

LEVERAGING U.S. MALARIA PLATFORMS

TO SCALE COMMUNITY FEVER TESTING, CURB COVID-19 AND PREVENT FUTURE PANDEMICS IN LMICs

malaria
NO MORE

COVID Collaborative



THE PROPOSAL

A U.S. investment of an additional \$329m in PMI (in FY23 Budget or a COVID-19 supplemental) would strengthen frontline fever testing and case management **contributing to over four million additional lives saved from malaria over the next five years¹ and rapidly expanding capacity to achieve global COVID-19 testing targets**, while building critical community health infrastructure to prevent future pandemics.

THE OPPORTUNITY

Twenty years ago, the world had seemingly given up on defeating the world's oldest and deadliest pandemic: malaria. In the year 2000, more than 1.2 million people were dying from mosquito bites – mostly pregnant women and children under five – and an estimated 50 million years of human productivity was lost each year as a result of rampant malaria. Since then, thanks to American leadership and investment, the fight against malaria has emerged as a standout global success story and independent studies² have cited the U.S. President's Malaria Initiative (PMI) as a “best buy” in global health with strong ROI. Thanks to U.S. leadership and investment in PMI and the Global Fund, the malaria campaign has saved 10.6 million lives, averted 1.7 billion malaria cases, and unlocked \$2 trillion in economic benefits for our partner countries.

Key to PMI's success has been extending the reach of frontline diagnostic and case management capacity in sub-Saharan Africa and Southeast Asia: equipping community health workers and primary care clinics to test and diagnose fevers within 24 hours, deliver life-saving oral therapies, and report data to inform broader public health response. In the process, the malaria campaign has built the world's most robust “fever finding and fighting network” on the planet – one that reaches hundreds of millions of people living in the most remote and vulnerable communities around the globe. **Now, as the world works to urgently expand global testing for COVID-19, the Biden Administration has the opportunity to leverage 15 years of investment in PMI to rapidly scale COVID-19 testing and treatment to reach global targets at a fraction of the cost of building these capacities from scratch.**



BECAUSE OMICRON SPREADS EASILY, ESPECIALLY AMONG THE UNVACCINATED, IT'S CRITICALLY IMPORTANT THAT WE KNOW WHO'S INFECTED. THAT MEANS WE NEED MORE TESTING.”

- PRESIDENT BIDEN
DECEMBER 21, 2021

¹ End Malaria Faster, President's Malaria Initiative Strategy 2021 – 2026: https://d1u4sq1s9ptc4z.cloudfront.net/uploads/2021/10/10.04Final_USAID_PMI_Report_50851.pdf
² External Evaluation of the President's Malaria Initiative, December 2011: https://pdf.usaid.gov/pdf_docs/Pdact332.pdf

Today, PMI protects more than 700 million people annually across 27 priority countries in Africa and Southeast Asia. However, the latest WHO estimates³ indicate that malaria accounts for a much higher proportion of child mortality than was previously thought (updated from 4.8% to 7.8% of all global child deaths), meaning that we must do more – but also that every dollar we spend has a 60 percent greater life-saving impact. To accelerate progress, last year PMI launched its next 5-year plan to “End Malaria Faster” which aims to save 4 million additional lives and prevent 1 billion more malaria cases over the next five years with the latest innovations and additional funding. The plan could have been titled “End Pandemics Faster,” since the investments in fever finding, diagnostics, CHWs, surveillance, and frontline delivery capacities to end malaria are the same as those needed to tackle COVID-19 and prevent the next pandemic.

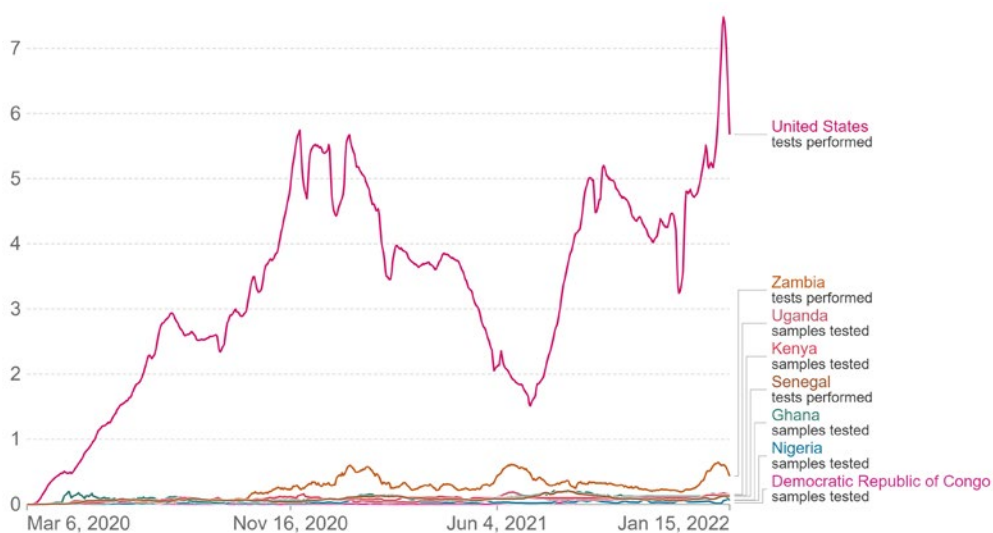
THE URGENT NEED TO SCALE COVID-19 TESTING

As Omicron emerged, the Biden Administration responded with ambitious plans for the federal government to purchase and deliver 500m additional rapid at-home COVID-19 tests. With inadequate vaccination coverage in low- and middle-income countries (LMICs) and more transmissible COVID-19 variants circulating, the Africa CDC and the global ACT-A partnership recently called for “a major shift” and “urgent step change in the use of diagnostics to narrow the global equity gap.” Specifically, the latest strategy⁴ calls for vastly expanding community-based fever testing: equipping CHWs and frontline clinics with rapid antigen COVID-19 tests to detect and report symptomatic cases and target subnational hotspots for the rollout of COVID-19 vaccines and therapies in 2022. “Testing linked to treatment and public health measures is the primary line of defense against COVID-19 in many LICs and LMICs,” the report concludes.

To close the gap, the ACT-A strategic plan calls for \$7b (of \$23.4b) in new investment to procure and deliver 988 million diagnostic tests (a mix of PCR and antigen tests) over the next year to achieve the goal of 1 test per 1,000 people per day. At the [September COVID-19 Summit](#), President Biden embraced the same goal (under the “Save Lives Now” pillar) setting a target to “eliminate the testing gap by achieving testing rates of one per 1,000 people per day in all countries.” Yet, low and middle-income countries currently lag far behind their wealthier counterparts in terms of [daily COVID-19 testing rates](#). Of the more than 3 billion COVID-19 tests reported across the world to date, only 0.4% of these have been performed in low-income countries, in part due to the absence of COVID-19 tests. Critical partner countries like Nigeria and DRC are languishing at testing rates of only 0.02-0.03 per 1,000 people per day. This creates a dangerous blind spot for understanding the speed and spread of COVID-19, and forestalls the rollout of new COVID-19 oral therapies, which are useless without testing.

DAILY COVID-19 TESTS PER THOUSAND PEOPLE

The figures are given as a rolling 7-day average.



Our World in Data

³ WHO World Malaria Report 2021: <https://www.who.int/teams/global-malaria-programme/reports/world-malaria-report-2021>.

⁴ “Act-Accelerator Strategic Plan & Budget: October 2021 to September 2022,” World Health Organization, 21 October 2021.

What's needed is an integrated fever testing-and-treatment regimen, much like the one that has been built over the past 15 years for the malaria campaign. The good news is that the U.S.-supported platforms (PMI and the Global Fund) have already demonstrated the ability to reach or exceed the target testing rate with malaria RDTs in some of the most challenging environments on the planet. As the analysis at right shows, daily malaria testing rates are 2x-to-33x that of COVID-19 testing rates, demonstrating the clear ability to achieve global COVID-19 testing targets in these geographies. Leveraging this capacity in sub-Saharan Africa is especially valuable, as it is the region with the highest malaria burden but lowest COVID-19 vaccination rates.

In December, the Global Fund secured substantial reductions in the price of antigen COVID-19 RDTs for low- and middle-income countries (down to between \$1.00 and \$2.00 per test), and has awarded \$287m (9%) of C19RM funds for rapid antigen test procurement.






This is a start, but much more is needed. Given the similarity in format between malaria and COVID-19 diagnosis and treatment tools – both utilize rapid antigen tests and oral therapies appropriate for distribution by CHWs – malaria capacities can now be quickly and cost-effectively leveraged to scale testing and treatment to achieve global COVID-19 response goals.

PMI COUNTRY	COVID DAILY TESTING RATE*	MALARIA DAILY TESTING RATE**	MULTIPLE
MOZAMBIQUE	0.14	3.48	24.8x
UGANDA	0.16	2.51	15.7x
MALAWI	0.11	1.78	16.2x
NIGERIA ¹	0.05	1.34	26.8x
ZIMBABWE	0.36	1.34	3.7x
ZAMBIA	0.64	1.28	2.0x
GHANA	0.16	1.28	8.0x
KENYA	0.07	0.74	10.5x
SENEGAL	0.08	0.68	8.5x
COTE D'IVOIRE	0.16	0.68	4.3x
DRC ¹	0.02	0.66	33.2x
AVERAGES	0.18	1.43	13.97x

* Daily COVID-19 testing rate per 1,000 population

** Avg daily malaria testing rate per 1,000 population from PMI and Global Fund Interventions

¹ Nigeria and DRC malaria rates based on testing of PMI-targeted at-risk populations

	MALARIA	COVID-19	COMMUNITY DELIVERY
DIFFERENTIAL DIAGNOSIS	<ul style="list-style-type: none"> Antigen Malaria RDT Lateral-flow finger-prick blood test 15 minutes 	<ul style="list-style-type: none"> Antigen COVID-19 RDT Lateral-flow nasal swab test 15-20 minutes 	 <p>CHWS AND FRONTLINE CLINIC CAPACITY PERFORMING MALARIA CASE MANAGEMENT CAN BE RETRAINED AND ADAPTED FOR COVID-19 SCALE UP</p>
ORAL THERAPIES	<ul style="list-style-type: none"> Artemisinin Combination Therapy (ACTs) Oral Therapy 3-day Course 	<ul style="list-style-type: none"> Paxlovid or Molnupiravir Oral Therapy 5-day Course 	

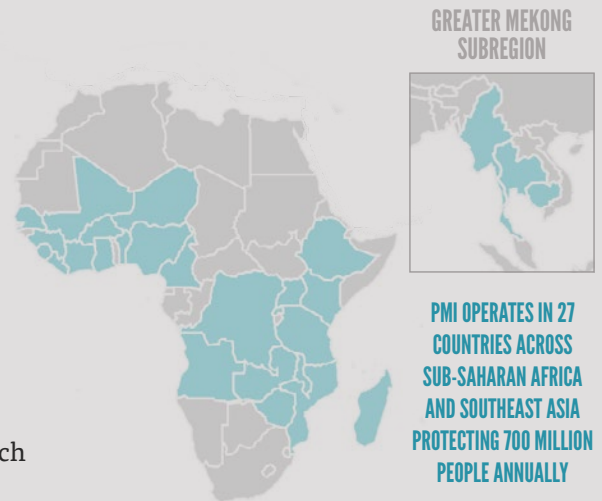
LEVERAGE MALARIA CAPACITY TO SCALE FEVER TESTING

For much of the world, efforts to combat malaria and COVID-19 are already inextricable. COVID-19 shares 7 of 10 primary symptoms with malaria, most notably fever. The malaria platform has mastered “acute infectious disease” response: rapidly diagnosing fevers, providing access to oral treatment, and reporting cases into health information management systems – all within 24 hours of the onset of symptoms. In 2019, frontline health workers tested 267 million fever cases with malaria RDTs and treated 190 million people with quality assured anti-malarial drugs. Malaria prevention efforts removed another quarter billion fevers from the health system in sub-Saharan Africa, “flattening the curve” to maintain critical health capacity during COVID-19. The rural, forested “hot spots” where malaria transmission thrives are also the “blind spots” where zoonotic spillover events are likeliest to occur. Yet, an estimated 40% of fevers in sub-Saharan Africa still go undiagnosed, creating a dangerous risk that outbreaks of COVID-19 and future pathogens with pandemic potential will go undetected.

FIFTEEN YEARS OF INVESTMENTS IN PMI HAVE CREATED CRITICAL CAPACITIES THAT CAN NOW BE LEVERAGED FOR COVID-19 RESPONSE.

Demonstrated PMI capacities include:

- Conducting more than **2 million CHW trainings** to improve differential diagnosis, treatment, delivery of health commodities, and reporting.
- Delivering more than **600 million mRDTs, 715 million malaria treatments, and 500 million nets**, mostly at the primary care level; all of which contribute to removing known fevers from overburdened health facilities, especially nets which have prevented almost **60 percent of malaria cases**.
- Creating a cloud-based data science platform (M-DIVE) that integrates 30 sources of epidemiological, supply chain, climate, and financial data with local health management information systems across **27 PMI partner countries**.
- Supporting **65 lab sites** in sub-Saharan Africa and 36 lab sites across the Greater Mekong Subregion to study and closely monitor genetic markers associated with antimalarial drug resistance and support training and capacity building of country collaborators.
- Deploying more than **1,000 country-based, expert USAID and CDC staff** to provide integrated planning and technical assistance to strengthen supply chains, data collection, surveillance, and quality assurance of health commodities.



The world faces many challenges in mounting an effective COVID-19 response, especially in LMIC settings. Leveraging the PMI and Global Fund infrastructure to solve the frontline fever testing gap for COVID-19 presents a clear and timely opportunity to solve one of the most pressing challenges, especially since expanding frontline testing capacity underpins the success of vaccine and therapy rollout plans in 2022 and beyond.

By making an incremental investment in PMI to strengthen the infrastructure for fever testing and treatment, the U.S. Government can save lives now, demonstrate a clear contribution to global COVID-19 goals, and help to catalyze additional investment in COVID-19 testing and treatment by the rest of the world. No other initiative offers the same reach, expertise, and proven capacity to find and fight fevers at scale as PMI. By building on existing malaria capacities, COVID-19 goals can be accomplished quickly, confidently, and at a fraction of the cost of building these systems and capacities over again.

INVEST IN PMI CAPACITY TO SAVE LIVES NOW AND DELIVER ON GLOBAL COVID-19 TARGETS

To realize this opportunity, an incremental investment of \$329m (\$1.14b in FY23) is needed to strengthen and leverage PMI's frontline fever testing and treatment capacity. These numbers represent identified, costed needs within the PMI program that could be immediately absorbed and put to work on behalf of the U.S. Government and its global partners. They do not account for the incremental cost of procuring COVID-19 antigen tests and therapies, which would require separate funding.

BREAKDOWN OF THE REQUEST FOR AN INCREMENTAL \$329M FOR PMI:

- **Surge frontline capacity for fever testing, treatment and reporting – \$169m**
 - Recruit, retrain, equip, compensate, and deploy 140,000 CHWs (60k existing CHWs and 80k new ones) across 27 existing PMI countries to rapidly strengthen and expand frontline fever testing and treatment for all at-risk populations.
 - This will help address a critical shortage of frontline health workers, which has been exacerbated by COVID-19; the WHO estimates that between 80,000 and 180,000 CHWs died due to COVID-19 between January 2020 and May 2021.⁵
- **Prevent, diagnose, and treat 100m malaria fevers by closing commodity gaps – \$160m**
 - Test and treat an additional 25m malaria fevers by procuring and distributing an additional 21m mRDTs and 26m ACTs to close malaria case management gaps.
 - Prevent 75m fevers annually by funding the distribution of 20m additional life-saving mosquito nets to close net gaps across PMI countries, maintaining critical health system capacity for COVID-19 response.

In addition, the U.S. should fully fund the already stated request to support the Global Fund at \$2b in core funding and consider \$500m in additional resources for continued pandemic response through the C19RM mechanism in the President's FY23 Budget Request.

CATALYZING COMPLEMENTARY COMMITMENTS

By announcing expanded commitments to PMI and the Global Fund in early 2022, the Biden Administration can catalyze, rationalize, and continue to shape the global COVID-19 response with a clear deliverable that will save lives now. Specifically, a White House commitment as part of an upcoming COVID-19 Summit in late March 2022 would create a compelling platform to announce complementary commitments. In the context of Replenishment, the Global Fund is raising new catalytic funds from prominent private sector and philanthropic partners (e.g. Skoll Foundation, Johnson & Johnson, others) to strengthen frontline fever testing and reporting via community health workers and private health networks.

Recognizing the competing demands and capacity constraints the Administration faces, Malaria No More, with our partners at the COVID Collaborative, would be happy to work with the Administration to plan and execute such an announcement, including crystallizing the complementary commitments from partners to make it a success, much as we did at the original White House Summit in December 2006 (15 years ago last month), where Malaria No More was launched.



I BET MY MEDICAL LICENSE THAT FEVER, A PRIMARY SYMPTOM OF MALARIA AND COVID-19, WILL BE THE FIRST SIGN OF THE NEXT PATHOGEN WITH PANDEMIC POTENTIAL. THAT'S WHY WE MUST INVEST IN THE WORLD'S LARGEST DOOR-TO-DOOR FEVER SURVEILLANCE NETWORK."

- DR. RAJ PANJABI
U.S. GLOBAL MALARIA COORDINATOR

⁵ The Impact of COVID-19 on health and care workers: a closer look at deaths: <https://apps.who.int/iris/handle/10665/345300>