impact unmeasured. Frequent stockouts of commodities prevent community

health workers from being able to offer care. Most community health workers are women, most are poor, and most are not paid. According to WHO, women on the front lines, including many at the community level, subsidize more than \$1 trillion of health care globally with their unpaid labor.

Coordinating with counterparts within and outside the U.S. government, PMI will champion national efforts to finance, professionalize, and institutionalize community health worker programs as an integral part of the formal health system. Through both advocacy and provision of direct support of payment for community health workers for the first time, PMI will catalyze funder and host-government investment in these essential cadres and work to abolish the pay gap for women working on the frontlines. PMI will invest in supply chains, protective equipment, training, supervision, and regular communication between community health workers and clinic staff. These strengthened links along the clinic-to-community continuum will contribute to improved patient care and the institutionalization and sustainability of community health programs.

Community-level data are essential for planning, monitoring, and decision-making. PMI will strengthen health-management information systems to collect disaggregated community-level data for use by community health workers

and at all levels of the health system. For example, PMI will invest in digital decision-making and data-collection tools for community health workers. These tools can improve the quality of care and job performance by health workers while generating data to identify underserved populations, document program impact on morbidity and mortality, and better forecast commodity needs.

2.2 Extend the reach and range of community health services

Despite efforts by country governments and development partners, many PMI partner countries have reported that supplies to diagnose and treat diarrhea, pneumonia, and malnutrition are not consistently funded or available at the community level. Children frequently suffer from multiple of these common conditions at the same time, yet they only receive treatment for malaria. A vertical, malaria-only community health platform is less effective at reducing deaths than a platform that addresses broader needs across child and maternal health. Such a platform is also less sustainable in elimination settings where malaria cases are rare and community health workers must offer additional services to meet the needs of their communities. PMI will continue to collaborate with partners in child health to advocate at global, national, and local levels for the provision of both malaria and non-malaria commodities together so community health workers can offer a truly integrated suite of lifesaving services. PMI will also work to achieve greater

integration with maternal health, reproductive health, and other primary-care services where appropriate.

PMI will scale up community-based models of care that go further to reach the unreached with malaria testing and treatment—particularly in countries and districts with high malaria deaths and cases. These approaches will vary according to the local context and may include the expansion of malaria community case management beyond young children to include patients of all ages and proactive visits by community health workers to bring testing and treatment to the household. New approaches such as community-based preventive treatment for malaria in pregnancy may also provide benefits for those with limited access to antenatal clinics. PMI will support partner countries to consider and adopt these models as part of a strong clinic-to-community health system.

Evidence and experience show that community-centered social and behavior-change interventions can influence social norms, foster an enabling environment for the practice of better health behaviors, and increase demand for critical health services. PMI will invest in locally led social and behavior-change programming tailored to specific country contexts and needs. A primary aim will be to increase rapid care seeking for fever and other malaria interventions and addressing the unique context of a given community. ●



After receiving mosquito nets from a mass distribution campaign, community health workers visit homes to ensure the proper installation and use of mosquito nets. Photo by USAID, June 2021

3 KEEP MALARIA SERVICES RESILIENT

Adapt malaria services to increase resilience against shocks, including COVID-19 and emerging biological threats, conflict, and climate change.

3.1 Leverage investments in malaria services to strengthen global health security

The COVID-19 pandemic has laid bare the weaknesses and insufficient support to community and frontline health workers across the globe. Challenges in detecting and tracking the virus have further affected malaria and other health services. In 2020, half of health facilities surveyed in Africa reported COVID-19 infections among their staff. Use of malaria treatment and antenatal care services fell by up to 40 percent.³ The effects of the pandemic clearly demonstrate that resilient, adaptable health and surveillance systems are required to beat all diseases, whether old or new, and to sustain essential services.

COVID-19 is not the last pandemic we will face. The same communities that are currently unreachable by malaria health services are also “blind spots” for disease surveillance. Between 2010 and 2020, investments in community health workers to diagnose and treat malaria have resulted in more than two billion fevers tested.¹ Many

PMI partner countries have demonstrated how sustained support for community health systems and community engagement enable rapid and effective expansion of the national response to a new threat like COVID-19, which also presents with fever as a common sign.⁸ PMI will support integration of community health and surveillance systems to improve detection and response for malaria as well as the next pandemic. These investments will strengthen local—and therefore global—health security.

PMI will also strengthen partnerships between national malaria programs and national public health institutes to jointly fight malaria and strengthen the pandemic response. For example, the same capacities required in epidemic surveillance—rapid case-based notification and response—are used to eliminate malaria. As countries approach elimination and malaria becomes a notifiable illness, malaria surveillance may be integrated with national Emergency Operations Centers and response activities supported by integrated rapid-response teams.

PMI will help to build on these integrated approaches so that lessons, resources, and knowledge can be applied to benefit both malaria elimination and epidemic preparedness and response.

3.2 Leverage investments in laboratory systems and field surveillance to strengthen global health security and mitigate against mosquito and parasite resistance

Most new biological threats are, and will continue to be, rural and zoonotic in nature. PMI has strengthened local capabilities in surveillance of vectors and parasites in nearly 350 sites. The laboratories at these sites track the ability of the mosquitoes and the malaria parasite to evade current insecticides and treatments. Hundreds of local “disease detectives” have received field epidemiology training and gone on to lead malaria and infectious disease response programs at district, regional, and national levels. These capabilities are already being applied to detect and characterize COVID-19 and other threats in multiple countries. Together with networks of scientists in Africa and Southeast Asia, institutions such as Africa CDC, and philanthropic partners, PMI will foster collaborations that build on laboratory capacities and integrated surveillance platforms to advance overall global health security.

In addition to timely monitoring and surveillance of insecticide and drug resistance, global health security threats in their own right, PMI will continue to mitigate against their effects. Stewardship to extend the useful life of current insecticides and malaria treatments requires strategies to rotate the insecticides used; scale-up of diagnostic testing prior to treatment and of quality-assured medicines; and behavioral interventions to promote rational use of medicines. New applications of current products may also be considered if recommended by WHO. These could include longer courses of malaria treatments, new combinations of existing drugs, and alternative approaches to applying insecticide sprays. PMI will also introduce new insecticides and modes of delivery for vector control, with new insecticides expected in late 2021.

3.3 Adapt to continue malaria services during pandemics, conflict, climate change, and other shocks

In 2020, all 27 countries with PMI programs faced shocks in addition to the COVID-19 pandemic due to violence,

internal displacement, an influx of refugees, other disease epidemics, and natural or man-made disasters. While these threats will continue to be a painful reality in many countries, we can mitigate against their impacts and help countries adapt to continue providing malaria services.

PMI will apply lessons learned from Ebola and COVID-19 to maintain routine services and campaigns during outbreaks. Malaria interventions will be adjusted to reduce risk and keep communities and providers safe. Examples include asking caregivers, instead of health workers, to administer seasonal preventive treatments to their children and virtual visits by supervisors to maintain support to frontline health workers while minimizing travel and in-person contact. Community structures will be leveraged to design and implement programs aimed at addressing rumors and misinformation, ensuring continued use of health services and promoting preventive behaviors. PMI will also continue advance planning and coordination at global and country levels to mitigate against supply-chain disruptions and ensure a steady supply of malaria commodities and protective equipment.

Drawing from lessons learned from settings of conflict and humanitarian crises, PMI will work with partner governments and humanitarian assistance partners to continue to deliver key malaria services to affected populations wherever appropriate. These include taking advantage of other agencies' operations to deliver commodities where PMI partners cannot travel and combining malaria prevention campaigns with disaster relief activities to reach malaria-affected communities in these challenging settings.

The effects of climate change on extreme weather events and mosquito populations are difficult to predict and will vary by country setting. PMI will work with partner countries to adjust programs to changing conditions where possible, such as the timing of insecticide spraying campaigns in response to shifting rainfall patterns. To better understand and prepare for climate change impacts on health systems, PMI is also investing in regional analysis in case trends and modeling of climate data. These models may be used to predict malaria outbreaks and changes in malaria distribution and seasonality. ●



Two women preparing food outside their homes in Kenya. Photo by USAID, 2021

4 INVEST LOCALLY

Partner with countries and communities to lead, implement, and fund malaria programs.

4.1 Support partner country governments to execute malaria programs successfully

Experience has shown that the most effective malaria programs are those with strong leadership and support at both the national and local levels. The success of malaria programs rests largely on the quality of technical and operational planning, management, and oversight of implementation. For seasonal prevention campaigns, this means that interventions are well planned and timed to be in place before rains begin. For routine interventions, a steady supply of commodities that anticipates seasonal fluctuations and well-supported, trained and fairly compensated local providers are required to ensure that reliable care is available.

PMI will support national and regional staff in partner countries to strengthen skills in leadership, management, field epidemiology, and operations to enable optimal planning, management, oversight, and implementation of malaria programs. Health workforce, supply chain, and

community engagement capabilities will be strengthened to deliver reliable, high-quality services. Surveillance officers at all levels will be supported to regularly gather and analyze data from routine health information systems and other sources. PMI will work with partner countries to improve governance over both public and private service delivery, so that authorities can oversee and monitor the quality of malaria commodities and care provided.

At the local level, PMI will support local government authorities and district health officers to plan and manage critical malaria activities in their districts, such as using local data to prioritize activities, budgeting based on prioritized needs, microplanning for mosquito net campaigns, generating demand in communities, managing supply chains at the last mile, and supervising frontline health workers.

PMI will create opportunities for government-to-government funding wherever possible to support national and local governments to lead in malaria implementation.

4.2 Invest in people and partners closest to those we serve

PMI will do more to build dignified and equitable partnerships. The sustainability of PMI's efforts hinges on investing effectively in local partners to lead in the fight against malaria. Local partners—including local leaders; private, nongovernmental, and civil-society organizations; research institutions; and formal and informal community groups—will be supported to apply the expertise, capabilities, tools, and resources that already exist within communities. Partnering with these organizations to lead will yield more effective malaria programs and move us closer to sustainability in malaria control and elimination.

Under this strategy, PMI will expand support for local partners to lead implementation of malaria interventions, monitoring and evaluation, operational research, and community-based social and behavioral change. This will include strengthening PMI policies for funding local partners. PMI will build on and expand current support for local investigators to conduct entomological monitoring and surveillance of drug and insecticide resistance. Funding will include support for institutional growth and capacity-building for local institutions so that they can grow to meet their own capacity objectives. Work on this effort is already underway with the engagement of local investigators from partner countries to advise PMI's efforts.

Support to local civil-society organizations will also be provided to ensure quality of malaria services in their

communities. Communities and civil society will be engaged to utilize locally available data and actively participate in priority-setting and implementation of activities that address their core needs. For example, PMI will support the development and implementation of local malaria action plans by community health committees to increase adoption of prioritized prevention and treatment behaviors.

4.3 Encourage country commitment to end malaria

Affected country governments have consistently contributed about 30 percent of the overall funding envelope for malaria since 2010.² As the global funding gap continues to widen each year, we must draw from all sources, including all sectors in partner countries, to make further progress against malaria.

PMI will contribute to U.S. government and global goals to increase both partner-country government and private-sector commitments against malaria. PMI will also help argue for additional resources to fight malaria by identifying and quantifying human resource gaps in the frontline health workforce, advocating for inclusion of malaria diagnosis and treatment in national or regional health insurance efforts, and advocating for government support for malaria commodities from quality-assured suppliers, including local and regional manufacturers. ●



Shaabani Khamis (left), a community health worker in Zanzibar, goes door to door testing and treating for malaria. He uses a tablet to record and analyze malaria data that he shares with his local health center. Photo by USAID, 2014

5 INNOVATE AND LEAD

Leverage new tools, optimize existing tools, and shape global priorities to end malaria faster.

5.1 Introduce new tools

New tools and approaches are needed to stay ahead of resistance, gain efficiencies, extend the reach and impact of interventions, and accelerate toward elimination. Under this strategy, PMI will influence the pathway from innovation to scale-up at multiple points: in introducing new proven products and tools, in influencing research and development to meet priority needs in partner countries, and in conducting operational research and evaluation to optimize implementation.

PMI will use its large and successful implementation platform to bring new, proven products and approaches to scale. Introduction of a vaccine would be a major scientific and public health achievement, potentially accelerating progress in reducing malaria cases, life-threatening severe disease, and deaths. If a candidate vaccine receives a positive WHO recommendation and is adopted by the Expanded Program for Immunization, it will be critical for PMI to ensure that complementary malaria prevention and treatment is well-implemented to maximize vaccine efficacy.

Additional tools PMI may consider for introduction once proven effective could include new insecticides, new or existing vector-control tools targeting different life stages and different vector biology, and new rapid diagnostic tests and medicines to combat mutations in the parasite. In addition, newer proven approaches to effectively extend access to care and reach the unreached, better capture and analyze data, and achieve efficiencies will be identified and brought to scale.

To encourage research and development (R&D) of new tools, PMI will further strengthen its engagement and collaboration with U.S. government and global R&D partners, utilizing its programmatic expertise to shape research agendas in alignment with the priority needs of malaria programs. Priorities will include improvement of existing interventions in the malaria toolbox, as well as novel, transformative innovations that have the potential to reduce the global malaria burden significantly in the

future. PMI will engage with partners throughout the R&D process, providing guidance on requirements for scalability of new products in PMI partner countries. This will include contributing to the development of product profiles that are affordable and suitable for local conditions, shaping evaluations to assess the feasibility and scalability of new innovations, and informing implementation and scale-up plans for market-ready products.

Operational research and program evaluation will continue as a priority under this strategy, to assess intervention combinations with high potential to reduce the malaria burden, improve efficiencies, and address inequities. To prioritize research and evaluation questions, PMI will expand efforts with global and country partners jointly to develop a global operational research agenda. Topics may include assessing the scalability and sustainability of new proven interventions; evaluating different combinations or sequences of current interventions for greater impact on deaths, disease, and malaria transmission; and investigating approaches to reach and serve unreached populations more effectively. PMI will partner with local research institutions to lead the design, development, and execution of studies. This approach will draw on in-country knowledge and insights to test approaches in the local context and identify locally adapted solutions for broad-reaching application.

5.2 Shape global priorities and provide global technical and operational leadership in malaria

PMI has extensive experience in large-scale implementation of malaria interventions across a number of countries. PMI will apply this expertise to feed into WHO and other global guidance and shape malaria policies and priorities to yield the greatest impact in PMI partner countries and around the world.

PMI will draw from its networks, experience, and technical capacity to convene private- and public-sector, local, and civil-society stakeholders; researchers; philanthropic organizations; and other funders to take on key implementation challenges and opportunities in malaria. PMI will engage closely with multilateral stakeholders to

inform global policies and guidance to help ensure they are useful and practical for country programs, building from PMI's program experience in partner countries. PMI will collaborate with global and regional partners to set and achieve shared priorities, such as establishing a clear, rapid evidence-to-policy pathway for new tools.

5.3 Expand availability and use of malaria data

As shown by multiple successful public health programs, greater access to good malaria data by community, country, and global leaders is essential to accelerating our progress against malaria. As part of this strategy PMI will work to expand the sharing and use of malaria information at all levels. In this way PMI will improve advocacy, regional planning, coordination, and execution of malaria activities. PMI will also strengthen data partnerships with global and national stakeholders and leverage modeling and analysis capabilities to feed into regional and country decision-making. Such efforts may include the analysis of data across countries to identify and explain regional trends. Information sharing will also increase transparency, quantify resource gaps, and equip advocates to champion effectively against malaria.

5.4 Shape global markets

PMI will leverage USAID's leadership and experience in product procurement and global supply chains to create successful collaborations with other funders, financing mechanisms, industry, local manufacturers, and product-development partnerships. Such partnerships have already been effective in mitigating the supply-chain disruptions caused by COVID-19. They remain critical for adapting to new biological threats and increasing resilience against future perturbations. PMI will enhance efforts that encourage competition, incentivize production of critical products, and keep markets healthy while reducing and stabilizing commodity costs. PMI will also diversify the supply base by bringing products closer to those who need them. Support will include strengthening local and regional manufacturing to meet global quality standards and fill critical capacity gaps. ●

FUNDING ASSUMPTIONS

The goal and objectives set forth in this strategy are based on an aspirational budget of \$1 billion annually, in line with the 2015–2020 funding assumptions. This level is higher than the Fiscal Year (FY) 2021 appropriation of \$770 million and the FY 2022 President's Request of \$770 million. PMI will continue to work diligently to maximize all available resources based on program priorities outlined in this strategy. PMI will also continue to collaborate with the private sector and philanthropic organizations to leverage malaria financing towards this strategy.

If additional resources above \$1 billion annually are available during the timeframe of this strategy, totaling \$1.5 to \$2 billion annually, a number of priority investments could be scaled up to save more lives and end malaria faster. Specifically, with additional resources beyond the \$1 billion annual baseline, PMI can achieve the following milestones:

- Reach many more unreached and save more lives in 27 current partner programs;
- Expand to five to ten new highest-burden countries in sub-Saharan Africa, delivering an additional 25 million treatments, 17 million insecticide-treated nets, and training and support for 80,000 more frontline and community health workers annually;
- Guide scale-up and expansion of the world's first malaria vaccine with complementary expansion of current available malaria interventions, in collaboration with U.S. government partners; Gavi, the Vaccine Alliance; and other global stakeholders in the Expanded Program on Immunization;
- Expand coverage of newer, more effective insecticides and medicines in current and new partner countries;
- Establish and strengthen up to 100 additional surveillance sites to identify and respond to parasite and mosquito resistance, as well as the next pandemic; and
- Eliminate malaria in two to five additional countries or regions.

The continuing effects of COVID-19 are now setting malaria-affected countries back by years, and the full impacts remain to be seen. To fully get back on track to end malaria, bold action and additional resources are needed now. ●



Shaabani, a community health worker in Zanzibar, leaves to visit the home of a potential malaria patient on his bike. PMI and partners invest in bikes for community health workers to improve efficiency. Photo by USAID, 2014

ALIGNMENT WITH U.S. GOVERNMENT AND GLOBAL PRIORITIES

Malaria remains a major U.S. foreign assistance priority and critical component of the U.S. Government's global health efforts. Malaria still kills a child every two minutes. PMI's strategy is fully aligned with USAID's strategic priorities of preventing child and maternal deaths and of combating infectious diseases. Because malaria also takes a heavy financial toll on families and affected countries, this strategy's focus on reducing the burden of malaria further supports the U.S. Government's goal of ending extreme poverty and promoting economic growth. The costs of malaria to public health systems and communities are high, accounting for up to 40 percent of public health spending in some countries and costing affected families over one quarter of their income. Eradicating malaria will alleviate this massive economic burden and is estimated to generate \$2 trillion from gains in productivity and health savings.

Today, malaria remains a global health security threat that infects thousands of American travelers, including deployed military personnel, each year. Americans take millions of trips to malaria-endemic areas annually and need to take a pill to prevent contracting malaria when they travel to endemic countries. PMI's long-standing support for laboratory and field surveillance and primary and community health systems to diagnose and treat febrile illnesses contributes to U.S. national security priorities in pandemic preparedness and global

health security. U.S. Government goals to expand the global health workforce, advance equity and inclusion, and reach universal health coverage are also closely aligned with this strategy's priorities to extend the reach of care by supporting community and primary health workers, close the pay gap for cadres that are largely female and largely unpaid, and invest in local partners to lead malaria program implementation.

Success against malaria hinges on the efforts of stakeholders at all levels. PMI's strategy aligns with partner countries' national malaria strategic plans as well as WHO's *Global Technical Strategy for Malaria 2016–2030* and High Burden to High Impact initiative, and RBM's Action and Investment to defeat Malaria 2016–2030 (AIM). PMI complements the contributions of other key funders and financing institutions, including the Global Fund, UNICEF, and U.S. Government including USAID's and CDC's development investments in HIV/AIDS, maternal and child health, global health security, and other health areas. In addition to the central role of national malaria programs in leading country-level implementation, PMI relies on the efforts of the U.S. Government and global malaria stakeholders to advance research and product development, advocate for and mobilize resources, provide global technical guidance, and support implementation and optimization of national programs. ●



François and Marie Chantale Koffi with their son Alexandre at their family home in Côte d'Ivoire. Marie has just received malaria-prevention medication. Since 2005, 42 million pregnant women have received preventive treatment through PMI. Photo by Mwangi Kirubi, 2020



The head of the Dalein health center in Guinea performs a rapid malaria test on a child. Photo by Sadak Souci, RTI International, 2020.

ACKNOWLEDGEMENTS

PMI thanks the dozens of collaborators and stakeholders who provided input from early to final stages of the strategy, including U.S. government, global, and partner-country colleagues. Their expert input and critical, constructive feedback were instrumental in the development of this strategic plan.

Citations

1. Richard W. Steketee et al. "World Malaria Day 2021: Commemorating 15 Years of Contribution by the United States President's Malaria Initiative." *The American journal of tropical medicine and hygiene*, 104, no. 6 (April 2021): 1955–1959. <https://doi.org/10.4269/ajtmh.21-0432>
2. *World Malaria Report 2020* (Geneva: World Health Organization, 2020).
3. *The U.S. President's Malaria Initiative 15th Annual Report to Congress* (U.S. President's Malaria Initiative, 2021).
4. Andria Mousa et al. "The impact of delayed treatment of uncomplicated *P. falciparum* malaria on progression to severe malaria: A systematic review and a pooled multicentre individual-patient meta-analysis." *PLoS medicine*, 17, no. 10 (October 2020): e1003359. <https://doi.org/10.1371/journal.pmed.1003359>
5. Aline Uwimana et al. "Association of *Plasmodium falciparum* kelch13 R561H genotypes with delayed parasite clearance in Rwanda: an open-label, single-arm, multicentre, therapeutic efficacy study." *The Lancet*, 21, no. 8 (April 2021): 00142-0. [https://doi.org/10.1016/S1473-3099\(21\)00142-0](https://doi.org/10.1016/S1473-3099(21)00142-0)
6. *Global Public Health Review 2020*. (Geneva: United Nations High Commissioner for Refugees, 2021.)
7. *Global Humanitarian Overview, 2021*. (Geneva: United Nations Office for the Coordination of Humanitarian Affairs, 2020.)
8. *Leave No Fever Unresolved: The malaria pathway to end this pandemic and prevent the next*. (London: Malaria No More, 2021.)

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