Making Country-Led Malaria Control a Reality

Innovating, Financing and Managing Sustainable Transitions

February 2026

FRIENDS OF THE GLOBAL FIGHT

malaria NO MORE

United to BEAT MALARIA

The impact that malaria has is not simply a health crisis or humanitarian crisis. It has deep economic implications.

– U.S. Secretary of State Marco Rubio[1]

Taking steps as simple as providing mosquito nets, clean water and medical treatments saved countless lives and prevented global health crises from spreading… Programs like these deserve the commitment necessary to succeed.

– U.S. Senator John Boozman, Arkansas[2]

The best way that we can show America's values is by being committed and dedicated to helping save the lives of children most of us will never meet in countries most of us have never been to. I'm hopeful about our ability to do that because fighting malaria has long been bipartisan.

– U.S. Senator Chris Coons, Delaware[3]

Africa must no longer be the patient; it must be the architect and advocate of its own health destiny…We are called to build systems that do more than response to crisis.

– Ghanaian President John Dramani Mahama[4]

Eliminating malaria will make Africa and the world a better, safer place for future generations and enable millions of people to reach their full potential.

– Erastus Mwencha, Deputy Chairperson, African Union Commission[5]

Nigeria stands ready to take bold new steps to address the funding gaps threatening our progress. As donor resources flatten. We recognize that domestic solutions are not just an option. They are an imperative…Unless we rethink our approach, diseases will rebound…

– Honorable Amobi Godwin Ogah, Member, House of Representatives, Nigeria and House committee chairman on HIV, TB, and Malaria[6]

When we move fast to scale new tools, prices drop. Lower prices expand access. Expanded access drives greater impact – and with lower prices and less disease, countries can more easily fund and sustain their own responses…This innovation-investment cycle is one of the most powerful levers we have. And the Global Fund partnership is at the heart of it.

– Sherwin Charles, Board Member, Global Fund to Fight AIDS, Tuberculosis and Malaria; and Co-Founder and Chief Executive Officer, Goodbye Malaria[7]

Executive summary

Photo: Gabriella, a young girl from Cameroon, fell ill with malaria and spent four days in the hospital. The Global Fund/Vincent Becker.

Today, the fight against malaria is at a crossroads. The year 2025 was a time of reckoning and realignment.

After decades of remarkable and historic progress, gains have slowed in many regions. What's more, international funding for anti-malaria programs is slowing at the same time the threat from the disease is evolving to become more complicated and fearsome. New challenges to ending malaria include the malaria parasite's growing resistance to some anti-malarial medicines; mutations that help the parasite evade detection by rapid diagnostic tests; and mosquitoes that are becoming increasingly resistant to insecticides. In addition, the *Anopheles stephensi* mosquito, which can live in salt water, flourishes in more urban areas, and often bites during the daytime, has migrated from parts of Asia to Africa. Add to this an increase in community displacement caused by both natural disasters and conflict, which has disrupted both people's ability to prevent malaria and governments' ability to reach these populations, and we are faced with a perfect storm.

But we are not unprepared for this moment.

Thanks to extensive investment from the American people and partners around the world, including robust involvement from the private sector, we have a growing arsenal of powerful and innovative tools to tackle malaria.

The *America First Global Health Strategy* unveiled by the Trump administration in 2025 recommits the U.S. to achieving the globally agreed goals against malaria by 2030. It endorses the vision of reducing global malaria mortality and case incidence by at least 90% (from 2015 levels); eliminating malaria in at least 35 countries; and preventing the reestablishment of the disease in all countries that are malaria-free.[8, 9] The *Strategy* commits to continuing to supply the tools, from rapid tests to bed nets and treatment to vaccines, to help endemic countries attain the ambitious global malaria targets.

These goals require the allocation of the resources necessary to meet them, including from the U.S. government and other donors. At the same time, the *Strategy* emphasizes the need for the governments of endemic countries and their partners to assume financial and administrative leadership in malaria and other health priorities on an accelerated timeline.[10] The *Strategy* envisions a future in which public and private funders in malaria-endemic countries are responsible for their own national efforts to end the disease.

Towards that end, the U.S. Department of State aims to negotiate integrated memoranda of understanding (MOUs) with the governments of over 70 countries over the next few months, to lay out responsibilities and specify who will provide funding, and for what, to achieve the *Strategy's* vision. The MOUs in malaria-endemic countries include U.S. (time-limited) and endemic-country (ongoing) investments in human and institutional capacity and the purchase and distribution of vaccines, bed nets, spatial repellent emitters, sprays, diagnostics, antimalaria medicines and seasonal malaria chemoprevention for children.

Continued strategic U.S. financial and technical support for endemic countries during this transition will determine, to a large extent, the trajectory of the global fight against malaria in this historic moment.

For this trajectory to arc towards ending malaria, the needed transition to country financial and managerial leadership must be measured and tailored to each country's fiscal space and human and institutional capacity. Financial and technical support from the U.S. should mirror each country's needs.

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When data-driven and evidence-based, this approach to a responsible transition could propel us to the future we all want — in which national governments and their partners marshal the domestic human, institutional and financial capacity to lead the effort to protect their own citizens so no one dies from a mosquito bite.

However, if the U.S. government retreats abruptly, or without regard to nuanced local needs, we will undoubtedly see a resurgence of malaria. Throughout this transition, we must maintain robust monitoring to prevent backsliding and corruption and ensure progress continues.

This report outlines principles that can help support a successful implementation of the *America First Global Health Strategy* for malaria:

- We must harness U.S. private-sector dynamism and innovation;
- Increasing access to proven and new malaria-fighting tools is paramount;
- Safeguarding gains is possible while integrating anti-malaria programming with broader health care;
- Monitoring quantifiable outcomes closely and safeguarding the integrity of investments and supply chains is imperative; and
- Success will require protecting vulnerable populations by expanding access to last-mile and marginalized communities – where malaria is most common and where the risk for the next pandemic threat is highest.

And this report outlines three critical pathways towards accelerating global progress and achieving the vision of the *America First Global Health Strategy*:

- **Strengthening human and institutional capacity** in low-and middle-income countries (LMICs) to deliver, manage and lead malaria programming by leveraging innovation;
- **Unlocking the domestic financial capacity** for LMICs to pay for their own malaria programming; and
- **Facilitating global partnerships and country-level accountability and transparency mechanisms** to support this shift.

With these principles and pathways front of mind, the U.S. government and its partners can navigate a successful transition that brings about the end of malaria.

National leaders in LMICs must meet this moment. Politicians, the private sector and civil society must band together to manage this challenging period at a pace and with approaches that are realistic for each country to achieve greater progress against malaria and stamp out any possibility of resurgence.

The case studies included in this report – El Salvador, Indonesia, Mozambique, Nigeria and Tanzania – illustrate how each country's journey to national financial and technical country ownership is unique. They also highlight opportunities for how catalytic investments from the American people, philanthropic donors and the private sector can accelerate the elimination of malaria.

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Photo: A teenage girl at a boarding school in Karongi district in Rwanda with her mosquito net. The Global Fund/Vincent Becker.

Opportunities

Recommitment to fighting malaria in the America First Global Health Strategy

Powerful innovations from U.S. scientists, including spatial repellent emanators, malaria vaccines, highly impactful seasonal chemoprevention drugs and next-generation, dual-active-ingredient long-lasting insecticide-treated mosquito nets

Innovative financing, including debt-to-health swaps, blended finance and catalytic investments

Faith-based and community partnerships

Integrated health systems can help enhance disease surveillance and control and increase programmatic impact

Challenges

Reduced international funding

Resistance to some anti-malarial medicines

Mutations that help the parasite evade detection by rapid diagnostic tests

Increased resistance to insecticides

Debt burdens

Global crises and instability

Status of the global malaria response and programming funded by the U.S. government

For thousands of years, the animal posing the greatest danger to humans has not been lions or poisonous snakes or even sharks, but the tiny female *Anopheles* mosquito.[11] Weighing just 0.00007 of an ounce, this insect can, when infected with the *Plasmodium* parasite, pass malaria to a human in a single, deadly bite.[12]

This danger was part of daily life in much of the U.S. for the first 170 years of our nation's history. Before the U.S. government successfully waged its groundbreaking domestic malaria-elimination campaign, draining mosquito breeding grounds and spraying homes from North Dakota to Florida[13], at least seven U.S. presidents contracted malaria on U.S. soil, including George Washington, Abraham Lincoln, Andrew Jackson and Ulysses S. Grant.[14]

Once we eliminated malaria from the U.S. after World War II, the generosity of the American people and the ingenuity of American businesses turned towards ending malaria around the world.

Towards that end, U.S. President George Bush made the first public-sector pledge to the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) in 2001, and the U.S. government has been the Global Fund's largest donor and guiding influence ever since. Thereafter, Bush launched The President's Malaria Initiative (PMI) in 2005 to accelerate the elimination of malaria in 15 high-burden countries. PMI eventually expanded to support the elimination of malaria in 27 of the most endemic countries and in the greater Mekong subregion of Asia.[15] PMI and the Global Fund have coordinated closely throughout.

Leveraging Innovation

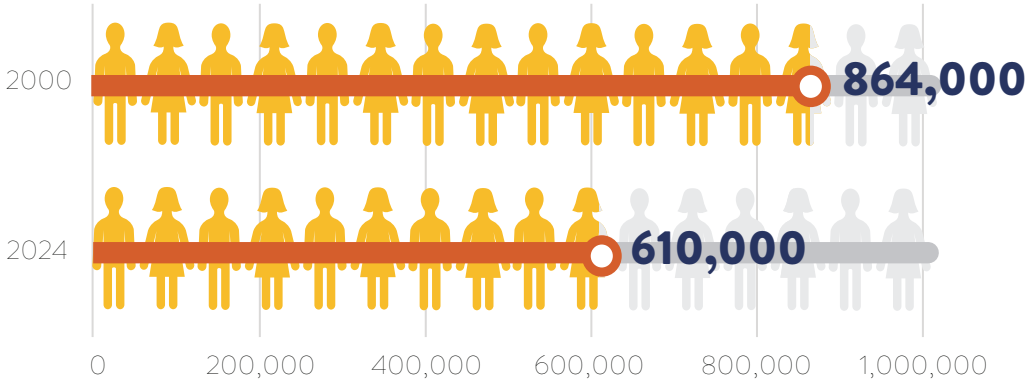
These generous investments from the American people created unprecedented demand and a marketplace for antimalarial innovations. U.S. researchers and private-sector companies have led this charge. Their game-changing breakthroughs include:

- BASF, with headquarters in North Carolina and New Jersey and manufacturing facilities in Texas and Louisiana, developed the first-in-class dual-active ingredient bed net: the Interceptor G2.[16] With financial and technical support from U.S. taxpayers through PMI and the Global Fund, this bed net is helping overcome insecticide resistance and is an indispensable tool in the fight against malaria.[17]
- SC Johnson of Wisconsin invented the revolutionary Guardian and Mosquito Shield spatial mosquito repellents, with Guardian recently receiving U.S. Environmental Protection Agency registration.[18]
- Envu, of Cary, North Carolina, produces Fludora Fusion, the first anti-malarial indoor residual spray that combines two powerful chemicals to kill and repel mosquitoes, already used in 25 countries.[19]
- Illinois-based Abbott makes BinaxNOW Malaria, the first rapid malaria diagnostic blood test approved for use in the U.S.. [20]
- GlaxoSmithKline, with its U.S. headquarters in Philadelphia, partnered with 60 Degrees Pharmaceuticals and the Department of Defense on a new antimalarial cure, tafenoquine.
- GlaxoSmithKline also recently worked with the U.S. Army's Walter Reed Army Institute of Research to develop the world's first malaria vaccine,[21] and Maryland-based Novavax developed the second, R21/Matrix-M.[22]
- The two approved malaria vaccines are particularly effective when combined with seasonal malaria chemoprevention, an approach capable of reducing malaria cases by about 75%. They have already reduced childhood malaria deaths by an average of 13% across Ghana, Kenya and Malawi.[23]

Through investments from U.S. taxpayers, PMI and the Global Fund have brought more than private-sector innovation to the table: they have also drawn from our country's unrivaled public health expertise and administrative capacity. They have elevated the fight against malaria from a country-by-country effort to an effective, coordinated global response that:

- Procures supplies at scale, saving precious funding;
- Delivers supplies at scale, even in areas without functioning governments;
- Reaches vulnerable or remote communities that might not otherwise trust health leaders; and
- Fosters cross-border collaboration on regional malaria hotspots.

Annual deaths from malaria

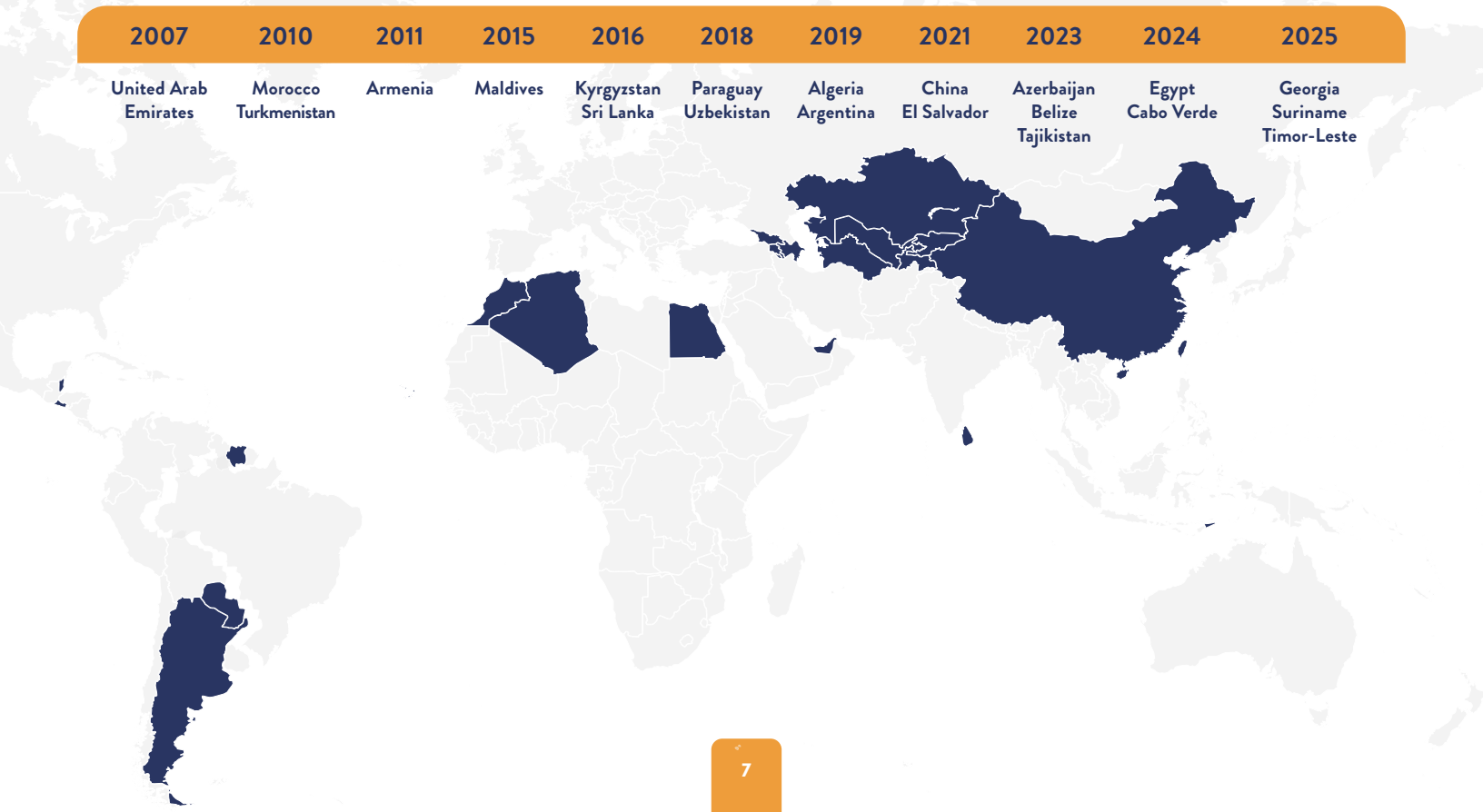


These investments by the American people and the U.S. private sector over the last quarter century have expanded the toolbox used to fight malaria and broadened access to those tools dramatically – many of which have worked effectively against other mosquito-borne diseases such as dengue.

Reaching families in remote areas with the preventive, diagnostic and treatment tools at the necessary speed is a tremendous undertaking. Nonetheless, U.S. public and private investments against malaria have helped determined health and community leaders around the world make tremendous progress.

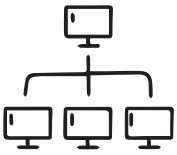
Over the last quarter century, U.S.-supported and -financed innovation and partnerships have helped 21 countries eliminate malaria[24], prevented an estimated 2.3 billion malaria cases and saved 14 million lives since 2000 alone.[25] Indeed, annual deaths from malaria, globally, have fallen from 864,000 to 610,000 from 2000 to 2024.[26] Health ministries are reporting that hospital wards and clinics formerly packed with malaria cases are now seeing less overcrowding and demand, freeing up limited essential resources and capacity to address other pressing matters.[27]

Countries that have eliminated malaria since 2000



Innovations profiled in country case studies – pages 19-25

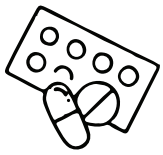
El Salvador



Information systems

The "**Integrated Health System Alert** or *Alerta SIS*": an electronic surveillance and reporting system (algorithm-based) for malaria and other vector-borne diseases.

Indonesia



New medicines

"**Tafenoquine + G6PD testing**": evaluating a radical cure for *P. vivax* elimination in military staff deployed in malaria endemic areas.

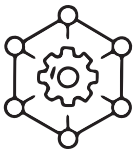
HRP-2/pIDH rapid diagnostic tests: dual use to detect both *P. falciparum* and *P. vivax*.

Mozambique

New technologies

New generation of technologies countering resistance, including **AI-powered drone technology**, with a focus on identifying and treating mosquito breeding sites.

Nigeria



Expanded toolkit

A new malaria vaccine, **R21/Matrix-M**, in combination with bed nets (**Interceptor G2 & PermaNet Dual**), indoor residual spraying (IRS) and seasonal malaria chemoprevention (SMC) to protect young children from malaria.

Tanzania

Genetic innovation

Gene-drive mosquitoes: first country in Africa to engineer mosquitoes that carry molecules that stop *P. falciparum* parasite from developing.

The threat malaria still poses

Malaria is a particularly cruel disease – its preferred target is pregnant women and young children. In the year 2000, which serves as our baseline in this report, an estimated 864,000 people died from malaria.[28] Of this number, at least 723,000 were children under five years old.[29] Of the millions of pregnant women who contracted malaria that year and nevertheless survived, many became anemic and gave birth prematurely to sick or underweight children.[30]

But even these figures don't demonstrate the disease's full impact, especially in Africa, home to 94% of all malaria cases.[31] Just 11 African countries bear about two-thirds of the world's malaria burden,[32] a majority of them low-income.[33] Nine of the 11 are experiencing significant civil conflicts that displace large numbers of people and weaken health care. In this report, we will discuss more in depth three of those 11 countries – Nigeria, Mozambique and Tanzania.

The sad reality is that most rural African children do not just experience malaria once. In fact, researchers who conducted a longitudinal study from 1990 to 2015 of the health of villagers in rural Senegal found that young children sometimes suffered more than 100 bouts of malaria by their 10th birthday, reporting, "During the first years of life, for many children malaria was an endless history of fever episodes."[34]

[A] lapse in our anti-malaria efforts could erase all of the progress we have made and cause 990,000 additional deaths, including 750,000 children under five, while wiping $83 billion from Africa's Gross Domestic Product (GDP) by 2030.

Senegal is not unique. Physicians in rural Malawi have estimated that, before the arrival of the malaria vaccine, children in some areas of the country contracted the disease eight to ten times each year. And each time, the child needs to be treated as soon as possible – ideally within 24 hours of first experiencing symptoms – to minimize the risk that the infection becomes life-threatening.[35]

The malaria threat itself is also evolving, as the *Anopheles* mosquito morphs into a more lethal and unpredictable foe. It has developed resistance to powerful insecticides used for decades, which means manufacturers must use more and more-expensive active ingredients to keep insecticide-treated bed nets effective.[36] In addition, *Anopheles stephensi*, a malaria-carrying mosquito originally from South Asia, has gained a foothold on the African continent and is spreading quickly. This mosquito thrives in urban areas, withstands dry seasons and is resistant to many insecticides, which puts another 100 million people at risk of malaria.[37]

In parts of Africa, the malaria parasite itself has developed partial resistance to the most-common drug used in treatment, artemisinin. Other mutations by the parasite are helping it better evade detection by rapid diagnostic tests.[38]

History tells us that malaria will exploit any political, environmental and financial change to push back and regain a toehold in areas where it was previously well-controlled or eliminated. For example, in the 1960s when Sri Lanka reduced its domestic malaria funding, cases surged 300% within five years, requiring ten times the original investment to regain control of the disease.[39]

Modeling by Management Sciences for Health and the Malaria Atlas Project shows that a lapse in our anti-malaria efforts could erase all of the progress we have made and cause 990,000 additional deaths, including 750,000 children under five, while wiping $83 billion from Africa's Gross Domestic Product (GDP) by 2030.[40] Conversely, getting back on track towards the agreed global targets for 2030 (which the *America First Global Health Strategy* reaffirms) would see African countries gain a collective $230 billion in GDP by that date.[41]

We cannot allow malaria to use this transition to gain momentum.

The need to mobilize more domestic resources in affected countries

The need for higher-cost, next-generation tools adds financial pressure on lower- and lower-middle-income endemic countries at a time when affording such an expense requires difficult choices. Many leaders of such countries have already committed limited public resources towards supporting anti-malaria programming, but face a hard ceiling imposed by debt-repayment obligations that are swallowing ever larger portions of government accounts.

According to the International Monetary Fund (IMF), more than 20 African countries are now at high risk of debt distress, as repayments consume a significant share of government revenues.[42] African countries, on average, now spend more *per capita* on interest ($70) than on education ($63) or public health ($44).[43] For example, in Malawi, debt repayment consumes nearly half of government revenue. At the same time, official development assistance for health in Africa has fallen by 70% in just four years,[44] as documented in a recent report from Friends of the Global Fight, ONE and Results.[45]

Likewise, extreme weather, natural disasters and conflict, which are on the rise, also force displacement and migration that drain governments' ability to respond to malaria and damage clinics and hospitals, and the roads and bridges required to reach them. Flood waters have led to malaria surges from Mozambique[46] to Pakistan.[47] But these storms need not derail our progress, as Mozambique's creative use of mobile health teams during natural disasters demonstrates.[48]

Despite these challenges, endemic countries have mobilized significant domestic resources to fight malaria. Over the past two decades, malaria spending per person at risk has increased by 142% in malaria-endemic countries, a significant portion of which is domestic.[49] This is a significant expansion, given that Africa has doubled in population during that period.[50] Today, the governments of malaria-endemic countries contribute more than a third of total funding for anti-malaria programs, a figure that exceeded $1.5 billion in 2022.[51]

Photo: Men arrange bales of mosquito nets for distribution at a hospital in Kenya. The nets are part of a Long-Lasting Insecticidal Nets (LLINs) campaign to combat malaria in the community. The Global Fund/Brian Otieno.

During the transition to national responsibility, malaria-endemic countries must continue to have access to the powerful anti-malaria toolbox we have developed over the last two decades. This arsenal includes:

- Two new malaria vaccines developed by U.S. researchers being introduced into routine child immunization across Africa[52], which provide about 75% protection if used with other preventive tools, such as bed nets or spatial mosquito repellents[53];
- Highly impactful seasonal chemoprevention drugs, taken monthly during the high-transmission rainy session to protect children from malaria;
- Next-generation, dual-active-ingredient long-lasting insecticide-treated mosquito nets, which reduce infections in children under 10 by almost half compared to standard nets[54]; and
- Small spatial mosquito repellents hung on a home's wall that are effective for up to one year.[55]

The resources the American people have committed to the fight against malaria have helped recruit a variety of effective partners whom the governments of endemic countries should continue to leverage during and after this transition. Especially important are the civil-society and faith-based organizations involved in service-delivery and behavior change in endemic communities, as well as the private sector.

How a responsible, sustainable transition in the fight against malaria is a strategic U.S. imperative

The United States has a compelling national interest in eliminating malaria—one that extends far beyond humanitarian concerns to encompass our own economic competitiveness, health security and geopolitical advantage. Indeed, ending malaria aligns with the goal of the recently released *America First Global Health Strategy* to deploy U.S. taxpayer funding as "a strategic mechanism to further our bilateral interests around the world."[56]

America's first line of defense: protecting the homeland

What is perhaps less often understood is how U.S. investments in combating malaria, when integrated into national health networks, have improved our own health security[57] – especially with regard to pandemic preparedness. Malaria is just one mosquito-borne disease, albeit the deadliest. The infrastructure built around the world to fight malaria serves as America's early-warning system against emerging infectious diseases, including the full range of other mosquito-borne diseases, such as dengue and Zika.[58] Over the last two decades, the investments the American people and partners have made in building and strengthening fever-testing and disease-detection systems — designed to quickly identify cases of malaria — have made health surveillance networks increasingly capable of monitoring outbreaks of illness in even the most remote, vulnerable communities across much of the world in real time.

The scale of what the U.S. government and its partners have established thus far is remarkable. In 2019 alone, frontline health workers in malaria-prone regions tested 267 million fever cases, diagnosed 190 million of those cases as malaria and identified hundreds more as outbreaks of alarming infectious diseases, including Ebola, mpox and highly infectious strains of influenza.[59] In 2024, frontline health workers on the African continent caught more than 100 outbreaks of suspicious illnesses that could pose pandemic threats.[60] Each of these tests demonstrates the payoff of our investments – health networks that are able to mobilize the diagnostic equipment, staffing and other resources to identify and respond to dangerous health risks. For example, Kenya's efforts to develop a subnational tailored strategy to end malaria prompted the government to develop the country's first health management information system.[61] This system has connected – for the first time – the nation's far-flung clinics and providers to a single health information and surveillance network that can track dangerous outbreaks more precisely and makes health care more resilient and more responsive to communities' needs.

The infrastructure built around the world to fight malaria serves as America's early-warning system against emerging infectious diseases.

Closer to home, consider the robust network the U.S. government helped El Salvador develop – with 3,000 volunteer health workers, decentralized diagnostics and robust surveillance systems that now safeguard against multiple health threats and also have cut child mortality in half. See our El Salvador case study on page 20 for more details.

The experiences in El Salvador and Kenya, and similar ones in Ethiopia and beyond, illustrate how our investments in malaria have built health networks that stand sentinel against all threats, from AIDS to Zika, and will continue to do so long after the current transition. These systems that help detect possible outbreaks of Ebola, Marburg and other diseases before they reach American shores must continue to operate to keep Americans and its allies safe.

The threat is real, illustrated by recent reports of domestically acquired malaria in the U.S. [62,63] The disease is constantly testing our defenses. Between May and December 2023, ten Americans across Florida, Texas, Maryland and Arkansas contracted malaria from local mosquito bites.[64] In 2025, at least one Washington State resident was infected locally.[65] And every year about 2,000 Americans are diagnosed with malaria after travelling to an endemic country—military personnel, businesspeople, students and tourists. Five to ten of those cases prove fatal.[66] The U.S. government maintains troop presences in malaria-endemic countries, where the disease makes a military troop readiness challenge – which is why the U.S. Department of Defense has been a leader in malaria innovation since the 1970s.[67]

With every country that eliminates malaria, every American grows safer.

The economic case: unlocking a $4 trillion opportunity

Malaria functions as a massive tax on sub-Saharan Africa's economies. The disease causes four to 10 million lost school days[68] and half a billion lost workdays each year, reducing GDP growth by up to 1.3% per capita annually. That is an annual loss of $12 billion in GDP on the continent.[69]

Historically, every dollar of U.S. malaria funding generates $5.80 in African economic returns, creating $90.3 billion in GDP growth since 2003.[70]

The recent report of Malaria No More and the Corporate Council on Africa, "Malaria Economics: The $4 Trillion Business Opportunity," notes that if we reach the global malaria targets by 2030, 26 high-burden countries could collectively gain $152 billion in GDP.[71]

This economic expansion will benefit American businesses directly: achieving global malaria reduction targets by 2030 would increase international trade by $80.7 billion and produce an additional $1.5 billion in U.S. exports to endemic countries.[72]

U.S. companies operating in Africa have witnessed how much malaria can eat away at their bottom line. With their own funds, they have implemented malaria programs that have delivered a 28% return on investment through reduced healthcare costs, increased productivity and lower absenteeism.[73]

Chevron, for example, reported 1,000 lost workdays annually from malaria in Angola prior to 2004—costs that were largely eliminated through comprehensive malaria programs.[74]

On Bioko Island in Equatorial Guinea, Chevron and partners supported an ambitious program that reduced the malaria mortality rate by 78% and decreased the overall prevalence of the disease by 75%.[75] And across three locations in Nigeria, Chevron's approximately 4,800 workers went through about 5,200 malaria tests in just the first nine months of 2025.[76] In-house medical teams were able to manage approximately 700 positive tests during this period proactively through onsite medical clinics and personnel.[77]

Other energy and extractive industry partners also experience impacts from malaria and support local elimination project plans/goals.

Systems that help detect possible outbreaks of Ebola, Marburg and other diseases before they reach American shores must continue to operate to keep Americans and its allies safe.

Photo: Image courtesy of SC Johnson.

According to ExxonMobil's figures, the company and its foundation have spent more than $170 million in grants from 2000 through 2020 to support partner-led efforts to distribute 15 million bed nets, 5.6 million doses of antimalarial drugs and more than 4 million rapid diagnostic kits.[78]

Reducing risks from malaria in Ghana became a mission-critical goal for AngloGold Ashanti, a global gold producer with headquarters in the U.S. In 2004, the company's medical teams saw 6,800 malaria patients per month at its mine hospital in Ghana, out of a total workforce of 8,000.[79] AngloGold Ashanti estimated that the disease was costing it $2.2 million a year, with about $55,000 spent each month on treatment alone.[80]

A growing market for U.S. health innovations

U.S. companies have been leaders in developing innovative tools to prevent, diagnose and treat malaria around the world. Those investments have spurred dynamic progress by leading businesses.

A prime example is S.C. Johnson, which has more than 500 employees – not including those involved in manufacturing – who are working on innovation in malaria. It has built the world's largest urban entomology center in Wisconsin to test and develop new products.[81] The company's most recent revolutionary breakthrough – a spatial insect repellent – wards off many types of disease-carrying mosquitos – meaning it can be deployed against species that carry a range of diseases, from dengue to Zika.[82] SC Johnson expects to deploy hundreds of millions of spatial repellents around the globe, facilitated by broad pooled procurement by the Global Fund, the U.S. government and/or others.[83] "SC Johnson's spatial repellents are distributed at no profit to the company," for use in LMICs, said Thomas C. Putzer, who leads the Healthier World Group at SC Johnson. "Still, this research makes us more profitable as a company."[84]

The research required to develop the spatial unit, which is simply hung in people's homes, has produced spin-off products Americans can use in their own backyards – such as a product that clips on to clothes and repels mosquitos.[85]

Africa: the market of tomorrow

By 2050, one quarter of the world's population—and the world's youngest, fastest-growing consumer base—will live in Africa. The continent is home to 12 of the world's top 20 fastest-growing economies.[86] Ending malaria makes this massive market more stable, productive and investable for American businesses. Conversely, the rapid growth in the number of African children under age 5, who are most vulnerable to malaria, reinforces the need to sustain progress.

At a time when China is aggressively expanding its African footprint, U.S. leadership and the good will built through decades of partnership in malaria elimination strengthens diplomatic relationships and positions America as the partner of choice for African governments and businesses. If China is left to promote its health presence, commodities and standards-setting in Africa, both the local populations and the U.S. will lose out.

Critical and strategic minerals

The U.S. is dependent on many malaria-endemic countries as key sources of strategic and critical minerals, such as the bauxite found in Guinea and the cobalt found in Congo – both of which are used in the aerospace sector – and rare earth elements used in high-tech magnets and found in Tanzania.[87] Indonesia has the largest deposits of known reserves of nickel and is the world's largest producer of nickel – widely used in battery production.[88] These resources are essential for modern technologies and our nation's economic and national security. U.S. investments in ending malaria in these regions make the supply chains for these critical minerals less vulnerable to disruption. They help make these countries more stable, and closer partners to the U.S. politically and economically.

The bottom line

Malaria elimination represents one of the highest-return investments in American foreign and economic policy—simultaneously advancing our health security, economic competitiveness and strategic influence.

During the current transition, all of the gains made over the last quarter century by $15 billion investments in malaria elimination are on the line.[89] If the U.S. government and its partners were to fail to manage the transition of responsibility and funding carefully, tailored to the affected LMICs, all of our gains could be lost when malaria comes raging back.

How to accelerate progress on malaria under the *America First Global Health Strategy*

To shift leadership and financial and administrative ownership of the fight against malaria to governments and their partners in endemic countries responsibly and intentionally on an accelerated timeline, we must address three key hurdles: strengthening national human and institutional capacity, unlocking domestic financial capacity and facilitating global cooperation and improving accountability and transparency mechanisms.

Strengthening national human and institutional capacity to enable sustainable transitions in endemic countries

Malaria-endemic countries frequently have weak health institutions that lack the required numbers of trained staff, extensive infrastructure or data systems needed to develop, deliver and monitor highly time-sensitive (often seasonal) programming to prevent and treat malaria.

Over the last quarter century, PMI and the Global Fund have taken a strategic approach to helping to solve this problem, by strengthening existing government and non-profit health institutions, clinics and hospitals; leveraging powerful private-sector innovations; and seeking to integrate malaria programming better into broader health care. In addition, U.S. investments in the training and establishment of cohorts of community health workers (CHWs), who lead prevention, diagnosis and treatment at the household level in rural communities, have been essential.

The work by PMI and the Global Fund in Liberia is a case study. Following two civil wars and an Ebola epidemic that killed 8% of local health workers[90], only one-third of the country's health facilities were still functional[91], leaving many Liberians without access to even the most basic healthcare. Recognizing the danger, PMI and the Global Fund helped finance the country's launch of a CHW program that finally connected the country's mostly rural population with public and faith-based hospitals and clinics and served as an early-warning system for health emergencies, such as a return of Ebola. The Liberian government, PMI and the Global Fund came together to fund shares of the CHWs' salaries.[92]

If the U.S. government and its partners were to fail to manage the transition of responsibility and funding carefully… all of our gains could be lost when malaria comes raging back.

Today, more than 5,000 CHWs – recruited, trained, equipped and supervised by the Liberian government – provide life-saving primary care to more than one million of their fellow citizens.[93] Treatment for malaria has increased by over 40% – but so has treatment for pneumonia and diarrhea (curable diseases that previously went untreated), and the proportion of Liberian women using skilled birth attendants has increased from 55% to 90%.[94]

Likewise, the Tanzanian government has invested in building a self-sustaining army of local malaria fighters – from entomologists who are engineering gene-drive mosquitoes to data scientists and CHWs. See our Tanzania case study on page 25 for more information.

These examples demonstrate that LMICs can, over time, build the robust domestic expertise necessary to assume national ownership. Liberia shows what kind of systemic improvements further time-bound, community-level U.S. investments in ending malaria can deliver, the prerequisite of successful transition to financial, technical and managerial leadership in malaria-endemic countries. The *America First Global Health Strategy* recognizes this reality by calling out the need to support more than 3.8 million CHWs as part of its vision[95].

Unlocking national financial capacity in endemic countries

Successfully transitioning to national financial, technical and administrative leadership in endemic countries requires governments and their partners in the private sector and civil society to lead not only programming and delivery but also financing, including prioritizing malaria within national budgets and increasing domestic financing as U.S. support evolves.[96,97]

Several governments have taken concrete steps to increase domestic health and malaria financing despite these constraints. For example, Nigeria's National Assembly approved an additional $200 million in domestic health funding in the 2025 national budget to help offset cuts in U.S. aid and support vaccines and epidemic disease treatment, including malaria control.[98] Similarly, Ethiopia's parliament introduced a new tax on wages for a new Disaster Risk Response Fund in part financing projects and essential health services previously supported by U.S. assistance.[99]

A growing variety of models can catalyze a financial reset, many of them outlined in a recent report, Expanding Global Health Finance.[100] These include the following:

(1) Building capacity within key institutions and stakeholders to attract and combine a broader array of funding sources;
(2) Taking steps to derisk investments in global health and to create markets that are conducive to new capital; and
(3) Linking debt relief and restructuring for LMICs with increased investments in health.

One key incentivizing device is the debt swap, in which a debtor government pays back a creditor, but the creditor agrees to provide the same amount of funds back for health programs. The Global Fund has extensive experience with this approach, having brokered 11 debt-to-health swaps that generated $330 million in health investments.[101]

Successfully transitioning requires more than just the U.S. and endemic-country governments at the table. The IMF and World Bank, whose loan conditionalities often require governments to freeze their public-sector wages or downsize the civil service, will need to allow ministries of health to hire the CHWs or nurses required to lead and manage the fight against malaria.[102]

Our Indonesia case study examines how the largest Debt2Health swap to date, between the governments of Indonesia and Germany, strengthened Indonesia's anti-malaria programs, cooperation with Papua New Guinea on cross-border elimination efforts and ultimately positioned Indonesia to significantly increase their pledge as a Global Fund donor. For more information on Indonesia, see the full case study on page 21.

Photo: An indigenous community health worker and microscopist examines blood smear samples for signs of the malaria parasite in Palawan, Philippines. The Global Fund/ Vincent Becker.

The path forward likely lies in a catalytic approach to health financing in which donors' strategic (even if diminished) grant money is blended with development bank loans or grants and spending from national budgets, all of which can derisk commercial investments from the private sector.

Facilitating global partnerships and improving accountability and transparency mechanisms

Strengthening accountability and transparency mechanisms into U.S. international assistance, including to eliminate malaria, will help us end inefficiencies, waste and dependency in our current approach. As the *America First Global Health Strategy* emphasizes, unified, reliable and essential health-data systems will be key.[103]

These data and oversight systems must encompass both public and private health delivery, as well as faith-based programming. Consider that in Nigeria, private providers deliver 60% to 70% of medical care and pharmaceutical services.[104,105] In Eswatini, faith-based facilities deliver more than 50% of medical care and in Uganda that figure is more than 40%.[106] Visibility into both public and private healthcare is critical to effectively monitor malaria, where it is surging and how country partners are responding.

Today, government data systems in sub-Sahara Africa include no elements of non-public care, making data-driven, evidence-based decision making very difficult. To make the most of U.S. taxpayers' generosity and strengthen accountability, transparency and impact, these data should be centralized and publicly accessible. Reliable data will make it feasible to pursue transition with more accountable certainty that malaria will not resurge.

Our Nigeria case study demonstrates how the private sector can align with the public sector to strengthen national capacity and accelerate progress. By integrating over 1,000 private providers into government disease surveillance and standardizing and incentivizing the use of protocols for the quality of care, Nigeria is harnessing untapped private-sector and faith-based strengths and infrastructure to expand access, improve data and pay only for verified health outcomes.[107] See the case study on page 23-24 for more information.

Supply chains for products to combat malaria have been susceptible to abuse as found in reports issued by the Inspectors General of the former U.S. Agency for International Development and the Global Fund.[108,109] The U.S. and national governments and their partners, including in the private sector, must continue to work together to prevent waste and fraud in malaria-elimination programs. This includes ensuring the proper use of bed nets and anti-malarial medicines and ending the distribution of counterfeit and substandard drugs.

Nothing threatens public support for investments against malaria by taxpayers in both the U.S. and endemic countries more than corruption and crime. National supreme audit institutions, parliamentary committees, the Global Fund's Local Fund Agents, third-party monitors and community watchdogs all have to be part of an integrated system of oversight that gives funders and beneficiaries the confidence that we are collectively funding the right interventions in the right places and having a real impact.

To create mutual accountability, all of the above should be explicit parts of the bilateral agreements between the U.S. and malaria-endemic governments and their subsequent implementation plans. These tailor-made multi-year bilateral agreements cover both financial contributions and program benchmarks. They must include meaningful metrics as well as key performance indicators and mechanisms for tracking and verifying country-led progress and the integrity of programs. For example, they could follow an outcome-based financing model in which the U.S. government establishes a rate card that outlines how much is paid for each fever tested, treated and digitally reported, an approach that has delivered significant cost savings in some contexts.

The bilateral agreements also should offer pathways to leverage both faith communities and the private sector as advocates, implementers, partners and key monitors of metrics and progress.

Our case study on Mozambique illuminates how faith communities can build the human and institutional capacity necessary for national leadership. See the Mozambique case study on page 22 for more details.

Lastly, these bilateral agreements should leverage the expertise of the Global Fund across procurement and as catalyst of the multistakeholder national or regional cooperation required to reach last-mile communities and vulnerable groups. Government activities alone will not achieve the scale and coordination necessary to contain the cross-border spread of malaria by mosquitos and humans.

Conclusion: a moment of renewal

Over the last two decades in the fight against malaria, we have learned a great deal about how to effectively eliminate the disease. If the U.S. wants to ensure that we neither abandon our partners nor waste the time and treasure Americans already have spent to achieve progress thus far, we must embrace a coordinated transition that can allow millions to survive and thrive worldwide and build a bridge to a healthier, safer, more secure United States.

Our case studies each demonstrate how breakthroughs made possible by the generosity of the American people and the brilliance of the U.S. private sector over the last 25 years allow leaders in endemic countries to take financial, technical and managerial ownership of the fight against malaria.

The *America First Global Health Strategy* aims to "prioritize the interests of Americans and make America safer, stronger and more prosperous… save millions of lives around the world and assist foreign countries in developing resilient and durable health systems."

To ensure that we neither abandon our partners nor waste the time and treasure Americans already have spent to achieve progress thus far, we must embrace a coordinated transition that can allow millions to survive and thrive worldwide and build a bridge to a healthier, safer, more secure United States.

As we transition to a new phase in the fight against malaria, one that prioritizes sustainability and vests leadership of, and responsibility for, the fight against malaria in the governments, private sector and civil society in affected countries, we must proceed in lockstep with affected communities. We must ensure that a measured and intentional transition away from direct U.S. government anti-malaria assistance is matched with concomitant growth in partner countries' (1) national human and institutional capacity; (2) domestic budgetary resources and other streams of financing; and, (3) partnerships and accountability and transparency mechanisms.

This requires ensuring bilateral compacts that reflect each endemic country's unique needs, strengths and weaknesses. Where health networks are still weak, the U.S. government and its partners must take coordinated steps to strengthen them. *Where human and institutional capacity is limited*, the U.S. government and its partners can support efforts to strengthen that domestic capacity sustainably. *Where funding is insufficient*, the U.S. government and private sector can incentivize domestic government spending and craft innovative and blended results-based financing and debt swaps to boost great access to care and bring down costs. And *where data and accountability and transparency mechanisms are needed*, U.S. investment and diplomacy can propel them—a necessary precondition for any bilateral agreement to ensure maximum impact. Ignoring these challenges risks a resurgence of malaria that will affect U.S. national security and economic interests, as well as U.S. citizens at home and around the world.

Photo: Members of an indoor residual spraying team in Boane, Mozambique.The Global Fund/Tommy Trenchard.

We know that achieving global malaria reduction targets by 2030 would increase international trade by $80.7 billion and produce an additional $1.5 billion in U.S. exports to endemic countries.[110] That growth can stabilize and catalyze low-income economies and make both endemic countries and Americans safer from malaria and other health threats.

The potential for a wave of endemic countries to eliminate malaria and achieve a sustainable transition to assuming financial, technical and administrative leadership is real. A well-managed, measured, country-tailored approach in U.S. foreign and health policy is crucial to bring malaria to heel successfully and foster a transition that is durable. It will be indispensable to tap U.S.-led innovation fully while we responsibly and collaboratively wind down U.S. government funding as national budgets absorb the costs of fighting malaria. The success of this transition also depends on national governments' capacity and will to reach all vulnerable populations, especially in fragile and rapidly changing situations. The transition process must rely on the Global Fund, the private sector and faith communities as vital partners in sustaining and protecting progress. Careful attention to all of these elements is essential to sustain progress in eradicating malaria worldwide during a shift to country-level ownership and funding.

The potential for a wave of endemic countries to eliminate malaria and achieve a sustainable transition to assuming financial, technical and administrative leadership is real.

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Annex: case studies

Summary of key factors in each malaria response

El Salvador

Community health workers

Health infrastructure and decentralized labs

Disease surveillance system

Regional cooperation

Progress in armed conflicts

Indonesia

Community health centers and workers

Regional cooperation

Debt relief and innovative finance

Transition from aid, emerging health donor/leader

Mozambique

Faith-based leaders and organizations:

- Advocates and monitors of access to care
- Trusted voices in communities
- Implementers and volunteers in malaria response

Progress in armed conflicts

Nigeria

High malaria burden, undermining economy

Private sector role:

- Health infrastructure and care delivery
- Innovations on data to integrate with public sector
- Innovations to ensure quality care
- Results- and outcomes-based

Tanzania

Building human capacity in:

- Community health workers
- Research, information technology, diagnostics
- Science making mosquitoes safer

Domestic innovation

Beyond malaria-free: how El Salvador's health system transformation continues to protect lives

El Salvador didn't just eliminate malaria—it built a resilient health infrastructure with 3,000 volunteer health workers, decentralized diagnostics and robust disease-surveillance systems that now safeguard against multiple health threats and have cut child mortality in half.[111] It made progress despite conflict periods and by cooperating regionally.

In February 2021, El Salvador became the first Central American country certified malaria-free by the World Health Organization, culminating more than seven decades of work.[112] The achievement represented not just the elimination of a disease, but a transformation of the country's entire health infrastructure[113]—one that continues to benefit Salvadorans and the United States, given security cooperation, travel and migration.

The country's vector-control measures started in the 1940s with the draining of swamps and the application of indoor residual spraying in high-risk areas.[114] This program later expanded to include the application of larvicides to mosquito-breeding sites and the distribution of insecticide-treated bed nets to vulnerable populations.

These efforts began to gain traction when the Salvadoran government trained 3,000 volunteer health workers to diagnose and treat malaria and established decentralized laboratory systems that allowed for quick diagnosis. As a result, by 1992, volunteer health workers took 64% of all blood slides examined in the country and were responsible for detecting 90% of all malaria cases.[115]

These volunteer health workers are credited with helping accelerate progress towards the country's health goals far beyond malaria, including helping the country cut under age five mortality by half between 2000 and 2013.[116] Interestingly, many of El Salvador's volunteer health workers today are the children of the country's first volunteer cohort—the position of authority in the community having been passed down to them.

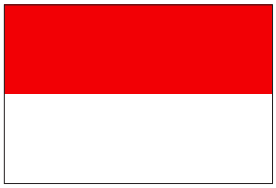
Their data fed into a robust surveillance system, developed with the support of the American people through PMI and the Global Fund, that captured every malaria case to support the Ministry of Health's decision-making on a weekly basis.[117]

By 2010, cases had reached historic lows. To make the final push, the Ministry tasked vector-control staff with investigating every single case of malaria. Within 72 hours of case confirmation, health brigades visited each patient's family and neighbors, and worked to identify others who might have been infected and eliminate local mosquito-breeding sites.[118]

Even during the long civil war (1979-1992), El Salvador's malaria programming continued. Malaria-elimination workers wore a light-blue uniform that warring factions recognized and allowed to pass through checkpoints to distribute their supplies.[119] This experience is pertinent to many malaria-endemic countries – such as Mozambique, Sri Lanka or the Democratic Republic of Congo -- beset by localized or widespread conflict that fuels malaria incidence and undercuts access to, and the provision of, healthcare and the collection of data.[120]

Eliminating malaria also required the government of El Salvador to work closely with the governments of its neighboring countries, Guatemala and Honduras, to coordinate disease-surveillance efforts. These partnerships strengthened regional health security and provided templates for future cooperation on emerging infectious diseases. U.S. investment – including through the Global Fund[121] and the U.S. Centers for Disease Control and Prevention (CDC)[122] – has fostered such valuable cooperation, just as the Global Fund has sponsored highly successful anti-malaria coordination across the Mekong Delta.[123]

Today, the Salvadoran volunteer collaborators once trained to identify malaria cases have been integrated into the broader infectious-disease program at the Ministry of Health as sentinels against a host of threats. These capacities were crucial to eliminating malaria and stemming its resurgence in a country of great interest and value to the United States.



Indonesia's roadmap from aid recipient to global health donor: cross-border collaboration and debt swaps

Facilitated by the world's largest Debt2Health swap, which moved €75 million into anti-malaria investments[124], Indonesia strengthened its domestic programs, cooperated with Papua New Guinea on cross-border elimination efforts and ultimately grew as a Global Fund donor.

Indonesia illustrates how countries that have received financing from the American people through the Global Fund now are becoming donors– and the key role innovative debt relief plays in their journey from funding beneficiary to donor.

The country of 286 million people, which is on track to end malaria by 2030,[125] has received more than $128 million from the Global Fund since 2017.[126]

Today, Indonesia is now a donor to the Global Fund, having made three-year pledges of $10 million in 2022 and plans to pledge more in 2026.

In 2024, with support from the Global Fund, the governments of Germany and Indonesia signed the largest Debt2Health swap to date. The landmark deal converted €75 million of Indonesia's debt into high-impact investments in malaria, tuberculosis and health-system strengthening.[127],[128]

This financial reset enabled the Indonesian government to increase its domestic spending on local malaria-control efforts, enhance public-sector health infrastructure and improve diagnostic capabilities. The Indonesian government has built and staffed more than 10,200 Community Health Centers (Puskesmas)[129] and more than 300,000 Integrated Service Posts (Posyandu) to reach smaller rural communities,[130] both of which offer free malaria diagnosis and treatment, and developed a coordinated national malaria-control strategy across the country's 6,500 inhabited islands.[131] Today, more than 95% of Indonesia's malaria cases occur in the Papua Region, which shares a 510-mile-long border with the country of Papua New Guinea (PNG), even though this area contains only 1.5% of the Indonesian population.[132]

Achieving a malaria free-Indonesia will require both reaching these last-mile communities and cooperating with the government of PNG. Towards that end, Indonesia's National Malarial Program trained and deployed 4,200 village malaria workers in highly endemic districts, including 370 in Papua and East Nusa Tenggara, and more than 100 forest malaria workers in moderate- and low-endemic areas. [133]

And the governments of Indonesia and PNG signed a landmark Joint Action Plan for malaria control and elimination in 2025.[134] The plan aims to accelerate progress towards ending malaria by 2030 by sharing resources, data and information; coordinating capacity-building activities; and managing cross-country patient pathways.

United in faith, united against malaria: Mozambique's model for community mobilization

From churches to mosques, over 4,000 faith leaders across Mozambique are using their unique influence to advocate for policy change, deliver public health messaging, mobilize volunteers and monitor medicine supplies—trusted voices mobilizing communities.[135]

Any realistic plan aimed at ending malaria in highly endemic countries requires community commitment. Mozambique illustrates one powerful tool for mobilizing at the grassroots level: faith leaders. The country also illustrates how extreme weather and localized conflict are hurdles – but not insurmountable ones – in the fight to end malaria.

Faith groups in Mozambique have been on the rise since the government's anti-religious campaign ended in the 1980s.[136] Today, faith leaders across the country have influence with mothers in the smallest villages, and with government ministers in the capital. They are uniting across faiths, using their influence to advocate for the adoption of policies and strategies that accelerate the elimination of malaria, push for the implementation of the right policies and ensure the national government mobilizes the necessary domestic resources to fight malaria effectively. Faith leaders help stretch public resources by offering their worshippers as volunteers and their buildings as resource centers. And from their pulpit, they reinforce public health messaging.

An early pioneer of this approach was *Programa Inter Religioso Contra a Malaria* (PIRCOM), launched in 2006 with U.S. funding and technical support through PMI.[137] The effort equipped more than 27,000 Christian, Muslim and Baha'i faith leaders to become anti-malaria champions and reached nearly two million congregants with basic malaria education.[138]

Mozambican Anglican Bishop Dinis Sengulane, a leader of this effort, once explained, "If a doctor talks about how important it is for you to have your home sprayed, of course he will talk about those things in those terms, because it is how he will get his salary. But when a leader of a mosque starts talking about health issues, about malaria, then people are ready to listen. [Religious leaders] have got a good audience."[139]

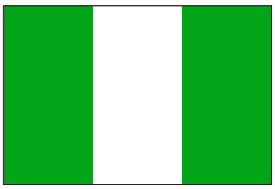
Today, this approach continues with the Faith Leaders Advocacy for Malaria Elimination (FLAME) initiative and the Isdell: Flowers Cross Border Malaria Initiative, which have equipped more than 4,000 faith leaders across Mozambique and its southern African neighbors to serve as champions for malaria elimination.[140] (FLAME fosters peer learning between faith leaders across African nations about effective action, and partners with Friends of the Global Fight.)

This campaign takes different shapes in different communities in Mozambique. In Tete Province, Father David João, a priest in the Anglican Diocese, has mobilized 224 volunteer counselors to meet monthly to discuss key malaria challenges and share public health messages with their neighbors.[141]

In Lamego, in Sofala Province, an imam speaks weekly with pregnant women at the local health center about how they can keep themselves and their families safe from malaria.[142]

Devastated by cyclones Dineo in 2017, Idai and Kenneth in 2019 and Freddy in 2023, Mozambique has built the capacity to address malaria despite extreme weather and violence. The Mozambican government has launched mobile health units, known as *Brigadas Móveis*, to continue the fight against malaria when millions are displaced and health centers damaged or inaccessible.[143]

Armed conflict in Northern Mozambique has forced over 1.3 million people from their homes since 2017, severely disrupting the prevention and treatment of malaria in some of the country's highest-incidence provinces.[144] In 2024, the Global Fund provided emergency support for mass drug administration among returning displaced populations, which helped curb malaria transmission until the national government could resume distributing insecticide-treated nets.[145] The success of transition depends on governments' capacity and will to reach all vulnerable populations, especially in fragile and rapidly changing situations.



Nigeria's private-public partnership: catalyzing a unified fight against malaria

By integrating 1,000+ private providers into government disease surveillance and standardizing, and incentivizing the use of, protocols for quality care,[146] Nigeria is harnessing untapped private-sector infrastructure to expand access, improve data and pay only for verified health outcomes.

With a population of 237 million,[147] Nigeria illustrates how the public and private sectors can align and integrate to create health networks that feature greater resilience, efficiency and access for the most vulnerable than either can achieve on its own. A sense of urgency is much needed, given the scale of Nigeria's malaria challenge: nearly 110 million cases and 300,000 fatalities – every year.[148] The disease accounts for 30% of Nigerian hospital admissions and 60% of outpatient visits.[149] An estimated 60 to 72% of pregnant women in some parts of Nigeria test positive for malaria, and the disease causes an estimated 11% of maternal mortality in the country.[150]

Malaria costs Nigerians almost $200 million (132 billion naira) in treatment expenses and lost productivity.[151] Indeed, the disease has undermined the country's efforts to capitalize on its rich natural resources, including crude oil, natural gas, coal, tin and a variety of rare earth minerals of high value to the U.S.

But Nigerians across government and the private sector have banded together to create an innovative approach of collaboration against malaria that is showing promising results. Nigeria demonstrates one model of harnessing the untapped potential of a country's private health infrastructure to decongest public health facilities, boost quality of care across all facilities while lowering costs, expand disease surveillance and gain market insights. Its model also offers funders a path for moving away from awarding traditional grants towards paying for specific, verified health outcomes.

Private providers deliver an estimated 60 to 70% of medical care and services in Nigeria.[152] In these settings, diagnostic testing for malaria has been rare. Typically, when people have a bad headache, fever and fatigue, they diagnose themselves with malaria and buy anti-malarial medications over the counter at private pharmacies or corner shops.

Private-sector providers have given millions of Nigerians access to lifesaving care, but present unique challenges when not integrated with public-sector systems. Because the care they deliver responds to what patients ask for and can afford, they can drive the overuse of antimalarial drugs, feeding resistance. Compounding the problem, far too many of the medications prescribed are stolen, counterfeit or substandard. Because these private health services are detached from government networks, they create gaps in market, surveillance and pharmacovigilance data. This fracturing of data can lead managers, government officials, researchers and drug manufacturers to underestimate the true scale of Nigeria's healthcare needs and market.[153]

Initially tested in Kenya, a new model being rolled out in Nigeria relies on business software developed by the non-profit Maisha Meds, which previously received over $5 million from the U.S. Agency for International Development (USAID) Development Innovation Ventures (DIV)[154]. The tool helps more than 1,000 private health providers and pharmacies in Nigeria track commodities, manage inventory, make sales and track profits and losses, all while providing the Nigerian government with real-time data for disease surveillance.[155]

"We realized that what we were building is not just a window into what is going on in private sector facilities, it is also a door that we can use to influence behavior," said Dr. Hafeez Oluwa, Nigeria country Director of Maisha Med. "[T]hat allows us to shift behavior by creating an architecture that enforces quality of care."

Embedded in the software is a program that incentivizes private providers to deliver high-quality malaria care.[156] It works by reimbursing providers who follow standardized malaria-treatment protocols (including by providing anti-malarial medicine only after a positive test for the disease). In Lagos State, the software also incentivizes private providers to enroll patients into the state-run health insurance program and refer patients to public health sites for follow-up care as needed.[157]

Maisha Med's technology also includes an AI-enhanced auditing system that automatically analyzes every malaria test photo submitted by providers, monitors compliance with testing and treatment protocols, and flags irregularities. Additionally, among its upcoming innovations, Maisha Meds is piloting a process to evaluate and categorize the quality of antimalarial medicines with the goal of limiting the presence of substandard or falsified products and is building an integrated data system that brings together information on malaria medicines supplied through the private sector.[158] Together, these innovations will enable greater surveillance, improved resource allocation and better strategies to tackle drug resistance.

The program is results-based as healthcare financers, including the Nigerian federal and state governments and donors alike, pay only for confirmed services delivered to uniform standards.[159]

The approach positions the private sector as a direct partner in strengthening health care in Nigeria and allows the national government to scale access to malaria treatment quickly by avoiding duplication and tapping into infrastructure and resources that already exist in the private sector.

Photo: Ismail works at the mosquito net distribution hub in Gabasawa, Nigeria, ensuring the correct number of nets are dispatched to the correct destinations. The Global Fund.

Building Tanzania's malaria fighters: how investing in people powers progress

From entomologists engineering gene-drive mosquitoes to data scientists and community health workers, Tanzania's investments in human capacity have built a self-sustaining army of malaria fighters—and cut the incidence of malaria in the country by more than half.[160]

Few places on the face of this earth better illustrate the determination, support and time needed for a highly endemic country to develop the human and institutional capacity to lead, manage and win the fight against malaria than Ifakara, Tanzania.

The name "Ifakara" means "the place people go to die" in the local Ndamba language.[161] Because this swampy area just south of the equator was so malaria-infested, for centuries living there or even passing through was to flirt with death.

Today, the Ifakara Health Institute, a.k.a. "Mosquito City," teams with thousands of Tanzania's leading researchers who are developing world-class, cutting-edge approaches to repel and kill mosquitos or ensure that they can no longer pass malaria to humans.

When American researchers at S.C. Johnson were looking for experts who could help them test their innovative spatial mosquito repellant, they turned to Ifakara's researchers.[162] The Ifakara Health Institute is just one of the top-flight, home-grown centers established and strengthened by the Tanzanian government over the last decade, with U.S. financial and technical support through PMI and the Global Fund.[163, 164] Through these investments, this country of 69 million people, which is the sixth-largest source of graphite in the world[165] and a key player in global critical mineral reserves and supply chains, has gradually built its own army of malaria fighters and developed and equipped them with powerful tools.

This army includes interdisciplinary teams from across Tanzania:

- scientists and information-technology engineers from the University of Dar es Salaam, who digitalized the country's health records into a robust national system[166];
- entomologists from the National Institute of Medical Research, who have engineered gene-drive mosquitoes (EGDM) that are incapable of infecting humans with malaria[167];
- computer-science researchers, who have collaborated on a smart microscope that not only can diagnose malaria rapidly and accurately, but also provide healthcare providers with information about the severity of the malaria infection[168]; and
- thousands of community health workers trained and equipped to travel to even the most far-flung villages to diagnose and treat malaria at the household level.[169]

These investments in human capacity over more than a decade made by the Tanzanian government and the American people through the Global Fund and PMI have powered home-grown technological innovation that is helping the country end malaria. From 2000 to 2023, the incidence of malaria fell by more than half in Tanzania, from 338 to 128 per 1,000 people.[170] These investments in human capacity illustrate what is required for viable transitions for a country to lead and manage the fight against malaria.

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Cover photo: A spray operator conducts indoor residual spraying inside a home in Siphofaneni, Eswatini. The Global Fund/Brian Otieno.

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