LAST UPDATED: 04/13/2022

TANZANIA (MAINLAND) 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 24 countries in sub-Saharan Africa and three programs across the Greater Mekong Subregion in Southeast Asia to control and eliminate malaria. Tanzania – Mainland began implementation as a PMI partner country in FY 2006. Please see the Tanzania – Mainland Malaria Operational Plan for more information on PMI's approach and investments.

II. CONTEXT

Table 1: General Demographics and Malaria Situation

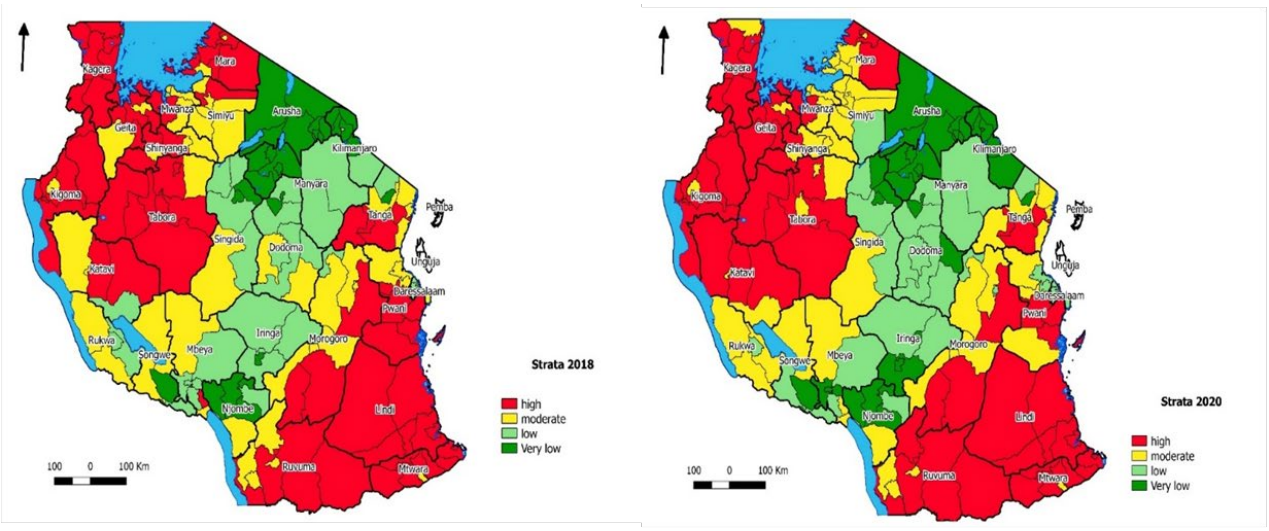
Population	59,441,988 (National Bureau of Statistics, 2021)
Population at risk of malaria	100% (World Health Organization [WHO])
Malaria prevalence	7.3% (Tanzania Malaria Indicator Survey [MIS], 2017) Prevalence on the mainland varies by region from <1 percent in the highlands of Arusha to as high as 15 percent in the Southern Zone and 24 percent along the Lake and Western zones.
Malaria incidence/1,000 population at risk	120.2/1,000 (WHO, 2020)
Peak malaria transmission	The north and east experience two rainy seasons in October to December and March to May, while the central, southern, and western regions have one longer wet season from October through April or May. Rainy seasons correspond to high malaria transmission periods.

STRATIFICATION

Periodic nationwide stratification exercises began in 2017. The following malaria indicators are used to conduct each stratification: 1) Parasite prevalence in school children from school surveys 2) fever test positivity rate (TPR), 3) annual parasite incidence (API), 4) confirmed malaria incidence, and 5) malaria TPR in pregnant women. The indicators are categorized, assigned a score corresponding to the strata defined by National Malaria Control Program (NMCP), and summed to produce an overall score across indicator categories. NMCP defines strata corresponding to malaria risk as very low (plasmodium falciparum parasite rate *[pfpr]* <1 percent), low (*pfpr* 1<5 percent), moderate (*pfpr* 5<30 percent), and high (*pfpr* >30%). In addition to these four epidemiological strata, urban councils were considered as a separate, non-epidemiological stratum with specific operational and intervention needs. The NMCP tailors intervention packages and sets targets to each stratum. These targets are to reduce malaria burden in moderate to high-risk strata, from 15 percent *pfpr* in 2017 to less than 7.5 percent *pfpr* in 2025 and to maintain and further reduce transmission in low and very low strata in areas targeting elimination from 1 percent *pfpr* in 2017 to less than 0.5 percent *pfpr* in 2025.

Figure 1 shows the macrostratification maps by council level, including the number of councils per stratum for comparison between 2018 and 2020. Geographically, most of the councils in the low and very low strata were situated in the central corridor running from the northeast to southwest areas of the country, while the councils in the moderate to high strata were situated in the northwest and southeast areas. According to the stratification of malaria burden and delineation of intervention packages tailored to each epidemiological stratum, regions in the Lake/Western and Southern zones are largely classified in the moderate and high-burden strata, where the NMCP priority remains burden reduction.

Figure 1: Macrostratification Maps by Council Level, 2018 and 2020



Stratum	Epi strata		Epi + non epi strata	
	2018	2020	2018	2020
Very Low	28	36	26	31
Low	34	32	23	22
Moderate	49	52	41	45
High	73	64	69	61
Urban		0	25	25
Total	184	184	184	184

Figure 2: Prevalence Map by Regional Level, 2017

Figure 2 shows that malaria prevalence by regional level among children ages 6 to 59 months who tested positive for malaria by malaria rapid diagnostic test (mRDT) during the MIS conducted in 2017, with prevalence ranges from <1 percent in the highlands of Arusha to as high as 15 percent in the Southern Zone and 24 percent along the Lake/Western zones.

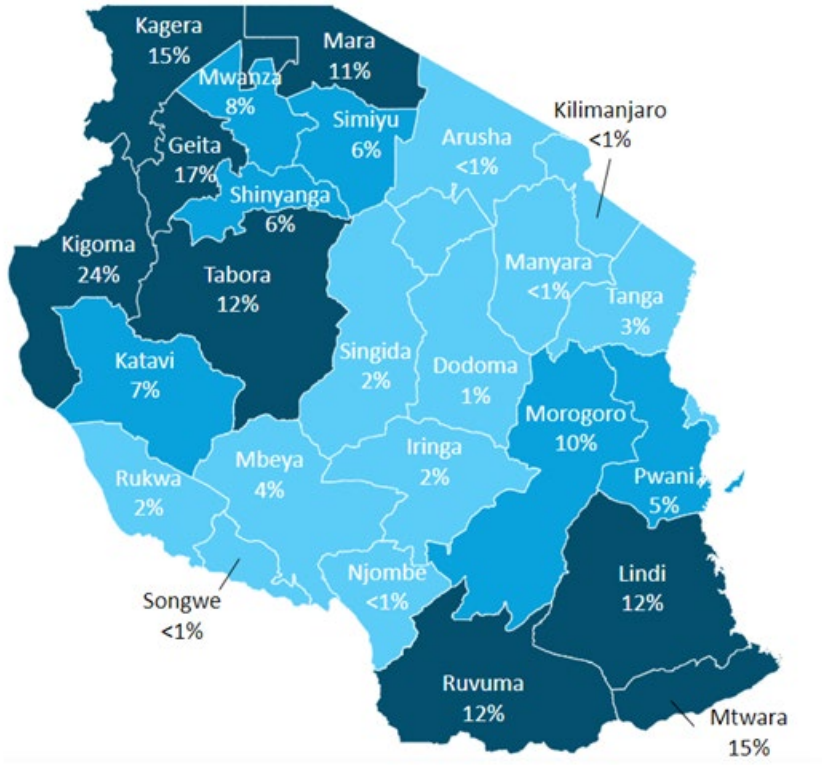


Figure 3: Incidence Map by Council Level, 2021

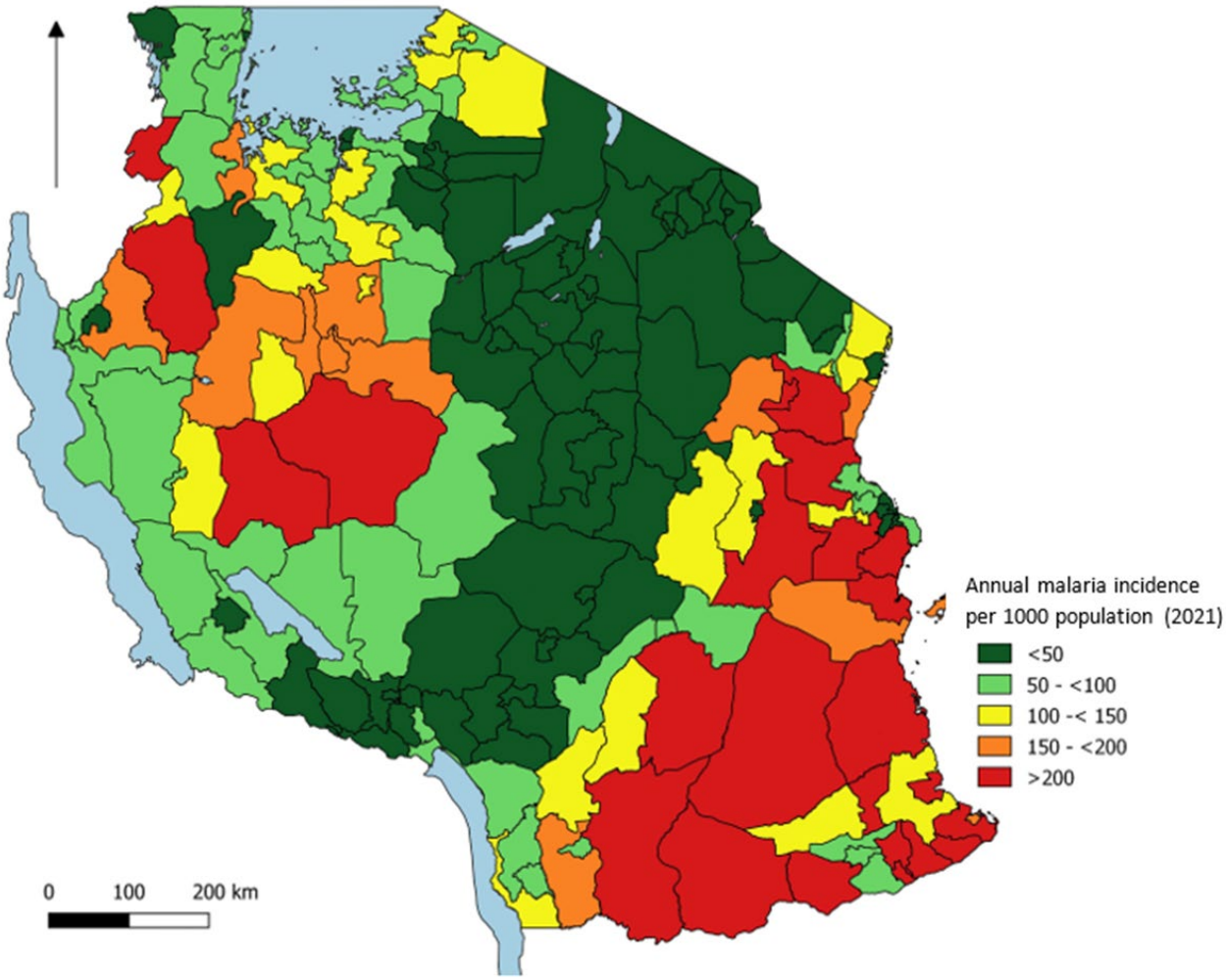


Table 2: Malaria Parasites and Vectors

Principal Malaria Parasites	*Plasmodium falciparum* (NMCP, 2021)
Principal Malaria Vectors*	Around the Lake Zone of mainland Tanzania, *Anopheles funestus* s.s is the most abundant vector and *An. arabiensis* is the second most abundant vector, followed by *An. gambiae* s.s and *An. parensis*. (National Institute for Medical Research, 2021)

* See **Entomological Monitoring** section of the Malaria Operational Plan for more details on vector bionomics and insecticide resistance and **Indoor Residual Spraying** section for details on residual efficacy.

COUNTRY HEALTH SYSTEM

Mainland Tanzania is divided into two main administrative levels: regions and councils. Currently there are 26 regions and 184 councils. The councils are categorized according to population settings: district councils (mainly in rural settings), town, municipal, and city (mainly urban settings). Councils are divided into four to five divisions, and each division has three to four wards. Five to seven villages form a ward. The council is the most important administrative and implementation authority for public services, including policies of the Ministry of Health, Community Development, Gender Elderly and Child (MOHCDGEC) and consequently those of the NMCP.

Tanzania's National Health System is based on a central-district government structure. The MOHCDGEC) and the President's Office Regional Administration and Local Government (PORALG) are jointly responsible for the delivery of public health services. The central MOHCDGEC is responsible for policy formulation, development of guidelines to facilitate policy implementation, and monitoring of policies and implementation guidelines. The MOHCDGEC is also responsible for direct implementation of national, zonal, and regional referral hospitals. Regional health management teams (RHMTs) interpret these policies and monitor their implementation in the councils they supervise. The regional medical officer heads the RHMT and reports directly to the MoHCDGEC on issues related to medical management, and to PO-RALG, through the regional administration secretary, on issues related to health administration and management. The council health management team (CHMT) is responsible for council health services, including dispensaries, health centers, and hospitals. The CHMT follows guidelines for planning and management of district health, which are issued jointly by MOHCDGEC and PORALG. The district medical officer (DMO) heads the CHMT and is in charge of all Council Health Services, is accountable to the Council Executive Director on administrative and managerial matters, and reports to the regional medical officer on technical matters.

In Tanzania, there are 8,365 registered and functional health care facilities, including hospitals, health centers, and dispensaries. Public health services are delivered through government, non-profit voluntary agencies, and parastatal health care facilities. The health care system in Tanzania is based on a hierarchical system represented by administrative level, type, and function of facility. The system includes a referral structure from primary healthcare to tertiary level. A dispensary serves a population of 6,000 to 10,000 people, a health center serves 50,000 to 80,000, and a district hospital serves more than 250,000. A regional hospital serves as a referral center to four to eight district hospitals, and four consultant hospitals (zonal hospitals) serve as referral centers for several regional hospitals. National hospitals serve as referral centers for zonal and regional hospitals.

Malaria diagnostic and treatment services are offered by 6,990 public institutions, 359 faith-based organizations, and 872 private health facilities, while an additional 8,000 pharmaceutical outlets offer malaria treatment options. Preventive therapies for pregnant women are delivered in over 7,000 reproductive, child health clinics. The estimate for reliance on the private sector in mainland Tanzania is that approximately 40 percent of patients with fever seek treatment at private health facilities.

OTHER CONTEXTUAL INFORMATION

Tanzania hosts nearly 400,000 refugees and asylum seekers, most of whom are refugees located in three camps in Kigoma region, with the majority of the refugee population being unaccompanied or separated children. Infectious diseases, including malaria, are the leading causes of morbidity and mortality in the camps.

III. NMCP STRATEGIC PLAN

Tanzania's National Malaria Strategic Plan (NMSP) 2021–2025 outlines a long-term vision of a society free from malaria. The mission articulated in the strategy is that all Tanzanians have equitable access to sustainable, quality, effective, safe, and affordable malaria preventive and curative services through efficient collaborative partnership and community ownership. The national goal is to reduce the average malaria prevalence in children under five years of age (*Plasmodium falciparum* parasite rate [*pfpr*]) from 7 percent in 2017 to less than 3.5 percent in 2025. Further, there are targets for each of the epidemiological strata, identified in a nationwide stratification exercise conducted in 2017. These targets are to reduce malaria burden in moderate to high-risk strata, from 15 percent *pfpr* in 2017 to less than 7.5 percent *pfpr* in 2025 and to maintain and further reduce transmission in low and very low prevalence in areas targeting elimination from 1 percent *pfpr* in 2017 to less than 0.5 percent *pfpr* in 2025.

The strategy to achieve these targets consists of six components, the first three as core strategies and the last three as support strategies: 1) Integrated malaria vector control; 2) Malaria diagnosis, treatment, and preventative therapies; 3) Surveillance monitoring, and evaluation; 4) Commodities and logistics management; 5) Social behavioral change and advocacy; and 6) Program management. Each strategic component has specific objectives and outcomes, with specific intervention packages that vary by epidemiologic stratum.

IV. KEY MALARIA DATA

EVOLUTION OF KEY SURVEY-BASED MALARIA INDICATORS

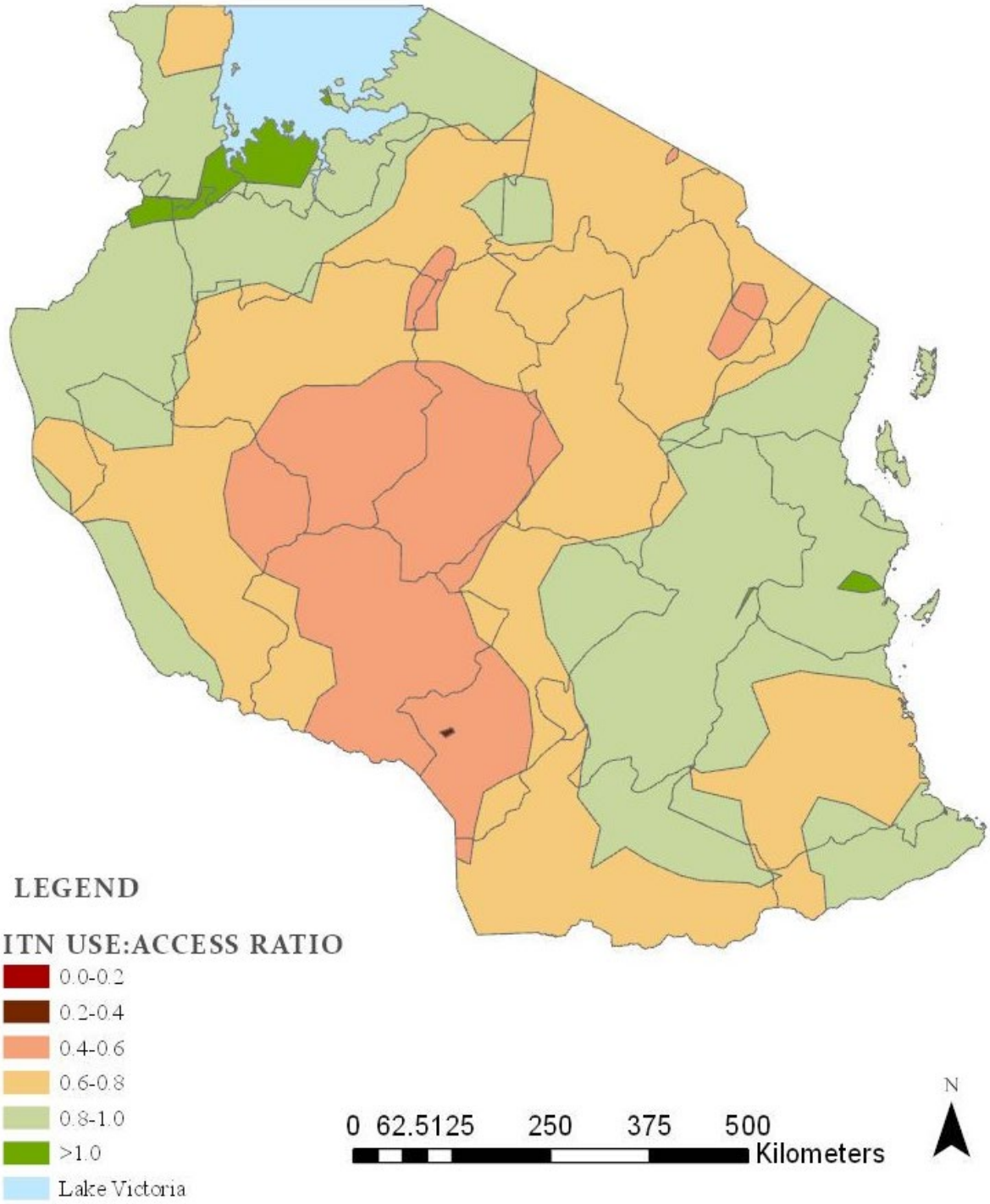
Table 3: Key Survey Indicators

Indicator	2004–05 DHS	2010 DHS	2015–2016 DHS-MIS	2017 MIS
% Households with at least one insecticide-treated mosquito nets (ITN)	23	63	65	78
% Households with at least one ITN for every two people	N/A	N/A	39	42
% Population with access to an ITN	N/A	N/A	56	53
% Population that slept under an ITN the previous night	N/A	45	49	52
% Children <5 years of age who slept under an ITN the previous night	16	64	54	54
% Pregnant women who slept under an ITN the previous night	15	57	54	51
% Children <5 years of age with a fever in the last two weeks for whom advice or treatment was sought	N/A	65	80	75
% Children <5 years of age with a fever in the last two weeks who had a finger or heel stick	N/A	N/A	36	43
% Children receiving an artemisinin-based combination therapy (ACT) among children <5 years of age with a fever in the last two weeks who received any	N/A	N/A	N/A	89

Indicator	2004–05 DHS	2010 DHS	2015–2016 DHS-MIS	2017 MIS
antimalarial drug				
% Women who attended 4 antenatal care (ANC) visits during their last pregnancy	61	43	51	N/A
% Women who received two or more doses of Intermittent preventive treatment for pregnant women (IPTp) during their last pregnancy in the last two years	22	27	35	57
% Women who received three or more doses of IPTp during their last pregnancy in the last two years	N/A	N/A	8	26
<5 years of age mortality rate per 1,000 live births	133	93	79	N/A
% Children <5 years of age with parasitemia by microscopy	N/A	N/A	6	N/A
% Children <5 years of age with parasitemia by rapid diagnostic test	N/A	N/A	15	8

DHS: Demographic and Health Survey; MIS: Malaria Indicator Survey

Figure 4: Tanzania ITN Use:Access Ratio Map



Source: MIS 2017

Table 4: Evolution of Key Malaria Indicators Reported through Routine Surveillance Systems

Community-level data are not integrated into the broader Health Management Information System (HMIS), so these numbers only include facility-level data.

Indicator	2017	2018	2019	2020	2021
# All-cause patient consultations	54,228,015	44,880,013	47,267,309	43,330,837	41,475,952
# Suspect malaria cases[1]	N/A	N/A	N/A	N/A	N/A
# Patients receiving diagnostic test for malaria[2]	17,883,913	22,275,989	24,394,153	21,958,066	20,259,970
Total # malaria cases[3]	5,954,189	6,547,499	7,096,018	6,311,437	4,616,284
# Confirmed cases[4]	5,658,839	6,438,519	6,980,683	6,267,344	4,601,863
# Presumed cases[5]	295,350	108,980	115,335	44,093	14,421
% Malaria cases confirmed[6]	95%	98.3%	98.4%	99.3%	99.7%
Test positivity rate (TPR)[7]	31.6%	28.9%	28.6%	28.5%	22%
Total # <5 years of age malaria cases[8]	2,277,994	2,464,013	2,968,782	2,793,863	2,046,150
% Cases in children <5 years of age[9]	38.3%	37.6%	41.8%	44.3%	44.5%
Total # severe cases[10]	334,711	324,747	335,250	311,640	213,379
Total # malaria deaths[11]	3,680	2,541	2,110	2,414	1,864
# Facilities reporting[12]	8,153	8,505	8,709	9,022	9,022
% Data completeness[13]	99.7%	99.5%	99.7%	99.8%	99.8%

1 Number of patients presenting with signs or symptoms possibly due to malaria (e.g., fever), Tanzania does not capture fever or suspected malaria cases in HMIS/DHIS2; 2 Rapid diagnostic test 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 # confirmed cases divided by total # cases; 7 Confirmed cases divided by # patients receiving a diagnostic test for malaria (rapid diagnostic test or microscopy); 8 Outpatient and inpatient, confirmed and unconfirmed; 9 Total # <5 years of age cases divided by total # of cases; 10 Severe cases are defined in a patient with P. falciparum asexual parasitemia and no other obvious cause of symptoms, the presence of one or more of the following clinical features: behavioral changes, prostration/extreme weakness, coma, respiratory distress, convulsions, vomiting everything, inability to drink or breast feed, circulatory collapse/shock, pulmonary edema, bleeding tendency/DIC, jaundice, acute renal failure, and hemoglobinuria; 11 All ages, outpatient, inpatient, confirmed, and unconfirmed; 12 Total # of health facilities reporting data into the HMIS/DHIS2 system that year; 13 # monthly reports from health facilities divided by # health facility reports expected (average for the calendar year).

V. OTHER IMPLEMENTATION INFORMATION

Results of Durability Monitoring

A previous study was conducted between 2013 and 2016 with other funding, and a study supported by the Global Fund is currently underway. Following the completion of this study, NMCP, PMI and other stakeholders will discuss the findings together.

Table 5: Summary of Completed Therapeutic Efficacy Studies (TES)

PMI provides technical and financial support for TES conducted annually following the standard WHO protocol at eight sentinel sites (alternating four sites each year) in mainland Tanzania, including molecular testing of antimalarial resistance markers for first and second-line ACTs.

Year	Site	Treatment arm(s)	Efficacy (PCR-corrected adequate clinical and parasitological result) for each drug at each site
2019[1]	Igombe, Simbo	Artemether-lumefantrine (AL)	98%
2019[1]	Ipinda, Nagaga	AL	100%

1 United States Agency for International Development. (2020). Efficacy and Safety of Artemether-Lumefantrine for the Treatment of Uncomplicated Falciparum Malaria: Mainland Tanzania. U.S. President's Malaria Initiative.

VI. KEY POLICIES

Table 6: Policies in Tanzania

Policy, operational, and guidance documents can be viewed and downloaded from the MOHCDGEC health digital library.

Health Sector Strategic Plan (2021–2026)	
National Malaria Strategic Plan (2021–2025)	
National Operational Guideline For Community-Based Health Services (2021)	
National Guidelines For Malaria Diagnosis, Treatment And Preventive Therapies (2020)	
Monitoring and Evaluation Strategic Framework (2020–2025)	
Malaria Surveillance, Monitoring and Evaluation Plan (2021–2025)	
National Digital Health Strategy (2019–2024)	
Digital Health Investment Roadmap (2017–2023)	
Communication Guide For Malaria Control Interventions (2015–2020)	
National Pharmaceutical Action Plan	
National Strategy for Vector Control (2019–2024)	
National Guidelines For Integrated Malaria Vector Control (2016)	
What is/are the first-line treatment(s) for uncomplicated *P. falciparum* malaria*?	AL
What is/are the second-line treatment(s) for uncomplicated *P. falciparum* malaria*?	Artesunate-Amodiaquine (ASAQ) and Dihydroartemisinin-Piperaquine (DP)
What is/are the first-line treatment(s) for uncomplicated *P. vivax* malaria?	N/A
What is the first-line treatment for severe malaria?	Injectable artesunate
In pregnancy, what is the first-line treatment for uncomplicated *P. falciparum* malaria in the first trimester?	AL

In pregnancy, what is/are the first-line treatment(s) for uncomplicated *P. falciparum* malaria in the second and third trimesters?	AL
What is/are the first-line treatment(s) for *P. vivax* malaria during pregnancy?	N/A
In pregnancy, what is the first-line treatment for severe malaria?	Injectable artesunate
Is pre-referral treatment of severe disease recommended at peripheral health facilities? If so, with what drug(s)?	Rectal artesunate can be administered as a pre-referral medication in places where parenteral artemisinin administration is not possible.
Is pre-referral treatment of severe disease with rectal artesunate recommended for community health workers?	No
What is the # of community health workers CHWs) currently providing iCCM?	Tanzania does not currently implement Integrated Community Case Management (iCCM). However, a total of 104 Community-Owned Resource Persons (CORPs) have been trained on malaria community base management (mCCM).
What is the country's target for the number of CHWs providing iCCM?	NMCP targets one CORP per each eligible and selected village. Currently mCCM selected villages are 273 (only 104 (38%)) villages have CORPs.
What percent of the country's target is met?	38%
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?	Yes, testing and treatment can be completed by CORPs (Required to be a retired nurse or medical professional).
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?	2nd trimester, 20 weeks.
Do the national ANC guidelines reflect the WHO 2016 recommendation of 8 ANC scheduled contacts (plus one additional contact for early initiation of IPTp at 13-16 weeks)? If not, how many ANC contacts are recommended?	Yes, the 2018 ANC Guidelines recommends 8 contacts. Tanzania does not have additional 13-16 weeks, the first dose is scheduled for 20 weeks.

What is the status of training ANC providers on the WHO recommended 8+ contacts?	PMI has rolled out the WHO recommended 8+ contacts and distributed the updated guideline in the Lake zone and Southern zone regions.
Have HMIS/DHIS2 and ANC registers been updated to include 8+ contacts?	The HMIS has not been updated.
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 6 months prior?	Yes, the IPTp data is collected as single month
Is ANC/IPTp provided by facility staff conducting ANC outreach to communities?	No
Can CHWs deliver IPTp and if so, which specific cadres and beginning with which dose?	No, there isn't a community IPTp program

VII. PARTNER LANDSCAPE

Table 7: Partner Landscape

Partner	Key technical interventions	Geographic coverage	Funding amount or in-kind contribution	Timeframe
Global Fund	• Procure and distribute ITNs via mass campaigns and continuous distribution through health facilities • Procure and distribute ACTs and RDTs • Malaria Service and Data Quality Improvement (MSDQI) implementation	• Non-PMI supported regions for ITN mass campaigns • Nationally for ITN continuous distribution • MSDQI implementation in non-PMI supported regions	$60.2M	CY 2021-23
Government of Tanzania	• Human resource • Infrastructure • Commodities procurement, supply chain	*National*	*Unknown*	
Swiss Development Corporation - Swiss Tropical Public Health Institute	• Support larval source management (LSM) implementation and monitoring • Technical guidance on surveillance, monitoring, and evaluation and case management	• LSM in Tanga region • Technical guidance national	$1.1M	CY 2021-2025