

NIGER 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 27 countries in Sub-Saharan Africa and three programs across the Greater Mekong Subregion in Southeast Asia to control and eliminate malaria. Niger began implementation as a PMI focus country in FY 2018. Please see the [Niger Malaria Operational Plan](#) for more information on PMI's approach and investments.

II. CONTEXT

Niger is a Sahel country with three-quarters of the country being the Sahara Desert; the remaining quarter, in the southern part of the country, consists of a Sahel zone. The 2020 population density in Niger was 19 people per square kilometer.¹ Niger is one of the poorest countries in the world, ranking 189 out of 191 on the Human Development Index.² The National Institute for Statistics (Institut National de la Statistique) estimated the population in 2021 at 23,594,989 people with a national growth rate of 3.9 percent; 15 percent of the population is nomadic and 84 percent of the population lives in rural areas.³ Women represent 50 percent of the population, 50 percent of the population is below the age of 15 years old, and children under five years of age account for 20 percent of the population.⁴

The fertility rate in Niger is the highest in the world, with women bearing an estimated 6.7 children.⁵ Maternal mortality is estimated at 535/100,000; one in 23 women dies due to maternal health-related causes. The mortality rate among children under five years of age was

¹ United Nations, Department of Economic and Social Affairs, Population Division.

² UNDP (United Nations Development Programme). Human Development Report 2021-22: Uncertain Times, Unsettled Lives: Shaping our Future in a Transforming World. (New York, New York, 2022).

³ République du Niger, *Plan Stratégique de Lutte Contre le Paludisme 2023-2026*.

⁴ UNICEF [website](#).

⁵ World Population Prospects 2022 revision. United Nations Population Division (New York, New York, 2022).

127 per 1,000 persons in 2012⁶ and improved to 78 per 1,000 persons in 2020.⁷ Among children under five years of age, 47.8 percent are chronically undernourished and more than 70 percent are anemic.⁸ Life expectancy is 62.4 years.⁹

According to the Enquête Harmonisée sur les Conditions de Vie des Ménages (Harmonized Survey on Household Living Conditions) conducted in 2018/2019, 41 percent of the population—more than 9 million people—are living below the poverty line, with 95 percent of them living in rural areas.¹⁰ The economy is based mainly on the agro-pastoral sector, which is a concern due to the region’s frequent climatic shocks, such as droughts and floods, leading to poor harvests and regular food shortages. Among rural and urban populations, 12 percent and 50 percent, respectively, have access to electricity.¹¹

The National Malaria Strategic Plan 2017-2023 (NMSP) estimates that 48 percent of the population has access to health centers within a radius of 0–5 kilometers. There is also an inequitable distribution of services. Although 84 percent of the population live in rural areas, only 24 percent of all health care providers are found in rural areas; 66 percent of the population has access to an “improved drinking water source,” 61 percent in rural areas and 97 percent in urban areas.

Table 1: General Demographics and Malaria Situation

Population	24,465,615 (INS, 2022)
Population at risk of malaria	24,465,615 (INS, 2022)
Malaria prevalence in children under five years of age	29% (MIS, 2021)
Malaria incidence/1,000 population at risk	204 (NMSP 2023-2026, 2021)
Peak malaria transmission	July to November

INS: *Institut National de la Statistique*, or the National Institute for Statistics; MIS: Malaria Indicator Survey; NMSP:

⁶ Institut National de la Statistique - INS/Niger and ICF International. 2013. Enquête Démographique et de Santé et à Indicateurs Multiples du Niger 2012. Calverton, Maryland, USA: INS/Niger and ICF International.

⁷ United Nations Inter-agency Group for Child Mortality Estimation (UN IGME), ‘Levels & Trends in Child Mortality: Report 2020, Estimates developed by the United Nations Inter-agency Group for Child Mortality Estimation’, United Nations Children’s Fund. (New York, New York, 2020).

⁸ UNICEF, 2018.

⁹ World Bank, 2019.

¹⁰ Poverty and Equity Brief, World Bank. (Washington, D.C., 2023):

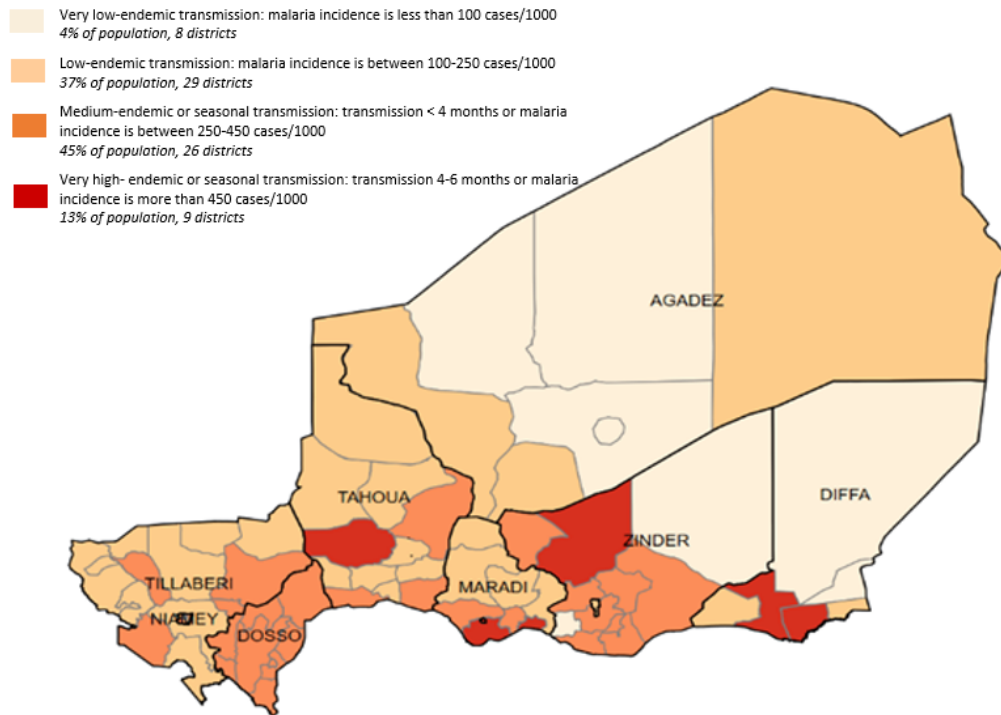
<https://www.worldbank.org/en/topic/poverty/publication/poverty-and-equity-briefs>.

¹¹ Tracking Sustainable Development Goal 7: The Energy Progress Report, 2019.

STRATIFICATION

The malaria risk map was updated in 2020 using malaria incidence, prevalence, and mortality rates of children under five years of age due to malaria.¹²

Figure 1a: Malaria Risk Map By Region (2022)



¹² District Health Information Software 2 data from 2017-2018.

Figure 1b: Map Showing Prevalence of Malaria among Children Under Five Years of Age by Region (2021 MIS)

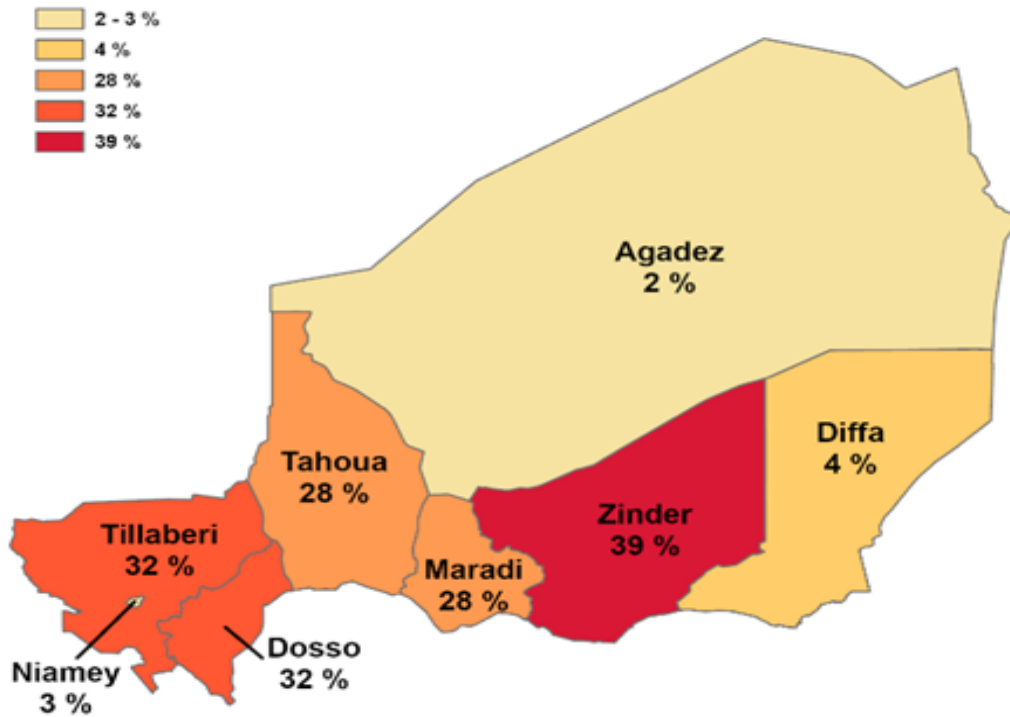
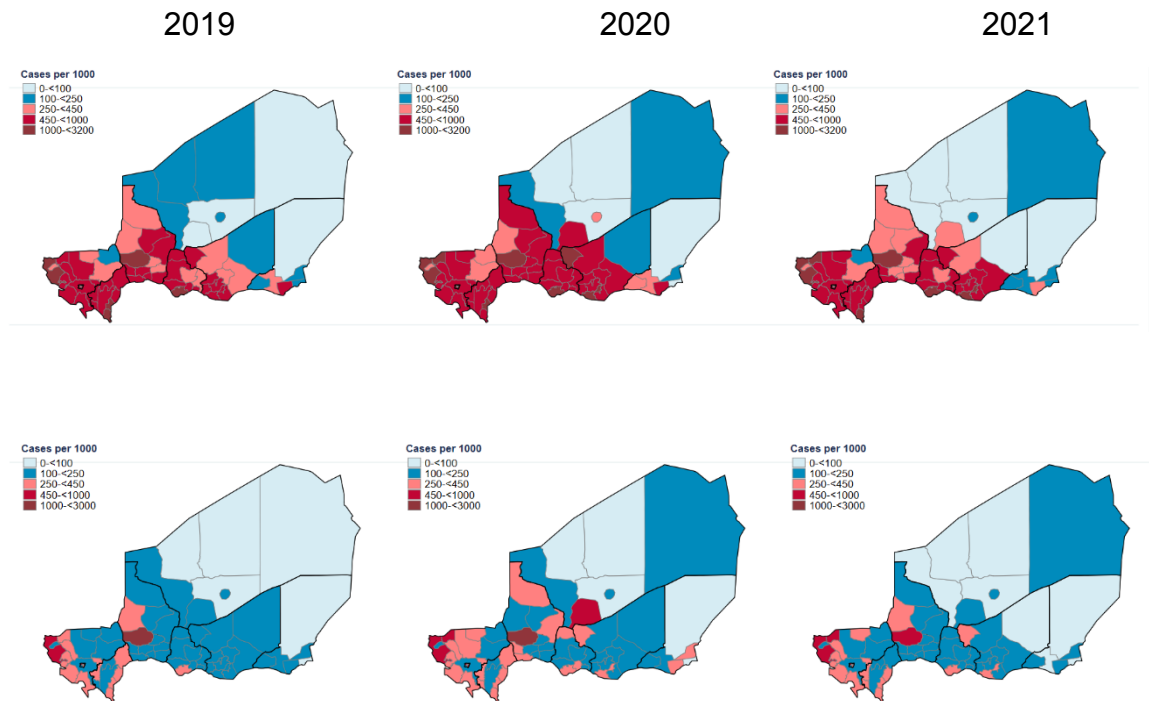


Figure 2: Maps Showing Incidence of Uncomplicated Malaria in Children Under Five Years of Age, 2019–2021 (NMSP 2023-2026)



Note: The data is adjusted with the biological confirmation and reporting rate.

Table 2: Malaria Parasites and Vectors

Principal Malaria Parasites	<i>Plasmodium falciparum</i>
Principal Malaria Vectors*	<i>Anopheles gambiae</i> s.l. and <i>Anopheles funestus</i> s.l. Pyrethroid insecticides resistance is widespread in <i>Anopheles gambiae</i> s.l.

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

COUNTRY HEALTH SYSTEM

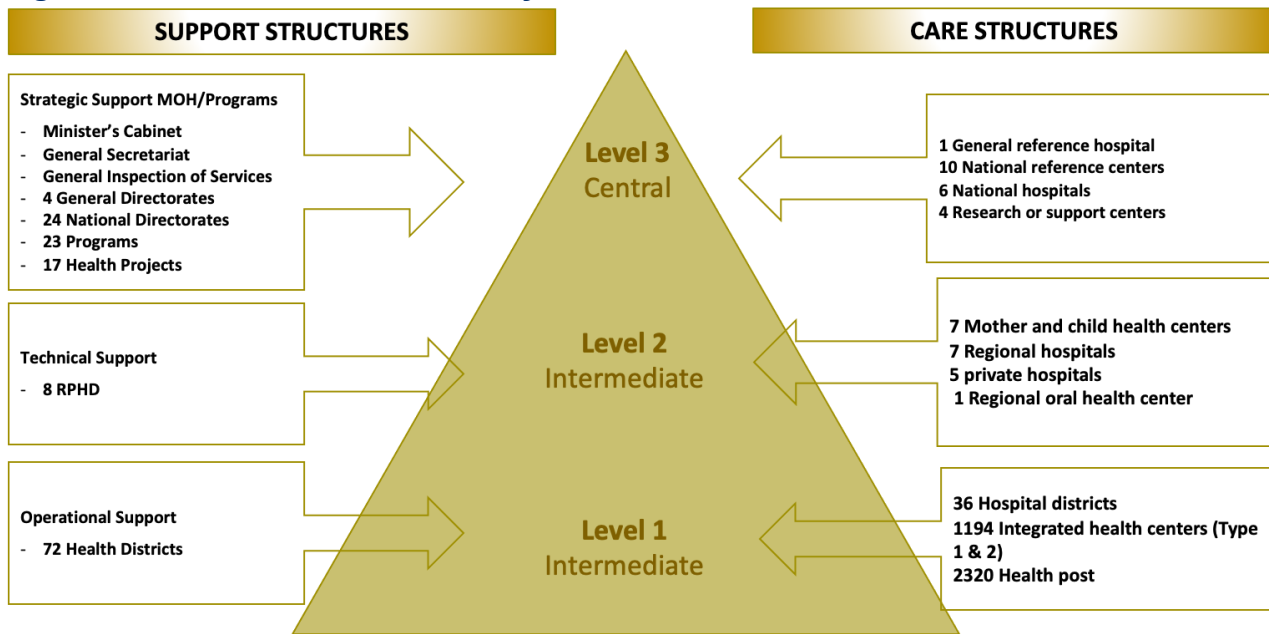
Administratively, Niger has eight regions (Agadez, Diffa, Dosso, Maradi, Tillaberi, Tahoua, Zinder, and the capital, Niamey), 63 departments, and 266 municipalities. The health system is modeled on the administrative division of the country and consists of three levels:

- Central administration: strategic level responsible for defining the strategic interventions,
- Eight regional directorates of public health: technical level in charge of supporting the health districts, and
- 72 health districts: operational level responsible for the implementation of health policy. A health district covers approximately 250,000-350,000 people.

There are three levels of health structures, including public and private facilities:

- Central level of strategic support consisting of hospitals, maternity centers, and national reference centers,
- Regional or intermediate level represented by the regional hospital center (*centre hospitalier régional*, CHR) and the mother and children's health centers (*centre de santé de la mère et de l'enfant*, CSME),
- Operational level with district hospitals (*hôpital de district*, HD) and their networks of integrated health centers (*centre de santé intégré*, CSI), health post (*case de santé* or CS), private practices, and treatment rooms.

Figure 3: Structure of the Health System



Health Statistics Report 2020

The staff at the CSI consist of nurses, midwives, lab technicians (in type 2 CSI), and support staff (cashier, janitors, guardians, traditional midwives). There are numerous human resource challenges, such as a shortage of qualified government staff and a high proportion of contractors, resulting in a quick turnover. A district has between eight and 38 CSIs, depending on the population density. Each CSI has an average of two health posts. In villages more than five kilometers from a health structure, community health workers (CHWs) provide an integrated “complete package,” i.e., curative and preventive services including integrated community case management (iCCM), referrals for severe malnutrition, and distribution of drugs for neglected tropical diseases. In villages less than five kilometers away, CHWs provide an integrated “preventive and promotional package,” i.e., preventive services for a range of diseases, including sensitization, community-based epidemiological surveillance, community distribution of contraceptives, and promotion of healthy behaviors. Although CHWs are attached to a CSI and supervised by health staff, they are not officially considered as an extension of the health system.

In addition to the mentioned public structures managed by the Ministry of Public Health, Population and Social Affairs, the health system includes other health care establishments such as the health services of the armed forces and National Social Security Fund (*Caisse Nationale de Sécurité Sociale*) medical and social centers.

Table 3: Variation in Number of Health Staff in Niger

	2016	2017	2018	2019	2020	2021
Medical doctors	705	689	603	903	1,118	1,132

Source: Statistical Yearbook (2019 and 2021)

Table 4: Number of CHW (Ministry of Health, 2021)

Region	CHW complete package*	CHW preventive and promotional package**	Total
Agadez	17	1,043	1,060
Diffa	161	888	1,049
Dosso	902	1,475	2,377
Maradi	2,242	2,818	5,060
Niamey	3	1,145	1,148
Tahoua	1,345	4,371	5,716
Tillaberi	814	3,490	4,304
Zinder	923	4,151	5,074
TOTAL	6,407	19,381	25,788

*Curative services, including iCCM, referrals for severe malnutrition and distribution for neglected tropical diseases.

**Preventive services for a range of diseases including sensitization, community-based epidemiological surveillance, contraceptive community distribution, and promotion of health behaviors.

The coverage of service delivery is expected to increase from 53.7 percent in 2021 to 55.5 percent in 2023. The rate of utilization of public service is expected to increase from 53.6 percent in 2021 to 55.7 percent in 2023.¹³

Niger's Malaria Diagnostic and Treatment Guidelines, updated in December 2017, state that any suspected case of malaria must be confirmed by a diagnostic test—either malaria rapid diagnostic test (mRDT) or microscopy—followed by treatment with an artemisinin-based combination therapy (ACT). Microscopy is performed in district hospitals and in the private sector, while mRDTs are used in health centers and at the community level. In 2021, the National Malaria Control Program (NMCP) reported 6,259,974 suspected malaria cases of which 5,960,815 were tested (96.0 percent).¹⁴ Of those tested, 4,937,676 were confirmed malaria cases (82.8 percent). In general, more than 97.5 percent of cases are confirmed by

¹³ Health Annual Statistics 2013, 2014, 2015 – National Malaria Control Program quarterly report.

¹⁴ District Health Information Software 2, 2021.

RDTs and 2.5 percent by microscopy.¹⁵ The results from the 2019 Service Availability Readiness Assessment survey showed that the availability of malaria diagnostics in public and private health facilities stayed stable compared with the 2015 survey results: 91 percent of the health facilities offered mRDT (88 percent in 2015) and 24 percent microscopy (20 percent in 2015). The survey showed an increase from 52 percent (2015) to 61 percent of the facilities that have a health worker trained in malaria diagnostics and treatment. The 2022 end-use verification survey that PMI supported showed an increase in the malaria diagnosis by malaria RDT (from 82 percent in 2019 to 95 percent in 2022), while the microscopy rate decreased (from 9 percent in 2019 to 2.7 percent in 2022).¹⁶

The existing commodity flows across the Niger public-sector supply chain are not uniform, because different vertical programs have different approaches. Although commodities from all programs flow through the central level, depending on the health program, they are stored at different central-level locations, including the central medical store (*Office National des Produits Pharmaceutiques et Chimique*), the Ministry of Health and its departments, and donor warehouses. When commodities leave the central level, the public health system may channel them through zonal and/or regional warehouses en route to district warehouses. Some health facilities use their own funds to travel to retrieve their commodities from the district, while other facilities combine commodity collection with occasional funded meetings at the health district office and/or supervision missions from the districts, requiring facility staff travel to districts.

There are multiple stockouts and among the causes identified are a lack of training and involvement by counterparts in supply planning processes, limited availability and poor quality Logistics Management Information System (LMIS) data, and limited training in data collection, reporting, and analysis.¹⁷ Many health facilities lack staff trained to calculate average monthly consumption and to accurately fill in LMIS tools. While many health facilities submit orders to the district level, there is currently no mechanism for transmitting orders from the district to national or regional level, as the latter currently distribute commodities using a push system. The lack of data visibility (proof of delivery, stock levels, and consumption) at lower levels pushed the Niger *Direction de la Pharmacie et de la Médecine Traditionnelle* to consider new distribution models, encouraging partners to test these models to find the most efficient and practical option to reduce stockouts at service delivery points.

The National Health Information consists of the Directorate of Health Statistics (*Direction des Statistiques de la santé* or DS), which manages the National Routine Health Information System and the Epidemics Surveillance and Response Directorate (*Direction de la surveillance et de la Riposte aux Epidémies*), which manages the Integrated Disease Surveillance and Response. CSI enters both systems in DHIS2, as shown in Table 5.

¹⁵ National Malaria Control Program report, 2020.

¹⁶ Procurement and Supply Management-supported EUV report, 2022.

¹⁷ Global Health Supply Chain-Procurement and Supply Management project. FY21 Stockout Reduction Strategy.

There are multiple challenges, including lack of trained staff, staff having limited time among their responsibilities to enter data, and logistic challenges, such as lack of equipment, electricity, and internet access. Although internet access is not needed to enter data in DHIS2, it is needed to launch the system and pull up the first page.

Table 5: National Health Information System: Data Reporting

	Routine Health Information System	Integrated Disease Surveillance and Response
	When started: 1994 Scale-up status: National	When started: 1990 Scale-up status: National
National	Reporting format/platform: DHIS2 since 2017 Managed by: Ministry of Health Dissemination: Annual Health Statistics report Key tasks: Coordination, planning, development of tools and resources, supervision, data reviews and data analysis, decision-making, commodity forecasting and distribution, feedback to lower levels, and training	Reporting format/platform: Excel and DHIS2 used in parallel (DHIS2 since 2018) Managed by: <i>Direction de la surveillance et de la Riposte aux Epidémies</i> Dissemination: Annual Statistics report, surveillance bulletin (does not include malaria data), and NMCP internal weekly report Key tasks: Coordination, planning, developing tools and resources, supervision, data reviews and analysis, investigation and epidemic response, feedback to lower levels, and training
<i>District Chef de Surveillance Epidemiologique</i> 72 districts Average of 14 CSi per DS District hospital (1st level of referral), private health facilities	Reporting format/platform: DHIS2 Managed by: CSE data manager Reported to: Regional health office Reporting frequency: Monthly Key tasks: Quarterly data review meetings, paper-based data entry (DHIS2 is not fully deployed at present)	Reporting format/platform: Excel and DHIS2 used in parallel (DHIS2 started in 2018) Managed by: CSE data manager or surveillance point Reported to: Regional health office Reporting frequency: Mondays weekly Key tasks: Data entry of paper-based reports
Facility level 1095 CSI Private facility <i>Relais communautaires</i> (CHWs) <i>Case de santé</i> (health post) > 2,524	Reporting format/platform: Paper and DHIS2. Data aggregated in monthly reporting tool before entry into DHIS2 at CSI level Managed by: Head of the CSI Reported to: District Health Office CSE Reporting frequency: Monthly Other: CS, RC, and private health facilities use a paper-based system to report data to the CSI. Private facilities send paper forms to the CSI, CSE, and SPIS, Key tasks: Data collection, verification, and transmission	Reporting format/platform: Paper, SMS The CSI collects surveillance data using paper forms. Forms are sent to the CSE at the district level for data entry. Suspected disease outbreak cases notified by telephone, text messaging, or email Managed by: Head of the CSI Reported to: District health office CSE Reporting frequency: Mondays weekly Key tasks: Data collection, verification, and transmission

The population views the health facilities as understaffed, having limited operating hours, and lacking equipment, diagnostic capabilities, and medicines. These views, combined with women's preference for having female providers, influence the trend of pregnant women tending to wait until their last trimester of pregnancy before seeking care despite subsidized costs. In addition, the predominant patriarchal norms that require some women to seek permission from their husbands. This norm limits women's ability to access health services, including seeking diagnostics/treatments for fever for themselves or their children.

OTHER CONTEXTUAL INFORMATION

Niger's harsh climate and state-dominated economy pose challenges to development. Resources to cope with the world's highest fertility rate (6.7 children per woman) and fastest population growth (3.8 percent per year) are limited. Niger is economically underdeveloped, with little industry and a large agricultural sector (87 percent of the nation's workforce). Women and men are both very active in agriculture, with some variation depending on the region. Women's participation in agricultural production estimated to be 24 percent in Niger,¹⁸ and their roles are mostly focused on processing, distribution, and sales making up the majority of women's roles along certain value chains. The Central Bank of West Africa States reported that in 2018, Niger imported goods from China (\$533 million), France (\$466.5 million), Thailand (\$129 million), and the United States (\$197.58 million). Niger ranks 132 out of 190 in the World Bank's 2020 Ease of Doing Business Report. There are sizable infrastructure investments underway from China, India, and Turkey. Canada, China, France, and Turkey have also all signed mining concessions with Niger.

Niger faces a series of persistent and growing security threats in different border areas (Nigeria, Lake Chad Basin) and in Niger itself. The insecurity is related to porous regional borders, trans-Sahel smuggling, and criminality that fund different terrorist groups such as Boko Haram, ISIS-WA, ISIS-GS, and amaam Nusrat al-Islam wal Muslimeen. Terrorism in Niger involves recruitment on economic terms more than ideological radicalization. Long-standing farmer-herder conflict cycles, the lack of a strong state presence and access to justice in the border regions, and persistent poverty are factors contributing to the growth of extremist groups. In addition, insecurity in neighboring countries such as Nigeria has resulted in thousands of refugees.

Since its 1960 independence, Niger had not peacefully transitioned executive power to a democratically elected successor until the presidential elections of 2021 that elected President Bazoum to replace President Issoufou, who had reached his term limit of two five-year terms. Niger took its place on the international stage by successfully hosting the July 2019 African

¹⁸ Palacios-Lopez, A., Christiaensen, L., & Kilic, T. 2017. How much of the labor in African agriculture is provided by women? *Food policy*, 67, 52–63

Union Summit. For this occasion, a modern international airport and several five-star international hotels, as well as the Mahatma Gandhi International Conference Center, were completed. Niger was also the Chair of the Economic Community of West African States Heads of State and Government committee for one year and took its two-year seat on the United Nations Security Council in January 2020, and served as Security Council President in September. Niger has aligned its Security Council vote virtually 100 percent with the United States.

Niger has a long list of significant human rights issues regarding the government, allied militias, terrorists, and armed groups, including arbitrary arrest and detention, harsh and life-threatening prison and detention center conditions, interference with the rights of peaceful assembly and freedom of association, and lack of accountability for cases of violence against women and girls. Niger is on the Tier II Trafficking in Persons Watch-list. While Niger improved from 66 to 57 out of 180 countries on the 2020 World Press Freedom Index due to a decrease in press freedom violations, the overall press freedom environment remains unchanged as journalists struggle to get information from government sources about issues related to terrorism, counterterrorism, and migration.

Weak and ineffective governance and closing spaces for public dialogue and alternative views render it difficult to address the above challenges. Most Nigeriens speak French as a second or third language despite it being an official language. Hausa is the dominant first language, and many people listen to Hausa language radio and TV. Radio remains the most relied-on source for news and information in Niger. According to the United Nations Development Program 2020 Human Development Report, 5.3 percent of the population has access to the internet and 41 percent have a cellular phone; the adult literacy rate is 30.6 percent and the average number of years of education received by people ages 25 and older was 2.1 years. In 2021, the USAID program office transitioned to a USAID Mission. USAID invests more than \$200 million yearly with programs in good governance, countering violent extremism, conflict resolution, health, education, community resilience, food aid, and agriculture. USAID implements not only the PMI but also the Feed the Future Initiative. USAID/Office of Transition Initiatives increases community engagement with government leaders. The Millennium Challenge Corporation, with a \$437 million budget Sustainable Water and Agriculture Compact for Niger, will develop and improve 5,070 hectares of large-scale irrigation systems and rehabilitate 300 kilometers of roads, while also promoting climate resistant, sustainable agriculture, and training to help in marketing local products.

III. NMCP STRATEGIC PLAN

The NMCP carried out the review of its 2017–2021 extended to 2023 strategic plan and developed the new National Malaria Strategic Plan (NMSP) covering the period 2022-2026.

Lessons learned from the review and the updated malaria risk map (2022) informed the development of the new NMSP 2023-2026.

The objectives of Niger's malaria strategy are as follows:

- Have at least 90 percent of the at risk population protected from malaria with vector control interventions by 2026;
- At least 90 percent of the population at risk will be protected from malaria through the use of LLINs by 2026;
- At least 90 percent of the population at risk will be protected by IRS in targeted districts by 2026;
- At least 80 percent of the population at risk will be protected from malaria through the larval source management by 2026;
- Ensure RTS.S/AS01 vaccine coverage of at least 80 percent among children in targeted areas;
- Provide chemoprevention coverage to at least 60 percent of pregnant women and 80 percent children under five years of age by 2026;
- Ensure correct case management (diagnosis and treatment) of at least 90 percent of suspected malaria cases by 2026;
- Have at least 80 percent of the population know the major signs and national measures for the prevention of malaria by 2026;
- Improve the monitoring and evaluation system by having at least 80 percent of health facilities reporting quality data on time to the central level by 2026;
- Strengthen managerial capacities by having at least 80 percent of activities and budget executed by 2026.

IV. KEY MALARIA DATA

EVOLUTION OF KEY SURVEY BASED MALARIA INDICATORS

Table 6: Key Survey Indicators

Indicator	2006, DHS	2012, DHS	2021, MIS
% of Households with at least one ITN	43	61	96
% of Households with at least one ITN for every two people	5	17	N/A
% of Population with access to an ITN	20	37	80
% of Population that slept under an ITN the previous night	4	14	N/A
% of Children under five years of age who slept under an ITN the previous night	7	20	86
% of Pregnant women who slept under an ITN the previous night	7	20	90
% of Children under five years of age with a fever in the last two weeks for whom advice or treatment was sought	64	64	67
% of Children under five years of age with a fever in the last two weeks who had a finger or heel stick	N/A	14	32
% of Children receiving an ACT among children under five years of age with a fever in the last two weeks who received any antimalarial drug	N/A	80	77
% of Women who attended 4 ANC visits during their last pregnancy	N/A	N/A	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	25
Mortality rate among children under five years of age per 1,000 live births	198	127	N/A
% of Children under five years of age with parasitemia by microscopy	N/A	N/A	N/A
% of Children under five years of age with parasitemia by RDT	N/A	N/A	29%N/A

ACT: artemisinin-based combination therapy; ANC: antenatal care; DHS: Demographic and Health Survey; ITN: insecticide-treated mosquito net; MICS: Multiple Indicator Cluster Survey; MIS: Malaria Indicator Survey.

Figure 4. Insecticide-treated Mosquito Net Use:Access Ratio Map

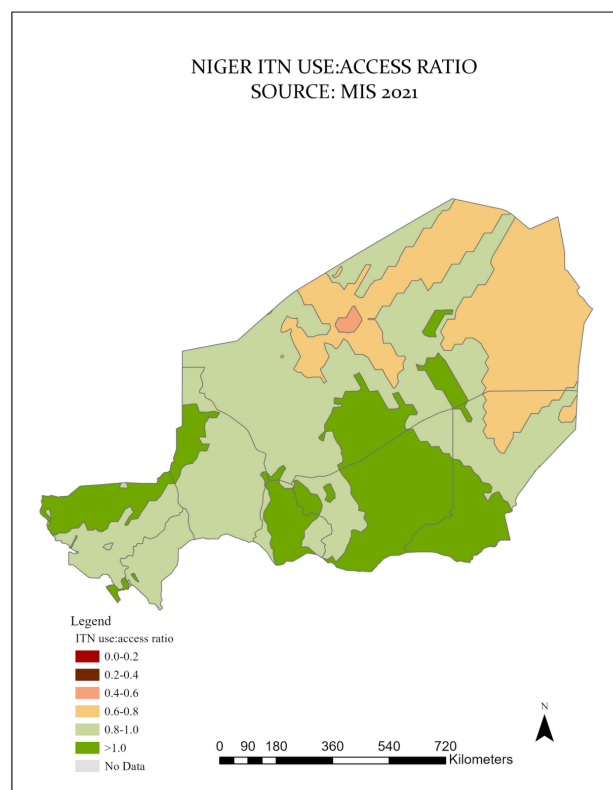


Table 7: Evolution of Key Malaria Indicators Reported through Routine Surveillance Systems

Indicators	2018	2019*	2020*	2021*	2022*
Total Population ¹	21,466,864	21,942,943	22,735,599	23,591,989	24,465,615
Total Population of children under five years of age	4,362,035	4,369,706	4,490,026	4,638,073	4,778,649
# of All-cause patient consultations	10,293,000	9,469,044	10,592,319	11,097,827	11,395,965
# of Suspected malaria cases ²	4,726,885	5,764,120	6,651,444	6,259,974	7,140,152
# of Patients receiving diagnostic test for malaria ³	4,483,533	5,099,717	6,243,106	5,960,815	7,524,791
# of Malaria cases ⁴	3,338,211	3,987,199	5,140,218	4,937,676	4,843,949
# of Confirmed cases ⁵	3,036,699	3,401,013	4,336,309	4,063,322	4,843,949

% Malaria cases ⁶ confirmed	91%	85.3%	84.20%	100.00%	100.00%
Test positivity rate ⁷	68%	66.7%	69.5%	68.2%	64.37%
# of malaria cases among children under five years of age ⁸	1,804,783	2,094,420	2,286,776	2,457,341	2,408,663
% Cases in children under five years of age ⁹	54%	51.90%	52.7%	49.77%	49.73%
# of Severe malaria cases ¹⁰	241,172	256,858	367,209	310,305	222,263
# of Malaria deaths ¹¹	4,035	2,635	5,845	4,182	4,530
# of Malaria deaths in children under five years of age			3,621	2,429	2,836
# of Malaria deaths in pregnant women			101	303	117
# of Facilities reporting ¹²	3,495	1,153	1,247	1,257	1,323
% of Data completeness ¹³	84%	96.72%	96.00	99.30%	99.95

* DHIS 2 data, analyzed May 31, 2023.

¹ Number of population.

² Number of patients presenting with signs or symptoms possibly due to malaria.

³ RDT or microscopy, all ages, outpatient and inpatient.

⁴ Total reported malaria cases; all ages, outpatient and inpatient, confirmed and unconfirmed cases; 4.

⁵ Diagnostically confirmed; all ages, outpatient and inpatient.

⁶ # confirmed cases divided by total # case.;

⁷ Confirmed cases divided by # patients receiving a diagnostic test for malaria (RDT or microscopy).

⁸ Outpatient and inpatient, confirmed and unconfirmed.

⁹ Total # cases of children under five years of age divided by total # of cases.

¹⁰ WHO definition.

¹¹ All ages, outpatient, inpatient, confirmed, and unconfirmed.

¹² Total # of health facilities reporting data into the HMIS/DHIS2 system that year.

¹³ # of monthly reports from health facilities divided by # of health facility reports expected (average for the calendar year).

Table 5: Disaggregated Community-Level Data

Indicator	2019	2020	2021	2022
# of Patients receiving diagnostic test for malaria from a CHW	NA	NA	NA	NA
Total # of malaria cases reported by CHWs ¹	NA	NA	NA	NA
% of CHW reported cases (among total malaria cases) ²	NA	NA	NA	NA

¹ Includes all ages, confirmed and unconfirmed.

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

V. Other Implementation Information

Table 8: Results of Durability Monitoring

Site/Net Type	Survey and Time Since Distribution (months)	Attrition to Wear and Tear (%)	Nets in Serviceable Condition (%)	Optimal Insecticidal Effectiveness in Bioassay (%)
Gazaoua/Olyset	4	0.0	97.6	35.5
	12.7	2.3	93.6	56.7
	26.2	15.4	74.0	3.3
	39.7	39.7	61.2	43.3
Madaoua/Olyset	4	0.7	98.7	79.3
	12.7	2.6	95.5	70.0
	26.2	16.0	78.1	23.3
	39.7	40.9	78.2	23.3

In Niger, PMI-supported standard ITN durability monitoring of Olyset-brand ITNs (permethrin) distributed during the June 2018 mass campaign in two districts: Gazaoua (in the Maradi region) and Madaoua (Tahoua region). The study compared the attrition, physical durability, survivorship, and bio-efficacy of nets distributed and sought to identify major determinants of field performance. Baseline assessments were made four months after distribution with 120 households at each site (12 village clusters of 10 households) randomly sampled for inclusion and all Olyset ITNs verified from the 2018 distribution were labeled with a unique ID number for follow-up. Follow-up field surveys occurred 13, 26, and 39 months after the distribution. A total of 827 campaign ITNs were included in the cohort (414 in Gazaoua, 413 in Madaoua). At each round, information was collected on bed nets obtained by the household outside of the 2018 campaign (non-cohort ITNs). Cohort ITNs were sampled for bio-effectiveness and chemical content analysis.

In both study sites, cohort net use during the 12 to 36-month survey decreased substantially while household ownership of non-cohort nets increased so that at 36-months nearly all households owned one or more non-cohort nets (97 percent in Gazaoua, 99 percent in Madaoua). At 36-months, a higher proportion of cohort nets in Gazaoua compared to cohort nets in Madaoua were used the previous night (44 percent versus 16 percent; $p=0.014$) and every night of the previous week (37 percent versus 13 percent; $p=0.024$). The proportion of nets used by users of different age groups was not statistically different between sites for cohort or non-cohort nets. At 36-months, all-cause attrition was 77 percent in Madaoua and 75

percent in Gazaoua ($p=0.58$) with attrition due to wear and tear the most common reason for attrition (40 percent in Gazaoua, 45 percent in Madaoua). Levels of physical damage were similar between sites: the median proportional hole index was 518 in Gazaoua and 163 in Madaoua with 61 percent of ITNs in Gazaoua and 78 percent in Madaoua classified as serviceable ($p=0.025$). Cohort net survival was estimated to be 24 percent in Gazaoua and 26 percent in Madaoua, corresponding to an estimated median useful life of 2.4 years for Olyset nets in both Gazaoua and Madaoua under the assumed three-year median life. In cone bioassays conducted at 36-months with pyrethroid-susceptible mosquitoes, mean 60-minute knockdown was 80 percent for samples from Gazaoua and 75 percent for Madaoua ($p > 0.05$). Mean 24-hour mortality was 76 percent in Gazaoua and 72 percent in Madaoua ($p > 0.05$). In total, 43 percent of samples from Gazaoua and 23 percent from Madaoua were optimally effective by WHO criteria. While data on chemical content are awaited, in all, physical durability and survival results were strikingly similar in the two different sites, though differences in bio-effectiveness were recorded.

Table 9: 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
2020	Agadez (Agadez)	Artemether-luméfantine (AL)	97.05%
2020	Gaya (Dosso)	AL	98.87%
2020	Tessaoua (Maradi)	AL	92.18%

Source: PMI/Impact Malaria

VI. Key Policies

Table 10: Policies in Niger

National Strategic Plan 2023-2026	
<u>National Digital Health Strategy 2019-2023</u>	
National Social Behavior Change/Communication Strategy 2020-2025	
National Supply Chain Strategy/Master Plan (2021)	
National Vector Control Strategy and/or Integrated Vector Management Plan (2016)	
Malaria Case Management Policy (2022)	
What is/are the first-line treatment(s) for uncomplicated <i>P. falciparum</i> malaria*?	Artemether - Lumefantrine
What is/are the second-line treatment(s) for uncomplicated <i>P. falciparum</i> malaria*?	Dihydroartemisinin- Piperaquine

What is the first-line treatment for severe malaria?	Artésunate injectable (arthémeter injectable/quinine injectable)
In pregnancy, what is the current first-line treatment for uncomplicated <i>P. falciparum</i> malaria in the <u>first trimester</u> ?	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? (please include any plans for training providers on the new policy)	Yes. The MOH has adopted this change and the revised guidelines will be printed in 2023 + refresh training of health workers.
In pregnancy, what is/are the first-line treatment(s) for uncomplicated <i>P. falciparum</i> malaria in the <u>second and third trimesters</u> ?	AL
In pregnancy, what is the first-line treatment for severe malaria?	Artésunate injectable (quinine)
Is pre-referral treatment of severe disease recommended at peripheral health facilities? If so, with what drug(s)?	No
Is pre-referral treatment of severe disease with rectal artesunate recommended for community health workers?	Yes
Community Health Policy (2019)	
What is the # of CHWs currently providing iCCM?	6407 (12/2021)
What is the country's target for the number of CHWs providing iCCM?	12,259 (2021)
What percent of the country's target is met?	
Does the country have a policy that enables the routine, regular payment of salaries/stipends for CHWs?	Yes, but not implemented
Do CHWs have the authority to test and treat all ages for malaria?	No, under five years of age only
Prevention of Malaria in Pregnancy Policy (2017)	
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?	After 16 weeks (after movement of the fetus)
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
What is the status of training ANC providers on the WHO recommended 8+ contacts?	Training modules are not updated yet

Have HMIS/DHIS2 and ANC registers been updated to include 8+ contacts?	No
Are ANC/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?	No
Can CHWs deliver IPTp and if so, which specific cadres and beginning with which dose? How many districts are targeted for c-IPTp implementation?	No

AL: Artemether-lumefantrine; ANC: antenatal care; CHW: community health worker; DHIS: District Health Information Software; HMIS: health management information system; iCCM: integrated community case management; IPTp: intermittent treatment of malaria during pregnancy; MIP: malaria in pregnancy; MOH: ministry of health.

VII. PARTNER LANDSCAPE

Table 11: Partner Landscape

Partner	Key technical interventions	Geographic coverage	Funding amount or in-kind contribution	Timeframe
Government of Niger	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> National 	In kind contributions: health staff salaries, infrastructure	
Global Fund	<ul style="list-style-type: none"> Support rolling nationwide campaign Procurement of malaria commodities Training and supportive supervision Support SMC campaign in 6 regions (46 districts) 	<ul style="list-style-type: none"> National ITN campaign Activities in 6 regions 	€ 88,416,382 € 112,597,063	Current grant 2021–2023 Next Grant 2024-2026
WHO	<ul style="list-style-type: none"> Development of guidelines M&E 	<ul style="list-style-type: none"> Central 		
UNICEF	<ul style="list-style-type: none"> Community Health Supply chain - Last mile distribution 	<ul style="list-style-type: none"> Central Selected Districts 		
World Bank	<ul style="list-style-type: none"> Community Health M&E 	<ul style="list-style-type: none"> Central Selected Districts 		