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CAMEROON 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. Cameroon became a PMI partner country in FY17. Please see the Cameroon Malaria Operational Plan for more information on PMI's approach and investments.

II. CONTEXT

Malaria is the most widespread endemic disease in Cameroon, responsible for greater than 2 million reported cases and absenteeism from school and work annually. Plasmodium falciparum (*P. falciparum*) is the predominant species of mosquito responsible for transmission, with *An. gambiae* s.l. the primary vector. Although the number of cases recorded in health facilities has stagnated since 2011 nationally, there has been an increasing trend starting in 2017. The number of deaths is on a downward trend since 2000 although it has been stagnant between 2017 and 2019. In response to this increasing burden, the Government of Cameroon has made the fight against malaria a priority, highlighting it in the country's Health Sector Strategy (2016–2027).

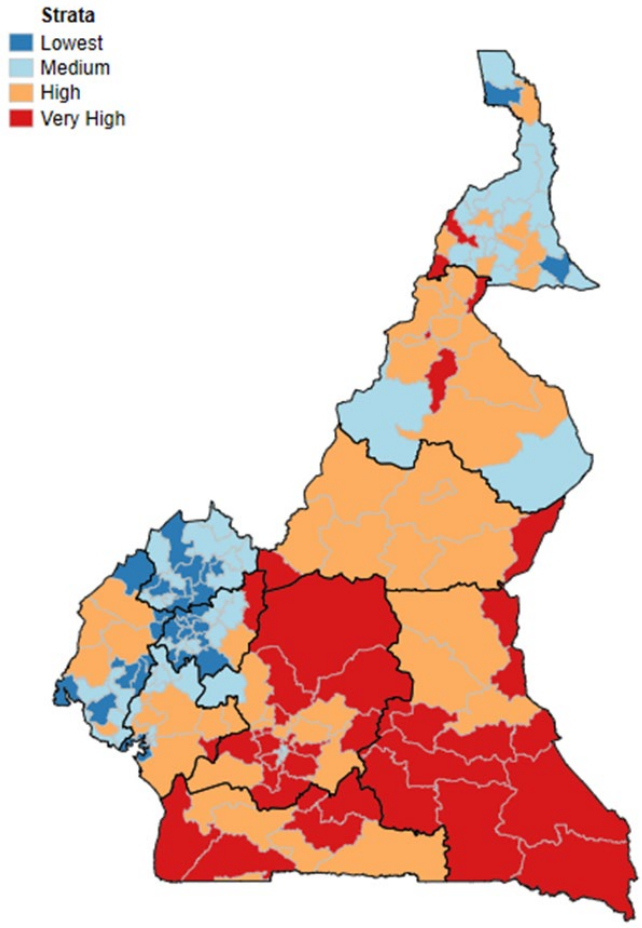
Table 1: General Demographics and Malaria Situation

Population	27,795,843 (Cameroon National Institute of Statistics projections, 2022)
Population at risk of malaria	27,795,843 (District Health Information Software 2 [DHIS-2], 2022)
Malaria prevalence	24% among children 6-59 months via rapid diagnostic test (RDT) (Cameroon Demographic and Health Survey [DHS], 2018)
Malaria incidence/1,000 population at risk	113.4 (National Malaria Control Program [NMCP] Annual report, 2021)
Peak malaria transmission	Varies by region. In PMI-focus areas, the north and far north regions, peak transmission is July to November.

STRATIFICATION

Figure 1 shows the overall malaria burden by district as estimated during a stratification exercise conducted in 2020 with the support of the World Health Organization (WHO). The risk categories were created using data on malaria prevalence, malaria incidence, and all-cause mortality rate in children under five years of age. Note that PMI support is currently focused in the north and far north regions of the country.

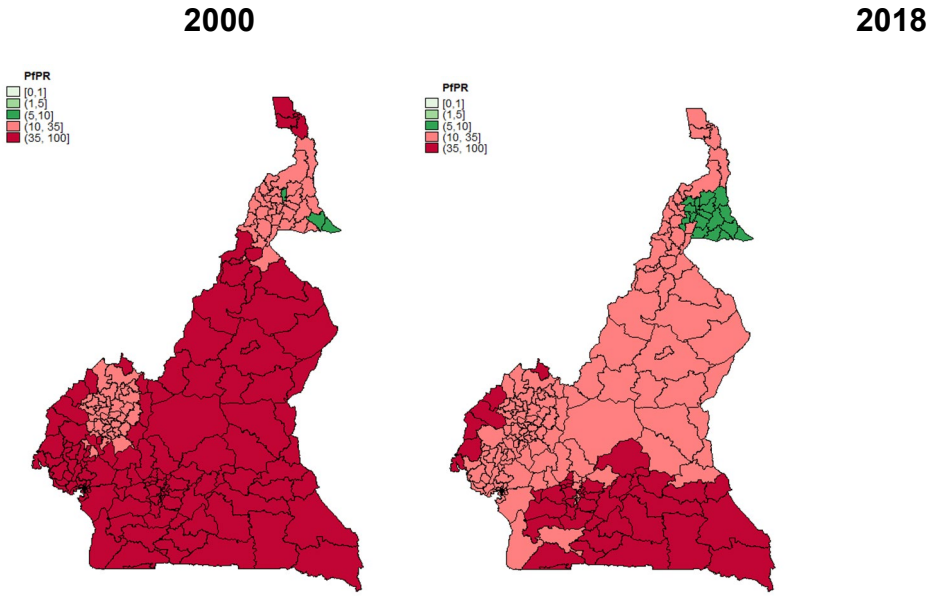
Figure 1: Malaria Risk Map



Source: GMP, WHO 2020

Figure 2 shows the change in malaria prevalence by district comparing 2000 and 2018, measured by *Plasmodium falciparum* prevalence rate (PfPR) modeling during a malaria stratification exercise. Substantial declines in PfPR are evident across most districts.

Figure 2: Malaria Prevalence by District, 2000 and 2018



Source: GMP, WHO 2020

Figure 3: National and Regional Malaria Prevalence in the North and Far North, 2011 and 2018

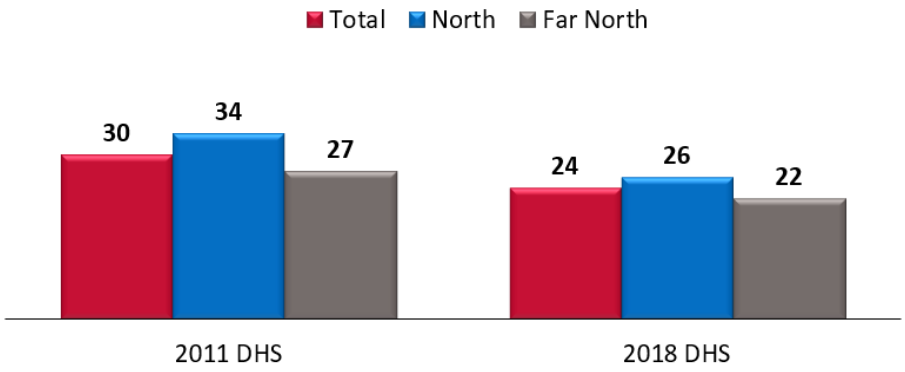
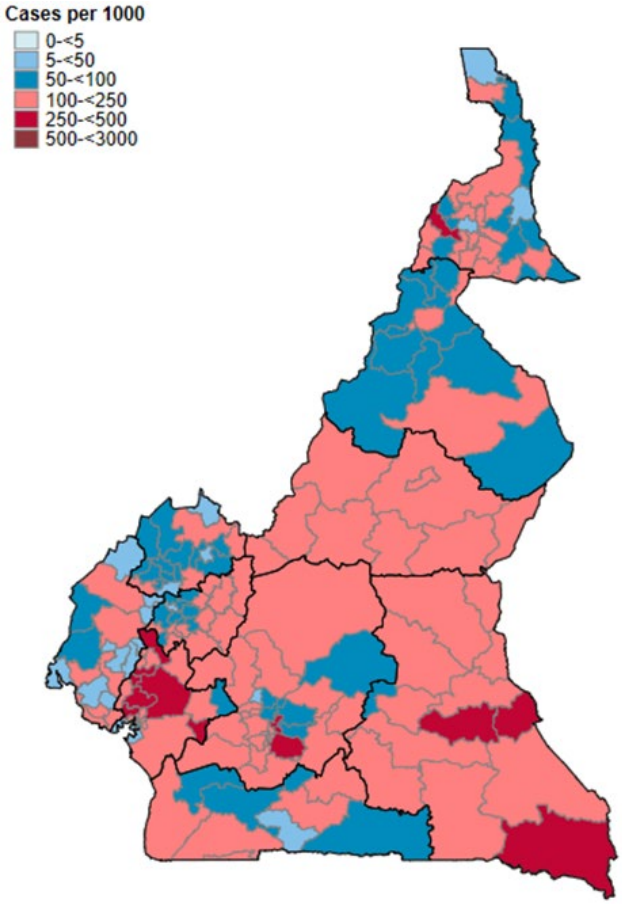


Figure 3 shows the prevalence of malaria as measured by RDTs among children 6 to 59 months of age in the 2011 and the 2018 DHSs. National estimates and estimates from the north and far north regions are shown.

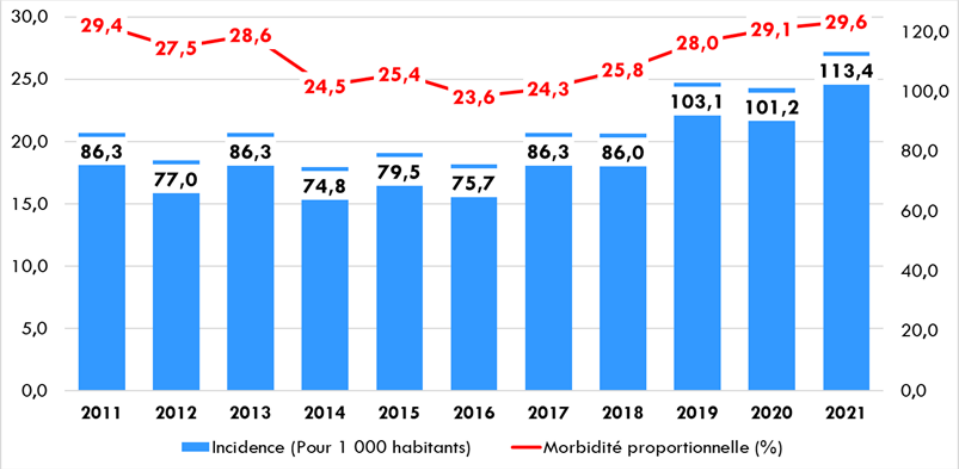
Figure 4: Incidence by District



Source: GMP, WHO 2020

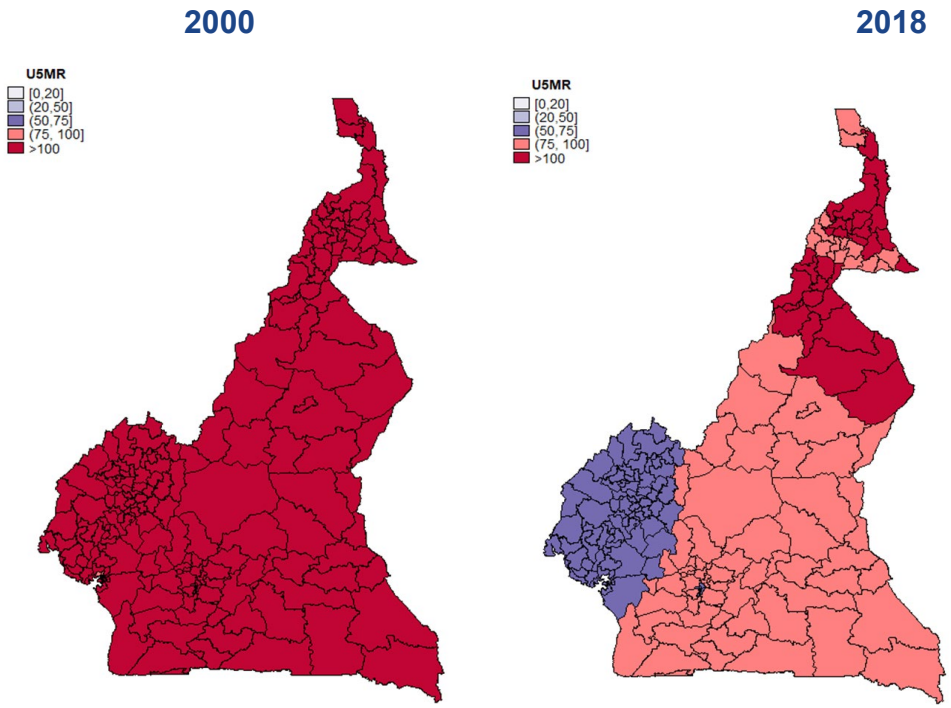
Figure 4 shows malaria incidence by district from 2019 adjusted for testing and reporting rates, while Figure 5 shows the trends in annual national malaria incidence between 2011 and 2021 alongside the proportional malaria morbidity (the percent of all-cause outpatient visits that are due to malaria). As shown, there is significant district-level heterogeneity in malaria incidence and an indication of increasing incidence over time, although the proportional malaria morbidity has not changed much over the past decade. Figure 6 shows all-cause under-five years of age mortality rates by district in 2000 and in 2018 with significant declines evident in most of the country, aside from most districts in the far north and north regions.

Figure 5: Incidence Trend between 2011 and 2021



Source: NMCP Annual report, 2021

Figure 6: Under-five Years of Age All-cause Mortality by District, 2000 and 2018



Source: WHO GMP 2020

Table 2: Malaria Parasites and Vectors

Principal Malaria Parasites	*Plasmodium falciparum* (National Strategic Plan [NSP], 2019)
Principal Malaria Vectors*	*An. gambiae* s.l. is the primary vector. Other vectors include *An. moucheti*, *An. nili*, *An. funestus*, and *An. arabiensis*. (Vector Control Strategy, 2021). In the 10 sites tested, resistance to pyrethroids was detected and piperonyl butoxide (PBO) pre-exposure increased mortality but did not fully restore pyrethroid susceptibility. Susceptibility to clothianidin was detected in all tested populations, while all but one site showed susceptibility to chlorfenapyr (200ug/ml). Resistance to bendiocarb was detected at 6 sites and to pirimiphos-methyl at all sites. More information available here.

*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

Cameroon is divided into 10 semi-autonomous administrative regions, each headed by a governor. The 10 regions are divided into 58 divisions, each headed by a divisional officer. Each division is divided into subdivisions, 360 in total, each made up of a local council and headed by a mayor. Cameroon's health map is different from the administrative map at the sub-regional level. For health, a regional delegate heads each region, but the regions are then subdivided into health districts. The health system of Cameroon is organized according to a pyramidal structure with three levels:

- At the central level, we find the central services of the Ministry of Public Health, the general and central hospitals. This first level handles administrative matters, political direction, development of concepts, policies, and strategies. It also includes reference care structures, such as the five reference hospitals, the university teaching hospital, the seven central hospitals, and the National Central Supply of Essential Medicines and Medical Consumables (CENAME), as well as their boards of directors or management committees.
- The intermediate level includes the 10 regional public health delegations that have a technical support role for health districts and programs, 14 regional hospitals, as well as the 10 Regional Funds for Health Promotion for supply chain management.

- The operational or peripheral level is organized in 200 health districts and 1,795 health areas with district health services led by a district medical officer who oversees the implementation of health programs and care services. There are also 234 district hospitals, 1,384 medicalized health centers, 2,016 integrated health centers, and their dialogue structures (a platform for co-management and co-financing of health in Cameroon that brings together community representatives and health staff to discuss health issues) and community participation, 2,506 ambulatory health centers, and 1,298 structures for dialogue and community participation (district health committee [*comité de santé district* or COSADI], district management committee [*comité de gestion district* or COGEDI], management committee [*comité de gestion* or COGE], health committee [*comité de santé* or COSA]). These structures include those of the public sector and private sectors. There is no clear distinction between the private and public health structures in Cameroon. National health policies and treatment guidelines, including elimination of user fees, apply the same way in both sectors.

Table 3: Levels of the Health System in Cameroon

Level	Administrative structure	Function	Care facilities	Dialogue structures
Central	• Office of the Minister, General Secretariat. • Technical departments (DLMEP, Programs)	• Policy development • Coordination • Regulation • Supervision	• General Hospitals, Hospital and University Center, Central hospitals and CENAME, CPC, • CHRACERH., LANACOME, CIRCB, ONSP	• National Council of Health, Hygiene and Social Affairs
Intermediate	• 10 Regional Delegations of Public Health	• Technical support to Health Districts • Coordination • Regulation • Supervision	• Regional and hospitals; Regional Funds for Health Promotion.	• Regional Funds for Health Promotion
Peripheral	• 200 Health Districts (only 197 are functional)	• Service delivery • District Coordination • Regulation	• District Hospitals • Medicalized Health Centers • IHC	• COSADI; COGEDI • COGE • COSA

Note: DLMEP: *Département de Lutte contre les maladies, épidémies et pandémies;* CHRACERH: *Centre Hospitalier de Recherche et Application en Chirurgie Endoscopique en Reproduction Humaine*; LANACOME: *Laboratoire Nationale de Controle des Medicaments Essentielle*; CIRCB: *Centre Internationale de Recherche Chantal Biya*; ONSP: *Observatoire Nationale de Santé Publique*; IHC: Integrated Health Center; COSADI: *Comité de Santé District*; COGEDI: *Comité de gestion District*; COGE: *Comité de gestion*; COSA: *Comité de Santé*

The Health Sector Strategy 2016-2027 prioritizes the fight against malaria. The NMCP is the technical structure of the Ministry of Public Health under the disease control department responsible for the coordination and implementation of activities. It is integrated into the National Health System and includes a central technical coordination group and 10 regional technical groups.

The provision of routine antimalarial care is integrated into the care packages recommended to the 6,124 public and private health facilities in the country but only 5,795 offer malaria services. This offer is reflected on the one hand, in the supply of

health facilities with RDTs, antimalarial drugs, the distribution of long-lasting insecticide-treated mosquito nets (ITNs), and the administration of intermittent preventive treatment of malaria to pregnant women (IPTp) received in antenatal care (ANC) consultations. On the other hand, it involves the training of actors and the awareness-raising of beneficiary populations. Routine malaria control is periodically strengthened by the organization of mass ITN distribution campaigns and seasonal malaria chemoprevention (SMC) campaigns, which involve all levels of the health system.

To achieve its objectives, the NMCP has 41 technical and financial staff at the central level and a team of four to six people in each of the 10 regional technical groups.

- The national management system for medicines and other pharmaceutical products follows the health pyramid (ACT Management Guidelines, page 5). The CENAME ensures the acquisition, storage, and distribution of medicines and medical devices to the 10 regional funds for health promotion. At the regional level, these funds ensure the storage and distribution of antimalarial drugs to health facilities. The health facilities ensure the dispensing of medicines to users and the supply of community health workers (CHWs).

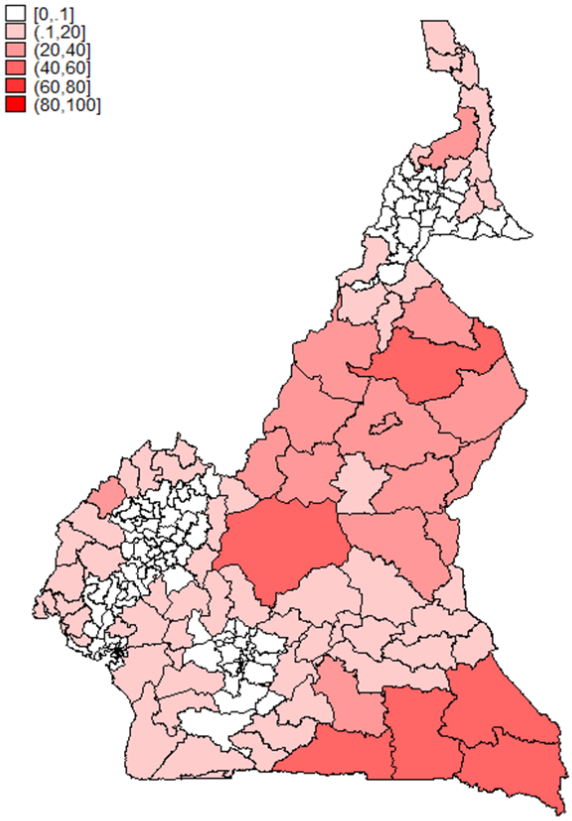
- Health financing is mainly provided by households (70.4 percent), the State (14.5 percent) and bilateral and multilateral technical and financial partners (7.1 percent) (National Health Accounts 2012, page 38). Cameroon has not yet met national and international commitments on health financing, including the Abuja commitment. The proportion of the state budget devoted to health stands at 4-6 percent. For the fight against malaria, the activities are mainly financed by the Global Fund to Fight AIDS, Tuberculosis, and Malaria (Global Fund), PMI, the State, and households through cost recovery on inputs. Cameroon plans to implement universal health coverage from 2020. Universal health coverage in Cameroon is in its first phase, which considers ongoing initiatives related to user-fee elimination for treatment and prevention of malaria in children under five years of age and pregnant women in health facilities and in communities.

- The Health Information and Monitoring and Evaluation System of the Malaria Control Strategic Plan 2019–2023 is inspired by the Integrated Monitoring and Evaluation Plan of the Health Development Plan 2016–2020. The reporting system is integrated into the National Health Information System. From 2013 to 2021, malaria data reporting improved at the national level. The number of health facilities that report into the system has increased from 3,278 to 6,124. However, efforts still need to be made to capture data from all 5,795 health facilities that manage malaria. In addition, the collection of data on malaria indicators is integrated into national surveys (DHS 2011 and 2018, Multiple Indicator Cluster Survey [MICS] 2014, planned Malaria Indicator Survey [MIS] 2021).

- Regarding the private sector, the Health Sector Strategy 2016–2027 distinguishes three sub-sectors (public, private, traditional). Private sub-sectors include: (i) professional representations, (ii) parastatal and private companies integrating health into their social responsibility, (iii) civil society organizations, (iv) dialogue structures, (v) non-governmental organizations, (vi) community-based organizations, and (vii) private health facilities. The private subsector is complementary to the public subsector. They represent 54 percent of the service delivery, including private confessional health facilities (13 percent) and private secular health facilities (41 percent) (DHIS2). The main findings on this sub-sector that stand out are: (i) the private sector is investing in the fight against the three diseases in Cameroon; (ii) the potential and contribution of the private sector in the fight against the three diseases is not documented; (iii) coordination of private sector responses to the response is weak; (iv) there is a lack of knowledge of care providers' care protocols; (v) there are difficulties in collecting data and information to be put at the service of national programs; and (vi) the private sub-sector has untapped assets in terms of program management, logistics, human resources management, and high-level advocacy (Country Dialogue Report 2020).

- Community participation is organized through dialogue structures set up at different levels. These include the health area health committee at the level of each health area, district health committee (COSADI) for each health district, hospital management committee (COGE) for each district hospital, and the regional fund for health promotion at the regional level. Most health areas had CHWs with different roles and profiles depending on the projects or programs that support them. Since 2016, community-driven interventions (CDIs) have been harmonized based on UNICEF pilot studies and multi-purpose CHWs have been trained to promote health and prevent and manage most health-related disabilities in their communities, including malaria. In total, the country has about 8,936 multi-purpose CHWs in 120 health districts for a total need of at least 11,000 outside the additional needs of insecure areas. The need is defined based on the population size and whether the health area is in an urban or a rural setting (see Figure 7). In a rural setting there is one CHW for 1,000 inhabitants while in urban areas there is one CHW for 2,500 inhabitants. Areas of insecurity need to be completely covered. These CHWs are funded by different partners, as shown in Table 4. In addition, there are several civil society organizations and community-based organizations working in the field of public health that support the implementation of CDIs. A national CDI strategic plan is being developed for the institutionalization and ownership of CHWs.

Figure 7: Percentage of Population Outside 5 km of Public Health Facilities, 2020



Source: GMP, WHO 2020

Table 4: Mapping of CHWs in Cameroon

Funding Body	Implementing partner	Regions covered	Districts Covered	Health areas covered	Number of CHW
Global Fund	Plan International	8	53	498	3,790
Global Fund	REACHOUT	2	27	154	1,920
PMI	Impact Malaria	2	16	156	1,700
UNICEF	DRSP	2	21	217	1,256
Mairie Akom 2	Mairie Akom 2	1	1	3	30
JHPIEGO	JHPIEGO	1	1	9	
Medicine for Humanity	Medicine for Humanity	1	7	11	205
Total				**1,048**	**8,936**

OTHER CONTEXTUAL INFORMATION

The burden of malaria has been steadily on the rise from 2016 to 2021, with incidence moving from 79.5 cases to 113.7 cases per 1,000 population respectively. This steady rise concerns children below five years of age and pregnant women particularly. Mortality, on the other hand, has improved but remains high, especially among children below five years of age. The coverage of the country in some key interventions, such as preventive treatment of malaria in pregnancy, mosquito bed net use, and community health workers remain low. This is mainly due to poor governance and a 45 percent gap in financing of the fight against malaria. Other drivers of the burden include vector diversity and rising vector insecticide resistance to pyrethroids, poor motivation of the workforce, and poor access to health services. The presence of community health workers has enabled access to care for those most in need. In Cameroon, treatment of malaria in children below five years of age is free and several preventive interventions are free to pregnant women and children. Prospects of including municipal councils and engagement of the private sector and civil society are promising. Other important challenges include:

- Weak intersectoral collaboration and weak community participation
- Supply chain management problems with frequent commodity stockout, and irrational use of injectable artesunate. A national plan for the transformation of the supply chain has been elaborated, which PMI will be buying into.

Cameroon faces an unprecedented humanitarian situation in the far north region, eastern region, and in the northwest and southwest regions caused by armed conflicts, intercommunity wars, and the presence of refugees. This situation has led to the disruption of health services and increased health needs of the refugees, internally displaced persons, and their host communities. According to the United Nations Office for the Coordination of Humanitarian Affairs, 3.9 million people are in need of humanitarian assistance in Cameroon, including about 933,000 internally displaced persons, 531,000 returnees, 486,000 refugees, and about 1.6 million people in host communities. Malaria is one of the most common public health problems among these affected populations.

III. NMCP STRATEGIC PLAN

Cameroon's current National Strategic Plan (NSP) for malaria control covers the period 2019–2023 and is the fifth iteration of a national strategy. The NSP articulates a vision of a Cameroon free from malaria. The stated mission is to ensure universal access to effective and affordable malaria prevention and treatment interventions for all Cameroonians, especially the most vulnerable and marginalized. The strategic focus is to accelerate intervention scale-up to reach universal coverage of key interventions and achieve a lasting impact on malaria morbidity and mortality. In addition to prioritizing the most vulnerable, interventions are targeted to zones with high population density, high endemicity, and intense seasonal transmission as recommended by the High Burden to High Impact Initiative of the WHO.

The goal of the 2019–2023 NSP is to contribute to improving the health of Cameroonians by reducing the health and socioeconomic burden of malaria. The objectives are to reduce malaria morbidity and mortality by 60 percent from 2015 levels by 2023, to reduce malaria incidence from 2015 levels by 60 percent by 2023, and to reduce malaria transmission to a very low level (pre-elimination threshold) in some health districts in the Sahelian zone of the country (i.e., far north region) by 2023.

The NSP outlines specific interventions and activities that fall under six strategic areas. These activities are summarized below along with their associated objectives:

I. Prevention: Includes ITN distribution via mass campaigns and routine channels, promotion of ITN use, IPTp, SMC for children 3 to 59 months of age in the north and far north regions, and indoor residual spraying (IRS) in 15 districts. The routine ITN distribution strategy will expand beyond distribution to pregnant women through ANC to include the Expanded Program for Immunization platform for children and introduction of PBO ITNs in regions with evidence of vector metabolic resistance to insecticides and low efficacy of currently used ITNs. Larval source management in urban settings such as Yaoundé and Douala is also part of the prevention strategy, with pilot activities being undertaken to obtain preliminary data on effectiveness. Larval source management is a strategy included in the NSP against malaria. Some studies carried out in Cameroon by the Organization for the Coordination of the fight against Endemic diseases in Central Africa (OCEAC) have demonstrated its effectiveness and the NMCP is still considering its roll out.

II. Case management: Includes universal diagnostic confirmation of suspect cases, treatment of confirmed cases at health facility and community level according to national guidelines, switch to artemether-lumefantrine (AL) rather than artesunate-amodiaquine (AS/AQ) as the first-line artemisinin-based combination therapy (ACT) in the north and far north regions due to SMC implementation, pretreatment of severe malaria and referral with rectal artesunate (RAS) at the community level, scale-up of integrated community case management (iCCM), pharmacovigilance, and supply chain strengthening. A quality assurance/quality control system will ensure strengthened diagnostics throughout the country.

III. Communication: Includes advocacy, behavior change interventions, social mobilization, social marketing and private partnership, and training of health agents, community actors, and journalists.

IV. Training and research: Includes training and creation of a critical mass of researchers (epidemiologists, entomologists) and the organization of working sessions on universal health coverage at all levels of the health pyramid.

V. Surveillance, monitoring, evaluation, and epidemic response: Includes monitoring and evaluation (M&E) system strengthening, implementation of M&E, epidemiologic surveillance system strengthening, and epidemic response. The NMCP is elaborating a sentinel surveillance model that will focus on ensuring high-quality data from a purposefully selected group of health facilities throughout the country. These sites will also serve as research platforms for therapeutic efficacy studies and other operational research questions prioritized by the NMCP.

VI. Program management: Includes mobilization of funds, financial management, governance, planning, and partnership coordination. PMI works closely with the NMCP

and other partners to coordinate support for activities to best support the National Strategy for Malaria Control. PMI and the Global Fund provide the majority of malaria funding to Cameroon. Other development assistance for malaria comes from WHO, the United Nations Children's Fund (UNICEF), and the United Nations Population Fund (UNFPA).

Aside from some central-level activities, the bulk of PMI funding supports NMCP activities in the north and far north regions of the country, while the Global Fund focus is in the other eight regions.

IV. KEY MALARIA DATA

EVOLUTION OF KEY SURVEY-BASED MALARIA INDICATORS

Table 5: Key Survey Indicators

Indicator	2011 DHS-MICS	2011 MIS	2014 MICS	2018 DHS
% Households with at least one ITN	36%	36%	71%	73%
% Households with at least one ITN for every two people	9%	N/A	37%	41%
% Population with access to an ITN	N/A	N/A	56%	59%
% Population that slept under an ITN the previous night	15%	15%	48%	54%
% Children <5 years of age who slept under an ITN the previous night	21%	21%	55%	60%
% Pregnant women who slept under an ITN the previous night	20%	20%	52%	61%
% Children <5 years of age with a fever in the last two weeks for whom advice or treatment was sought	N/A	67%	33%	61%
% Children <5 years of age with a fever in the last two weeks who had a finger or heel stick	N/A	N/A	16%	21%
% Children receiving an ACT among children <5 years of age with a fever in the last two weeks who received any antimalarial drug	3%	13%	15%	21%

Indicator	2011 DHS-MICS	2011 MIS	2014 MICS	2018 DHS
% Women who attended 4 ANC visits during their last pregnancy	62%		59%	65%
% Women who received three or more doses of IPTp during their last pregnancy in the last two years	N/A	N/A	26%	32%
Children <5 years of age mortality rate per 1,000 live births	122	N/A	103	79
% Children <5 years of age with parasitemia by microscopy	N/A	N/A	N/A	N/A
% Children <5 of age with parasitemia by RDT	30%	33%	n/a	24%

DHS: Demographic and Health Survey; MICS: Multiple Indicator Cluster Survey; MIS: Malaria Indicator Survey

Figure 8. ITN Use:Access Ratio Map

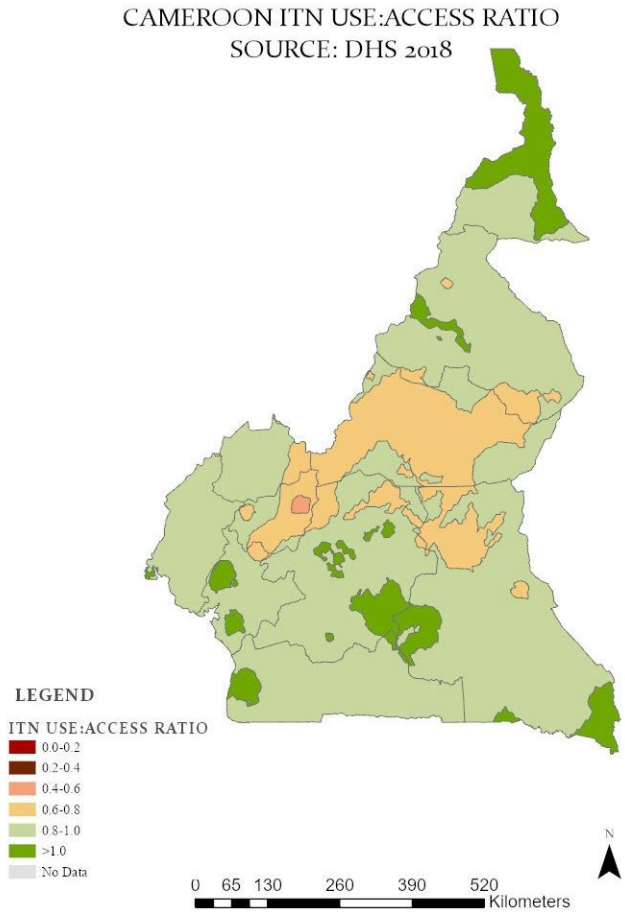


Figure 8 shows very high ITN use in the PMI-supported regions in the north and far north. On average, every person with access to an ITN uses it, with more than two people using every available ITN in most of the far north region. In the rest of the zone, the use:access ratio is between 0.8 and 1.0, meaning that almost all who have access to ITNs use them. Note that the data are from a 2018 DHS survey. New data should be available soon from an MIS that is planned for implementation in 2022.

Table 6: Evolution of Key Malaria Indicators Reported through Routine Surveillance Systems

Community-level data are integrated into the broader Health Management Information System (HMIS), and these numbers are inclusive of both community- and health facility-level data.

Indicator	2017	2018	2019	2020	2021
# All-cause patient consultations		8,294,473	9,396,959	9,108,771	13,187,423
# Suspect malaria cases[1]	3,108,722	3,410,077	3,991,275	4,000,258	5,202,307
# Patients receiving diagnostic test for malaria[2,*]	3,575,070	3,652,991	4,024,154	3,972,167	4,841,366
Total # malaria cases[3]	3,068,811	2,551,923	2,858,570	2,847,622	3,595,156
# Confirmed cases[4]	2,093,009	2,139,482	2,641,083	2,719,953	3,335,174
# Presumed cases[5]	975,802	412,441	197,994	125,822	159,982
% Malaria cases confirmed[6]	68.2%	83.8%	92.4%	95.5%	92.8%
Test positivity rate (TPR)[7,**]	58.6%	59.8%	66.1%	68.5%	68.9%
Total # children <5 years of age malaria cases[8]	1,060,589	792,507	942,069	909,655	1,193,688
% Cases in children <5 years of age[9]	34.6%	31%	32.9%	31.9%	33.2%
Total # severe cases[10, ***]	1,623,396	1,070,005	1,281,379	1,333,907	1,447,874
Total # malaria deaths[11]	3,195	3,263	4 ,528	4 ,218	3,782

Indicator	2017	2018	2019	2020	2021
# Facilities reporting[12]	4,418	5,846	5,065	5,617	5,795
% Data completeness[13]	87%	82.2%	85%	83%	89.2%

Data sources and comments:

* In Cameroon some suspected cases receive both tests (microscopy and RDT) resulting in # diagnostic tests being higher than suspected cases.

** Lower than actual situation because of an artificial increase in the denominator (see note above).

*** All malaria cases during pregnancy were considered severe cases until 2019, the new policy will be implemented in 2020

Definitions:

1 Number of patients presenting with signs or symptoms considered to be possibly due to malaria (e.g., this could be the number of patients presenting with fever or history of fever in the previous 24 or 48 hours); 2 Number of patients receiving a diagnostic test for malaria (RDT or microscopy). All ages, outpatient, inpatient; 3 Total # cases: Total number of reported malaria cases. All ages, outpatient, inpatient, confirmed and unconfirmed cases; 4 # confirmed cases: Total diagnostically confirmed cases. All ages, outpatient, inpatient; 5 # presumed cases: Total clinical/presumed/unconfirmed cases. All ages, outpatient, inpatient; 6 % Malaria Cases confirmed: # confirmed cases (#4 above) / Total # cases (#3 above); 7 Test Positivity Rate (TPR): Number of confirmed cases (#4 above)/Number of patients receiving a diagnostic test for malaria (RDT or microscopy) (#2 above); 8 Total # children <5 years of age cases: Total number of children <5 years of age cases. Outpatient, inpatient, confirmed, and unconfirmed; 9 Total # <5 cases (#8 above) / Total # of cases (# 3 above); 10 Total # of hospitalized malaria cases plus all presumed and confirmed cases of malaria during pregnancy; 11 Total # Malaria Deaths Reported: All ages, outpatient, inpatient, confirmed, and unconfirmed; 12 Total # of health facilities reporting data into the HMIS/DHIS2 system for that year' 13 Data completeness: Number of monthly reports received from health facilities/Number of health facility reports expected (i.e., number of facilities expected to report multiplied by the number of months considered)

Table 7: Disaggregated Community-Level Data

Indicator	2019	2020	2021
# Patients receiving diagnostic test for malaria from a CHW	235,838	287,358	327,726
Total # of malaria cases reported by CHWs[1]	265,459	308,636	440,021
% of CHW reported cases (among total malaria cases)[2]	9.3%	10.8%	12.0%

1 Includes all ages, confirmed and unconfirmed.

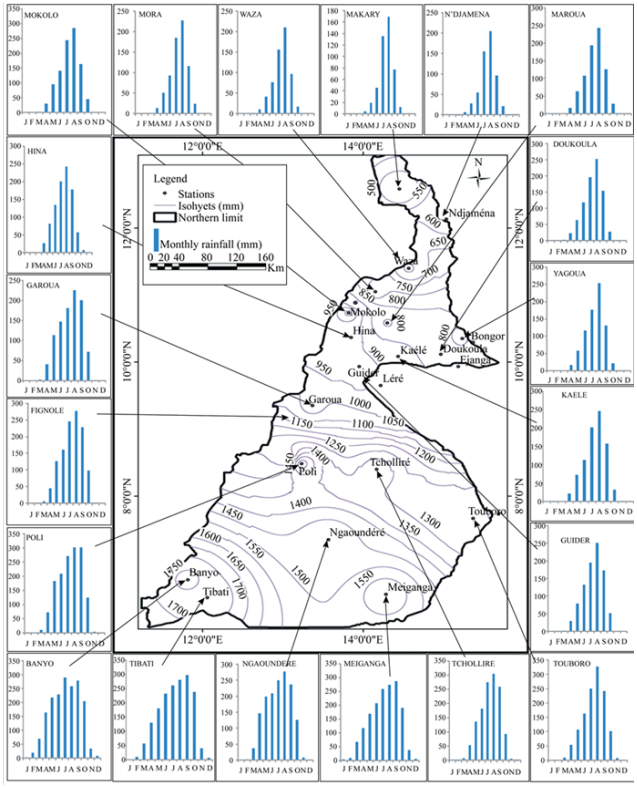
2 Total # malaria cases reported by CHWs/Total # malaria cases in previous table.

V. OTHER IMPLEMENTATION INFORMATION

SEASONAL MALARIA CHEMOPREVENTION

Eligibility of districts for SMC implementation was determined using rainfall data. Note that SMC implementation is currently limited to the districts in the north and far north regions, which are the focus regions for PMI support.

Figure 9: Seasonality of SMC Targeting



Source: Dassou et al 2016. [Trends and Geostatistical Interpolation of Spatio-Temporal Variability of Precipitation in Northern Cameroon (scirp.org)]

Table 8: Summary of Completed Therapeutic Efficacy Studies

Year	Site	Treatment arm(s)	Efficacy (PCR-corrected adequate clinical and parasitological result) for each drug at each site
2021	Center region: District Hospital Akonolinga, District Hospital Mfou, District Hospital Soa, District Hospital Mbalmayo, District Hospital Mbanjock, CMA Matomb	AL, AS/AQ	TBD*

AL = artemether-lumefantrine; AS/AQ = artesunate-amodiaquine; TBD = to be determined
*Center region samples being sent to Senegal for analysis and pending the conclusion of the Northern region sites

The ongoing TES is the first one funded by PMI. PMI looks forward to funding future studies in Cameroon.

VI. KEY POLICIES

Table 9: Policies in Cameroon

National Strategic Plan (2019-2023)	
National Surveillance, Monitoring, and Evaluation Plan (2019)	
National Digital Health Strategy (2020–2024) ***Plan Stratégique National de Santé Numérique*** (2020–2024) **National Digital Health Strategic Plan**, Ministry of Public Health (2020–2024)	
National Social Behavior Change/Communication Strategy (2019–2023)	
Plan Stratégique pour le Renforcement de la Chaîne d'Approvisionnement de Santé Publique au Cameroun (2022-2026) (March 2022)	
National Insecticide Resistance Management Plan (2022, in preparation for publication)	
Malaria Case Management Policy ***Guide de Prise en Charge du Paludisme au Cameroun à l'Usage du Personnel*** (June 2019)	
What is/are the first-line treatment(s) for uncomplicated P. falciparum malaria*?	Artesunate -Amodiaquine, (ASAQ) Artemether-Lumefantrine (AL) Dihydroartemiscinin-piperaquine (DHAP)

What is/are the second-line treatment(s) for uncomplicated P. falciparum malaria*?	Artesunate-pyronaridine (ASPY)
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?	Quinine tablets
In pregnancy, what is/are the first-line treatment(s) for uncomplicated P. falciparum malaria in the second and third trimesters?	Same as for non-pregnant adults
In pregnancy, what is the first-line treatment for severe malaria?	Injectable quinine in the first trimester and injectable artesunate from the second and third trimester.
Is pre-referral treatment of severe disease recommended at peripheral health facilities? If so, with what drug(s)?	Yes, Injectable artemether
Is pre-referral treatment of severe disease with rectal artesunate recommended for community health workers?	Yes
Community Health Policy (November 2021)	
What is the # of CHWs currently providing iCCM?	
What is the country's target for number of CHWs providing iCCM?	11,000
What percent of the country's target is met?	67%
Does the country have a policy that enables the routine, regular payment of salaries/stipends for CHWs?	In process
Do CHWs have the authority to test and treat all ages for malaria?	Yes
Prevention of Malaria in Pregnancy Policy (addressed in the NSP, 2019-2023)	
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?	16 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	Yes

recommended?	
What is the status of training ANC providers on the WHO recommended 8+ contacts?	Ongoing
Have HMIS/DHIS2 and ANC registers been updated to include 8+ contacts?	Yes
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?	Single months
Is ANC/IPTp provided by facility staff conducting ANC outreach to communities?	Yes, but not very frequently
Can CHWs deliver IPTp and if so, which specific cadres and beginning with which dose?	Yes, but only from the second dose and in areas of armed conflicts

VII. PARTNER LANDSCAPE

Table 10: Partner Landscape

Partner	Key technical interventions	Geographic coverage	Funding amount or in-kind contribution	Timeframe
Global Fund	• Support for nationwide mass campaign in 2022 • Procurement of malaria commodities for 8 regions • Training and supportive supervision in 8 regions • Vector control • Surveillance, monitoring, and evaluation	• National for ITN campaign • 8 of 10 regions for other activities	101.2M euros	Current grant covers 2021 to 2023
UNICEF	• Training of community health workers • Support in health management information and reporting system	• 16 Health districts in the North, Far North and Adamaoua regions for iCCM • National for HMIS	3.5M USD	CY 2023
GIZ	• Health Dialogue structures strengthening • Project BackupHealth	• Nationwide • Global program	2M Euro	2020-2023
World Bank	• PBF support	• Nationwide		
Bill & Melinda Gates Foundation	• (Still targeting activities)	• Nationwide		
Government of Cameroon	• Support for ITN mass campaign • HMIS • Coordination	Center, Southwest and South regions for ITN campaign Nationwide for HMIS and coordination		
Others (AKOM 2 council, IHS tower)	• CHWs support • SBC	1 Health District in the south region for AKOM II council North and Far North for IHS tower		

Note: PMI support is focused on activities in the north and far north regions of the country.