

MALAWI MALARIA PROFILE

I. ABOUT

Launched in 2005, the [U.S. President's Malaria Initiative \(PMI\)](#) supports implementation of malaria prevention and treatment measures as well as cross-cutting interventions. PMI's 2021–2026 strategy, [End Malaria Faster](#), envisions a world free of malaria within our generation, with the goal of preventing malaria cases, reducing malaria deaths and illness, and eliminating malaria in PMI partner countries. PMI currently supports 274 countries in Sub-Saharan Africa and three programs across the Greater Mekong Subregion in Southeast Asia to control and eliminate malaria. Malawi began implementation as a PMI partner country in 2007. Please see the [Malawi Malaria Operational Plan](#) (MOP) for more information on PMI's approach and investments.

II. CONTEXT

Table 1. General Demographics and Malaria Situation

Population	19,351,892 (Malawi National Statistics Office, 2022)
Population at risk of malaria	100%
Malaria prevalence	10.5% (Malaria Indicator Survey [MIS], 2021)
Malaria incidence/1,000 population at risk	220 (Health Management Information System [HMIS], Malawi National Malaria Program, 2022)
Peak malaria transmission	Malaria transmission is highest during the rainy season (November–April)

The burden stratification exercise was created using key malaria burden indicators of incidence, prevalence, and mortality using historical data from 2016 to 2021. Based on three variable composites, two stratification scenarios were generated. Scenarios 1 and 2 contained total malaria cases, prevalence, and all-cause mortality counts in children under the age of five, while scenarios 3 and 4 included incidence, prevalence, and all-cause death counts in children under the age of five. For each scenario, four burden strata (highest, high, moderate, and low) were constructed, resulting in a final list of districts assigned to each stratum, as shown in Figure 1.

Figure 1. Stratification Map, 2021

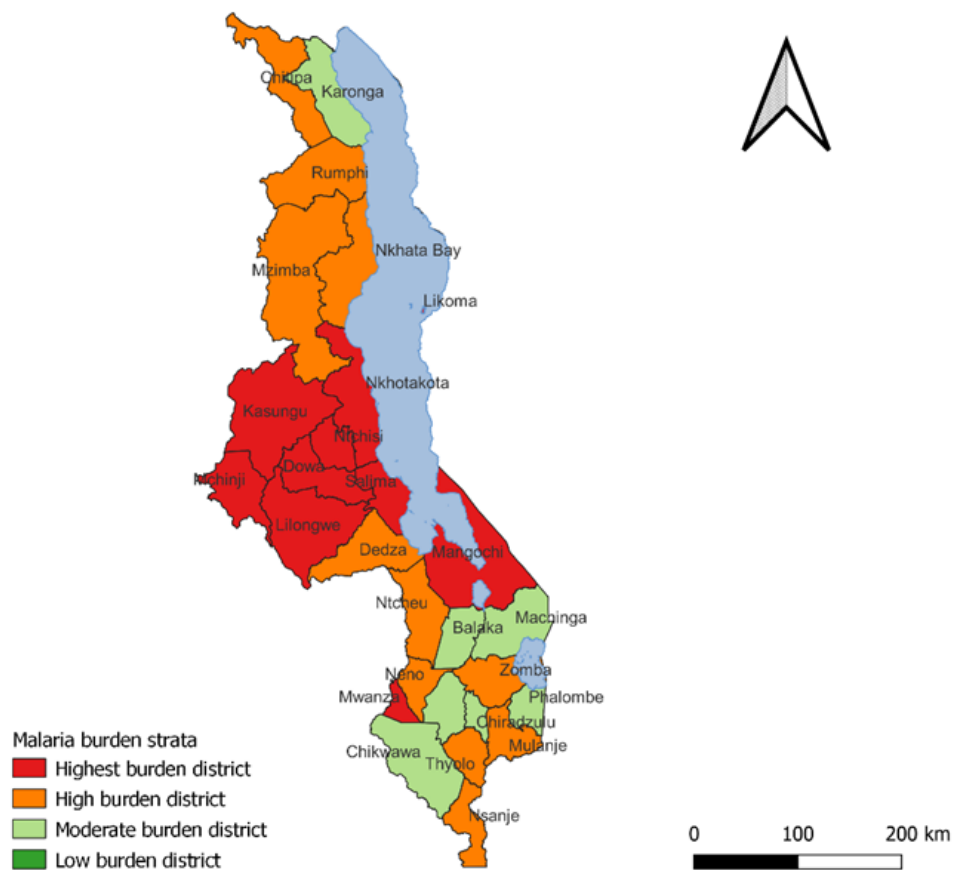
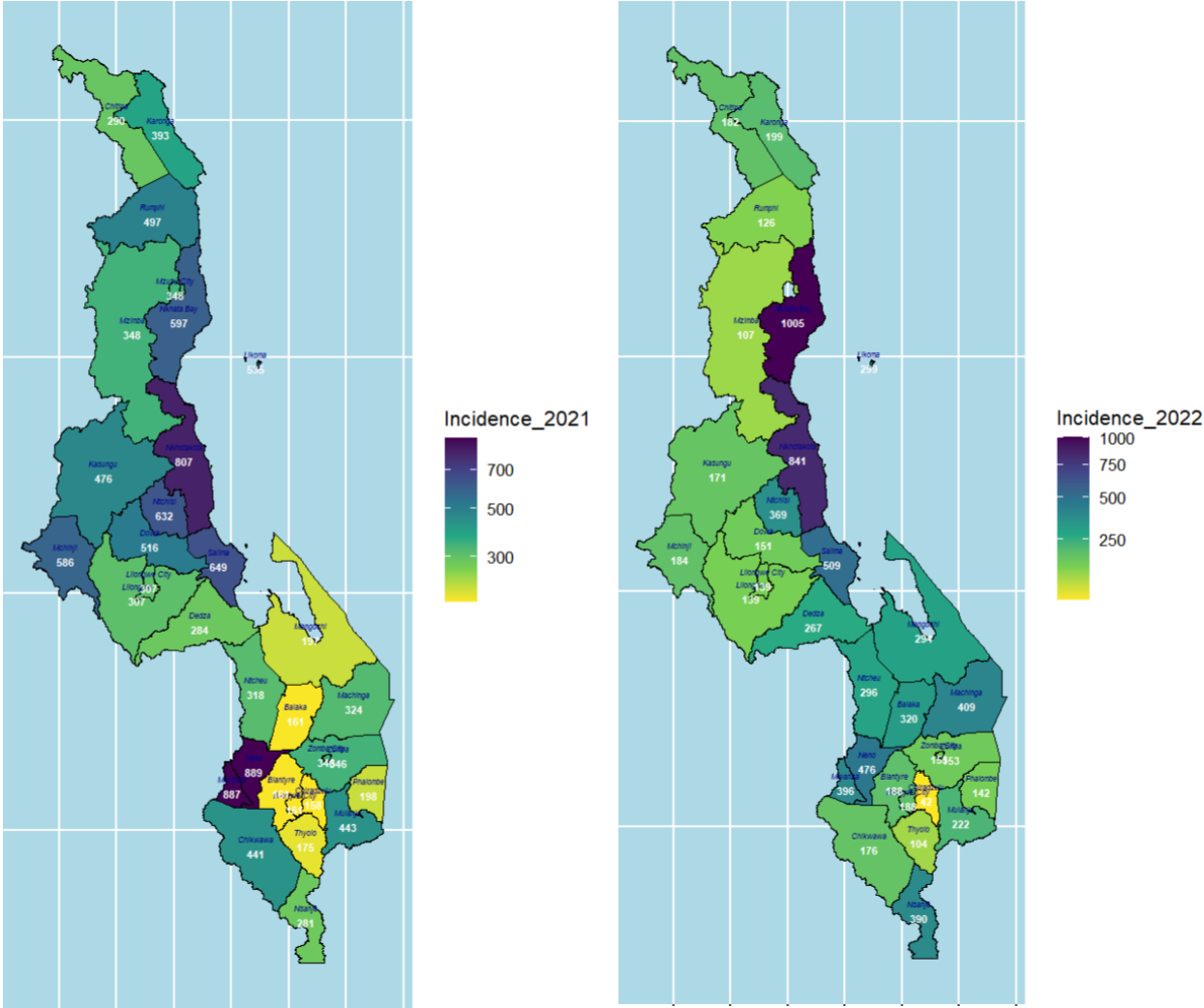


Figure 2 illustrates the spatial distribution of malaria incidence across various districts. Significant fluctuations in malaria occurrence persist over the duration of the two-year time frame.

Figure 2. Incidence Maps



Annual Incidence per 1,000
(Malawi HMIS 2021)

Annual Incidence per 1,000
(Malawi HMIS 2022)

Table 2. Malaria Parasites and Vectors

Principal malaria parasites	<i>Plasmodium falciparum</i> (96.5%) (Malawi Ministry of Health [MOH] Malaria Strategic Plan 2023–2030)
Principal malaria vectors¹	<i>Anopheles funestus</i> s.l.; However, species composition varies across districts and <i>An. gambiae</i> s.l. is a secondary vector. Resistance to pyrethroids has been detected nationwide in both <i>An. funestus</i> and <i>An. gambiae</i> . (PMI VectorLink Annual Entomological Monitoring Report 2022)

¹ See the entomological monitoring section of the MOP for more details on vector bionomics and insecticide resistance and the indoor residual spraying section for details on residual efficacy.

COUNTRY HEALTH SYSTEM

The Malawi health service delivery system is pyramidal, consisting of tertiary, secondary, primary, and community care levels. There are approximately 571 public sector health facilities administered by the Malawi government. District and central hospitals provide secondary and tertiary care services, respectively, but they also provide primary care to individuals within their catchment area. Primary care is delivered through clinics and health centers where curative, maternity, and preventive services are offered. As of August 2022, there were 4,181 functional village clinics. The Christian Health Association of Malawi operates 164 health facilities, mainly in rural areas nationwide, and provides approximately one-third of health services, including free provision of essential health package services in many locations, covering conditions affecting the majority of the population of Malawi, especially those living in poverty, including: vaccine-preventable diseases, acute respiratory infections, malaria, tuberculosis, diarrhea, sexually transmitted infections, perinatal conditions, and HIV/AIDS. Fees are charged where service-level agreements with the government have not been established. There are 310 private facilities, but while this number is relatively high, the proportion of services provided at these facilities is disproportionately low (4 percent).

Access to health facilities is limited: 46 percent of Malawians live within a 5-kilometer radius of a health facility. In response, Malawi currently employs 4,592 health surveillance assistants (HSAs) trained in community case management in hard-to-reach areas, defined as areas more than 5 kilometers from a health facility, to provide integrated community case management (iCCM) and other services through village health clinics. HSAs are trained to assess, classify, and provide first-line treatment for specific childhood illnesses, including malaria, in addition to providing referrals to the next level of care. There are 10,773 HSAs across the nation, or approximately 1 HSA per 1,825 population, which is short of the 1 HSA per 1,000 population goal set by the Ministry of Health (MOH). Local community-based organizations also provide nonclinical malaria services, such as social and behavior change on key malaria messages, counseling, and net distribution. The Malawi health system is highly and increasingly decentralized, with many programming, human resources, and budgeting decisions made at the district level, and coordination and supervision executed at the five zonal levels.

The National Malaria Control Program (NMCP) is located under the MOH's Directorate of Preventive Health Services; the NMCP's program manager serves as the deputy director of preventive health services. The program is staffed by a core group of 15 technical officers. The NMCP sets policies, establishes strategies, coordinates activities, and provides technical guidance for the MOH with respect to malaria prevention and control interventions. The management structure comprises 29 district malaria coordinators to direct activities in each district, as well as 29 district insecticide-treated mosquito net (ITN) coordinators. The central MOH officially converted the district malaria coordinator positions to full-time in 2015. However, the transition has not been completely adopted in all districts, and many of the malaria coordinators are still unofficially required to perform clinical or other duties unrelated to malaria. The ITN coordinator positions are filled by staff members with other primary designations. Other staff at the district level, including the district health officer, district medical officer, district pharmacist, and district HMIS officer, are critical to the malaria program.

The NMCP coordinates with the Reproductive Health Directorate to conduct quarterly integrated supervision on MIP and safe motherhood for antenatal care (ANC) health service providers; and they jointly conduct regular quarterly meetings of the technical working group's MIP subcommittee and other related coordinating mechanisms to ensure concerted efforts in the implementation of ANC services and MIP activities.

All HMIS activities, including those related to data collection, consolidation, dissemination, and analysis, fall within the Central, Monitoring and Evaluation Division of Malawi's MOH. Malawi uses the DHIS2 web-based, open-source information system as its routine HMIS. This system exists at the facility, district, and central levels. Health facilities and communities conduct data collection at the peripheral level, which are then conveyed in hard copy to the District Health Office, where they are entered into the DHIS2.

The health commodity supply chain in Malawi is operated through multiple parallel systems implemented by different stakeholders, including PMI. Over 90 percent of commodities for malaria, HIV/tuberculosis, and family planning are procured and distributed through donor-supported supply chains. The Malawi government and development partners are jointly working toward an integrated supply chain, with the aim of ensuring efficient and timely delivery of health commodities and essential medicines to the population. Through the Department of Health Technical Support Services (HTSS), the MOH oversees information and commodity flow through these parallel supply chains, which operate at all levels of the health service delivery system. HTSS, with support from donors, has deployed a national logistics management information system, which is used by nearly 95 percent of Malawi public health facilities for inventory management, recording, and monthly reporting of logistics data to inform commodity resupply on a monthly and bimonthly basis.

To improve community-level access to a limited number of pharmaceuticals and related medical supplies, HTSS expanded last-mile commodity delivery to health posts and village clinics affiliated with specific health centers and managed by HSAs. HSAs pick up supplies for a short period (about one week) and distribute them in hard-to-reach communities in the health center’s catchment area, returning any unused supplies to the health center.

OTHER CONTEXTUAL INFORMATION

Malawi remains one of the poorest countries in the world, and it faces political, economic, and climate-related risks. Macroeconomic headwinds, such as depleted foreign reserves and the resulting inability to import petrol, plague the Malawi government. To the detriment of the populace, stagnant wages and cost-of-living increases manifesting in inflated prices for fertilizer, fuel, and food are undercutting domestic growth per capita. Such existential economic threats beget short-sighted, survivalist behaviors by individuals, such as illegally fishing with bed nets, enabling a feedback loop that facilitates further environmental degradation. The economy is heavily dependent on agriculture, with most of the population reliant on subsistence farming, and it is vulnerable to external shocks, particularly climatic shocks. Climate change is affecting seasonal weather patterns, leading to a greater number of cyclones with higher intensity, flooding, cyclical drought, and decreased crop harvests.¹ Lack of sanitation due to flooding and environmental strains on health systems have wrought recent outbreaks of cholera. Other infectious diseases have manifested as well, including cholera and polio.

III. NMCP STRATEGIC PLAN

The NMCP’s National Malaria Strategic Plan (2023–2030) aims to eliminate malaria in Malawi by 2030. It seeks to increase the proportion of the population protected by at least one malaria vector control intervention from 37 percent in 2022 to at least 90 percent by 2030; to increase and sustain the proportion of suspected cases of malaria that are tested from 98 percent in 2022 to 100 percent and treat all confirmed cases by 2030; and to increase the uptake of at least 3 doses of intermittent preventive treatment for pregnant women (IPTp) from the 2022 baseline of 56 percent to 80 percent by 2030. Furthermore, the plan seeks to increase the proportion of caregivers of children under the age of five who take action to seek appropriate malaria treatment within 24 hours of the onset of fever from 46 to 90 percent by 2030; to increase the proportion of the general population who use an ITN consistently from 55 percent (Malaria Behavior Survey 2021) to 80 percent by 2030; and to increase the proportion of pregnant women who take IPTp 3+ during pregnancy from 56 percent (Malaria Behavior Survey 2021) to 80 percent by 2030. Similar to PMI, Malawi’s NMCP focuses on the following intervention areas: vector control; case management; MIP; social and behavior change; procurement and supply chain management; and surveillance, monitoring, and evaluation.

¹ [The Influence of Climate on Malaria Incidence in Malawi](#) (2020) analyzes the shift in malaria incidence based on historical climate trends and explores the future risks from a warming climate for malaria burdens in Malawi.

IV. KEY MALARIA DATA

The primary goals for conducting a national household survey are to assess the coverage of interventions and provide point estimates of anemia and malaria prevalence. To best interpret the trends of key indicators, it is important to understand the timing of malaria prevention and control interventions and malaria epidemiology in relation to the timing of the related national-level household survey. Table 3 provides the timeline between the most recent malaria prevention and control intervention or malaria epidemiological information in relation to the subsequent national household survey for the associated key indicators.

Table 3. Relative Timeline from Intervention to National Household Survey

	2012 MIS April 2–May 15	2014 MIS May 2–June 10	2017 MIS Apr 15–June 16	2019–2020 MICS	2021 MIS May 3–June 30
Time since most recent prior ITN mass campaign to coverage indicator	3+ years ¹	2 years	1 year ²	1–1.5 years	3 years ³
Time since most recent case management/MIP intervention to diagnostic indicator	None	0.5 years after health facility RDT rollout, during CHW rollout	2.5 years after new case management guidelines		
Time of seasonal rains at time of MIS	November–April	November–April	November–April	November–April	November–April

¹Subnational ITN campaigns in FY 2007–2009; a national ITN mass campaign was planned for the last quarter of 2011 in advance of MIS 2012, but logistical challenges resulted in delays until it was ultimately conducted in the third and fourth quarters of 2012. ²ITN mass campaigns in advance of the 2017 MIS occurred as follows: 6 districts in 2014, 4 districts in 2015, and 19 districts in 2016. ³The 2021 mass distribution started in October and covered 20 districts; the remaining 5 districts will receive nets in 2023. CHW: community health worker; ITN: insecticide-treated net; MICS: Multiple Indicator Cluster Survey; MIP: malaria in pregnancy MIS: Malaria Indicator Survey; RDT: rapid diagnostic testing.

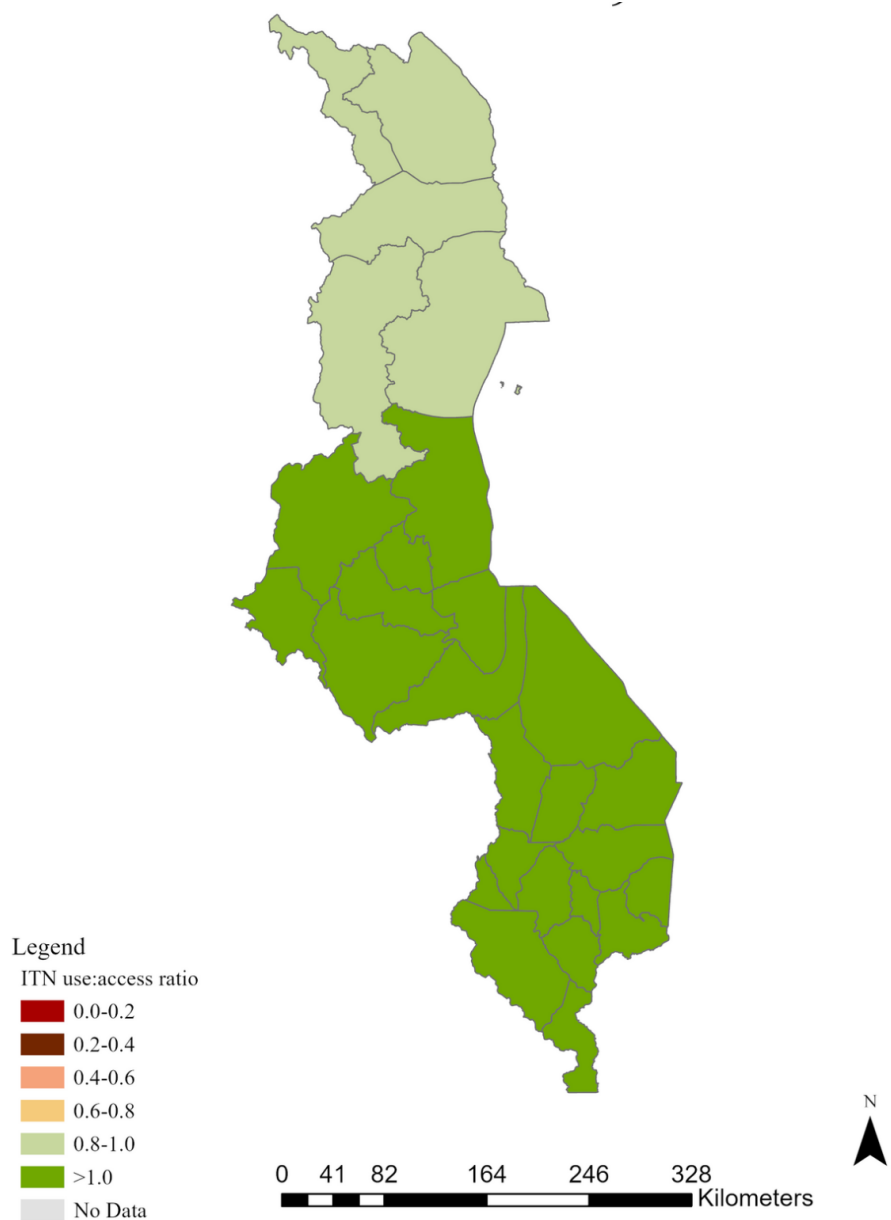
EVOLUTION OF KEY SURVEY-BASED MALARIA INDICATORS

Table 4. Key Survey Indicators

Indicator	2006 MICS	2012 MIS	2014 MIS	2017 MIS	2019–2020 MICS	2021 MIS
% of households with at least one ITN	38	55	70	82	74	55
% of households with at least one ITN for every two people	N/A	19	30	42	36	21
% of population with access to an ITN	N/A	37	52	63	57	37
% of population that slept under an ITN the previous night	N/A	41	53	55	77	37
% children under the age of five who slept under an ITN the previous night	25	56	67	68	90	53
% of pregnant women who slept under an ITN the previous night	N/A	51	62	63	92	49
% children under the age of five with a fever in the last two weeks for whom advice or treatment was sought	N/A	58	59	54	64	93
% of children under the age of five with a fever in the last two weeks who had a finger or heel stick	N/A	21	32	38	56	41
% of children receiving an ACT among children under the age of five with a fever in the last two weeks who received any antimalarial drug	N/A	91	93	96	49	89
% of women who attended four ANC visits during their last pregnancy	N/A	N/A	50	N/A	51	N/A
% of women who received three or more doses of IPTp during their last pregnancy in the last two years	N/A	N/A	13	41	48	56
Mortality rate among children under the age of five per 1,000 live births	122	N/A	N/A	N/A	42	N/A
% of children under the age of five with parasitemia by microscopy	N/A	28	33	24	N/A	10.5
% of children under the age of five with parasitemia by RDT	N/A	43	37	36	N/A	24

ACT: artemisinin-based combination therapy; ANC: antenatal care; IPTp: intermittent preventive treatment for pregnant women; ITN: insecticide-treated net; MICS: Multiple Indicator Cluster Survey; MIS: Malaria Indicator Survey; RDT: rapid diagnostic testing.

Figure 3. ITN Use-to-Access Ratio Map



Source: MICS 2019–2020. See: <https://breakthroughactionandresearch.org/resources/itn-use-and-access-report/malawi/>.

Table 5. Evolution of Key Malaria Indicators Reported through Routine Surveillance Systems

Indicator	2018	2019	2020	2021	2022
# of suspect malaria cases ¹	13,164,827	11,860,203	12,594,287	13,303,404	10,900,827
# of patients receiving diagnostic test for malaria ²	13,077,088	11,468,349	12,559,902	13,248,947	10,877,592
Total # of malaria cases ³	7,145,094	5,517,111	7,101,222	6,924,683	4,715,282
# of confirmed cases ⁴	6,997,200	5,457,218	7,073,242	6,880,537	4,682,686
# of presumed cases ⁵	147,894	59,893	27,980	44,146	32,596
% of malaria cases confirmed ⁶	98%	99%	99%	99%	99%
Test positivity rate (TPR) ⁷	54%	48%	56%	52%	43%
Total # of malaria cases in children under the age of five ⁸	3,395,529	2,355,766	2,867,042	2,717,567	1,887,395
% of cases in children under the age of five ⁹	48%	43%	41%	39%	40%
Total # of severe cases ¹⁰	86,257	84,906	82,111	61,537	35,932
Total # of malaria deaths ¹¹	2,967	2,430	3,332	2,368	2,109
# of facilities reporting ¹²	8,116	8,256	8,260	8,699	8,872
% of data completeness ¹³	92%	94%	93%	95%	96%

¹ Number of patients presenting with signs or symptoms possibly due to malaria (e.g., fever). ² RDT or microscopy, all ages, outpatient and inpatient. ³ Total reported malaria cases, all ages, outpatient and inpatient, confirmed and unconfirmed cases. ⁴ Diagnostically confirmed, all ages, outpatient and inpatient. ⁵ Clinical/presumed/unconfirmed, all ages, outpatient and inpatient. ⁶ Number of confirmed cases divided by total number of cases. ⁷ Confirmed cases divided by the number of patients receiving a diagnostic test for malaria (RDT or microscopy). ⁸ Outpatient and inpatient, confirmed and unconfirmed. ⁹ Total number of cases in children under the age of five divided by the total number of cases. ¹⁰ Severe cases are from inpatient registers and are aggregated and reported in the monthly malaria report then entered into DHIS2. ¹¹ All ages, outpatient, inpatient, confirmed, and unconfirmed. ¹² Total number of health facilities reporting data into the HMIS/DHIS2 system that year. ¹³ Number of monthly reports from health facilities divided by the number of health facility reports expected (average for the calendar year).

Table 6. Disaggregated Community-Level Data

Indicator	2019	2020	2021	2022
# of patients receiving diagnostic test for malaria from a CHW	1,287,110	1,390,563	1,454,773	1,155,268
Total # of malaria cases reported by CHWs ¹	910,095	1,038,009	1,075,014	790,643
% of CHW reported cases (among total malaria cases) ²	17%	14%	16%	16%

¹ Includes all ages, confirmed and unconfirmed. ² Total number of malaria cases reported by community health workers (CHWs) divided by the total number of malaria cases in the previous table.

V. Other Implementation Information

A 2016–2019 [net durability study](#) monitored two nets brands that had been distributed in 2016: Yorkool and Royal Sentry. Data show that physical integrity of the nets lasted less than three years. In Kasungu, Yorkool nets lasted an average of 2.4 years and in Mangochi, Royal Sentry nets lasted an average of 1.9 years. This study reveals a high attrition rate for nets after 36 months. Results of net bioassays showed that both Royal Sentry and Yorkool nets remained effective for up to 36 months.

Table 7. Results of Standard Durability Monitoring (2016 cohort)

Site/Net Type	Survey and Time Since Distribution (months)	Attrition to Wear and Tear (%)	Nets in Serviceable Condition (%)	Optimal Insecticidal Effectiveness in Bioassay (%)
Kasungu (Yorkool/Deltamethrin)	12	15%	88%	73%
	24	37%	75%	72%
	36	73%	68%	68%
Mangochi (Royal Sentry/ Alpha-cypermethrin)	12	17%	86%	97%
	24	53%	69%	96%
	36	90%	59%	96%

Summary of Completed Therapeutic Efficacy Studies

Therapeutic efficacy studies performed over the last decade suggest no evidence of substantial resistance to the first-line artemisinin-based combination therapy (ACT) treatment (artemether-lumefantrine (known locally as “LA”). However, PMI has concerns regarding the methodologies and analyses from these prior studies. PMI has engaged the NMCP to discuss these concerns and determine how to improve the quality and ensure reliable and accurate ACT resistance data are collected in Malawi. Per the agreement between PMI; the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund); and MOH, PMI/Malawi is now the sole donor providing therapeutic efficacy study funding, which was included in the FY 2020 MOP, with planned implementation in 2023. The most recent Global Fund study

results reported pooled efficacies at four sites in Malawi, Machinga, Nkhotakota, Nkhata Bay, and Karonga. Artemether-lumefantrine efficacy was 91.2 percent, and dihydroartemisinin piperaquine efficacy was 99.7 percent. Reporting pooled efficacies is not a WHO-recommended practice.

VI. Key Policies

Table 8. Policies in Malawi

Health Sector Strategic Plan III (2023–2030)	
National Malaria Strategic Plan (2023–2030)	
National Digital Health Strategy (2020–2025)	
National Social Behavior Change/Communication Strategy	
National Health Communication Strategy (2021–2026) Malawi Malaria Communication Strategy (2023–2030)	
National Supply Chain Strategy/Master Plan (2021–2026)	
National Vector Control Strategy (2021–2025)	
Integrated Vector Management Plan (2019–2022)	
Guidelines for the Treatment of Malaria in Malawi (2020)	
What is/are the first-line treatment(s) for uncomplicated <i>P. falciparum</i> malaria*?	Per national policy: Dihydroartemisinin-piperaquine Per practice and guidelines: Artemether-lumefantrine
What is/are the second-line treatment(s) for uncomplicated <i>P. falciparum</i> malaria*?	Artesunate-amodiaquine
What is the first-line treatment for severe malaria?	Injectable artesunate
In pregnancy, what is the current first-line treatment for uncomplicated <i>P. falciparum</i> malaria in the first trimester ?	Artemether-lumefantrine
Given the WHO policy change to recommend AL as treatment for uncomplicated malaria in the first trimester, does the MOH plan to update the policy on treatment of MIP in the first trimester? And if so, what is the status of this policy change and implementation of the new policy?	The current guidelines recommend the use of AL for the treatment of uncomplicated malaria in all trimesters. Provider training is ongoing in 2023.
In pregnancy, what is/are the first-line treatment(s) for uncomplicated <i>P. falciparum</i> malaria in the second and third trimesters ?	Artemether-lumefantrine
In pregnancy, what is the first-line treatment for severe malaria?	Injectable artesunate

Is prereferral treatment of severe disease recommended at peripheral health facilities? If so, with what drug(s)?	Yes, with artesunate
Is prereferral treatment of severe disease with rectal artesunate recommended for community health workers?	Yes
National Community Health Strategy (2017–2022)	
What is the # of CHWs currently providing iCCM?	4,186
What is the country’s target for the number of CHWs providing iCCM?	6,386
What percent of the country’s target is met?	66%
Does the country have a policy that enables the routine, regular payment of salaries/stipends for CHWs?	Yes
Do CHWs have the authority to test and treat all ages for malaria?	No, all-ages treatment in the community is not national policy.
Prevention of Malaria in Pregnancy Policy Included within Guidelines for the Treatment of Malaria in Malawi (2020)	
At what gestational age is the first dose of IPTp-SP to be given to pregnant women according to the national guidelines for malaria and MCH?	13 weeks
Do the national ANC guidelines reflect the WHO’s 2016 recommendation of eight ANC scheduled contacts (plus one additional contact for early initiation of IPTp at 13–16 weeks)? If not, how many ANC contacts are recommended?	At least three IPTp doses at four weeks apart is recommended.
What is the status of training ANC providers on the WHO-recommended eight or more contacts?	Training includes encouragement of pregnant women to attend as many ANC/IPTp visits at four weeks apart starting at 13 weeks if possible.
Have HMIS/DHIS2 and ANC registers been updated to include eight or more contacts?	ANC registers are up to date and include eight contacts.
Are IPTp data collected as single months where the January 2022 data represent the number of doses administered in January 2022, or cohort data, representing the cumulative data from pregnancies which began six months prior?	IPTp data are collected both as single months and cumulative for cohorts, and they can be retrieved independently where it makes sense.
Is ANC/IPTp provided by facility staff conducting ANC outreach to communities?	Yes
Can CHWs deliver IPTp and if so, which specific cadres and beginning with which dose? How many districts are targeted for c-IPTp implementation?	There is currently no policy for c-IPTp in Malawi and thus it is not being implemented.

AL: artemether-lumefantrine; ANC: antenatal care; CHW: community health worker; c-IPTp: community-IPTp; DHIS2: District Health Information System-2; HMIS: health management information system; iCCM: integrated community case management; IPTp: intermittent preventive treatment for pregnant women; MCH: maternal and child care; MIP: malaria in pregnancy; MOH: Ministry of Health; SP: sulfadoxine-pyrimethamine; WHO: World Health Organization.

VII. PARTNER LANDSCAPE

PMI and the Global Fund are the only significant funders for malaria control in Malawi. In recent years, PMI and the Global Fund have increasingly shared financial, supply chain, and programmatic data. In particular, PMI and the Global Fund agreed to a harmonized financial taxonomy to aid comparison of investments to better identify potential overlaps and gaps.

Table 9 summarizes contributions by key external partners and partner country governments for calendar years (CY) 2020–2023 as well as proposed investments in the application for the 2024–2027 Global Fund Grant cycle, providing insight into total country investments. The partner country government invests substantial funding into the national-to-local infrastructure and service delivery that benefits malaria programs and many others; however, it is not always possible to specifically attribute funding to malaria.

Table 9. Partner Landscape

Partner	Key Technical Interventions	Geographic Coverage	Funding Amount or In-Kind Contribution	Time Frame
Global Fund	<ul style="list-style-type: none"> Support for nationwide mass campaign, 2021–2022 Malaria Indicator Survey, 2021 Procurement of about 50% of national need for malaria RDTs and ACTs Training and integrated supportive supervision, 2021–2027 IRS in three districts and entomological monitoring at four sites, 2021–2023 Proposed: nationwide mass campaign, late 2024 Proposed: Malaria Indicator Survey, 2025 Proposed: SBC programming 	<ul style="list-style-type: none"> National for ITN campaigns National for commodities National for integrated supportive supervision Nationwide for proposed SBC 	<p>Average of ~\$30,000,000 per year, 2021–2024</p> <p>Average of ~\$27,000,000 per year, 2024–2027</p>	<p>Current grant covers January 2021 to June 2024; proposed activities from July 2024 to June 2027 are included in the grant application, which has been recommended for grant making.</p>
Malawi MOH	<ul style="list-style-type: none"> Implementation of all national interventions via the NMCP Administrative and financial support of the NMCP 	National	Unknown	N/A

ACT: artemisinin-based combination therapy; IRS: indoor residual spraying; ITN: insecticide-treated net; NMCP: National Malaria Control Program; RDT: rapid diagnostic test; SBC: social and behavior change.