

## 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 24 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 partner 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 is 19 people per km<sup>2</sup>.<sup>1</sup> Niger is one of the poorest countries in the world and ranks 189 out of 189 according to the Human Development Index.<sup>2</sup> The National Institute for Statistics (INS Niger) 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.<sup>3</sup> 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.<sup>4</sup>

The fertility rate in Niger is the highest in the world, with an estimated 6.7 children per woman in 2018.<sup>5</sup> The maternal mortality was 535/100,000 (2012) with one of 23 women dying during reproductive age due to maternal health related causes. The under-five mortality rate was 127 per 1000 persons in 2012<sup>6</sup> and improved to 78 per 1,000 persons

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<sup>1</sup> United Nations, Department of Economic and Social Affairs, Population Division

<sup>2</sup> Human Development Report 2020, UNDP

<sup>3</sup> *République du Niger, Plan Stratégique de Lutte Contre le Paludisme 2017-2021*

<sup>4</sup> UNICEF [website](#)

<sup>5</sup> World Bank 2019

<sup>6</sup> Demographic and Health Survey (DHS) 2012

in 2020.<sup>7</sup> Among children under five years of age, 47.8 percent are chronically undernourished and more than 70 percent are anemic.<sup>8</sup> Life expectancy is 62.4 years.<sup>9</sup>

In 2018, 41 percent of the population — or more than 9 million people — are living below the poverty line with 95 percent of them living in rural areas.<sup>10</sup> The economy is based mainly on the agro-pastoral sector, which is a concern, especially with 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.<sup>11</sup>

The National Malaria Strategic Plan 2017-2023 (NMSP) states that 48 percent of the population has access to health centers within a radius of 0-5 km. There is also an inequitable distribution of services. Although most of the population, 84 percent, lives 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.<sup>12</sup>

**Table 1: General Demographics and Malaria Situation**

<b>Population</b>	23,594,989 (INS, 2021)
<b>Population at risk of malaria</b>	23,594,989 (INS, 2021)
<b>Malaria incidence/1,000 population at risk (2019)</b>	144 (NMSP 2017-2023)
<b>Peak malaria transmission</b>	End of July to November

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<sup>7</sup> UN\_IGME 2020

<sup>8</sup> Unicef, 2018

<sup>9</sup> World Bank 2019

<sup>10</sup> Poverty and Equity Brief, World Bank, 2021

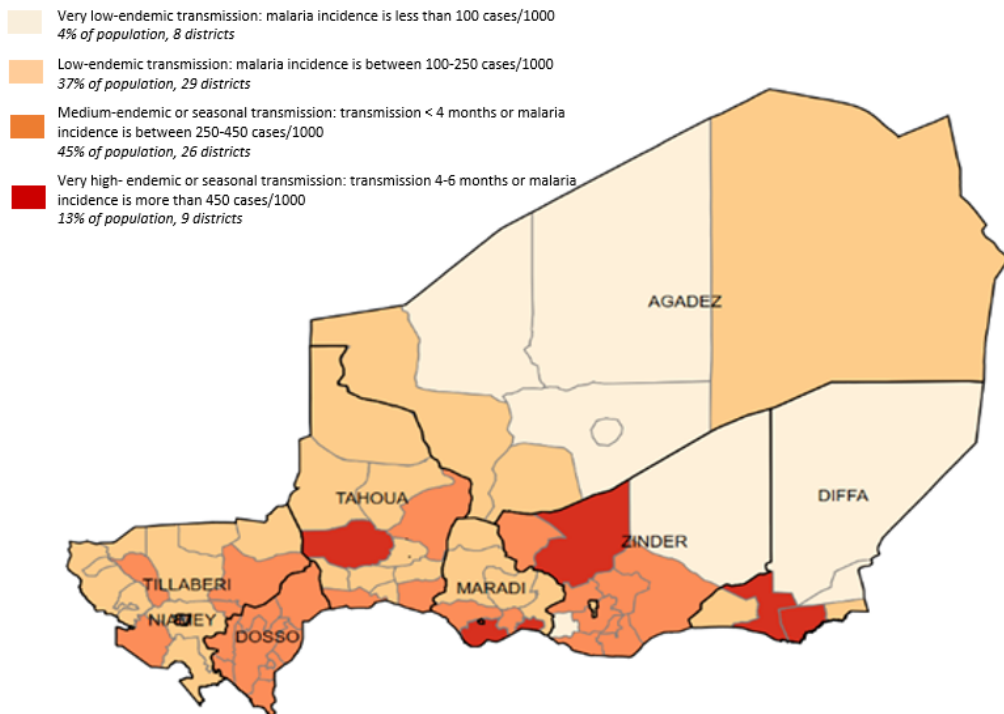
<sup>11</sup> Tracking Sustainable Development Goal 7: The Energy Progress Report, 2019

<sup>12</sup> DHS 2012

## STRATIFICATION

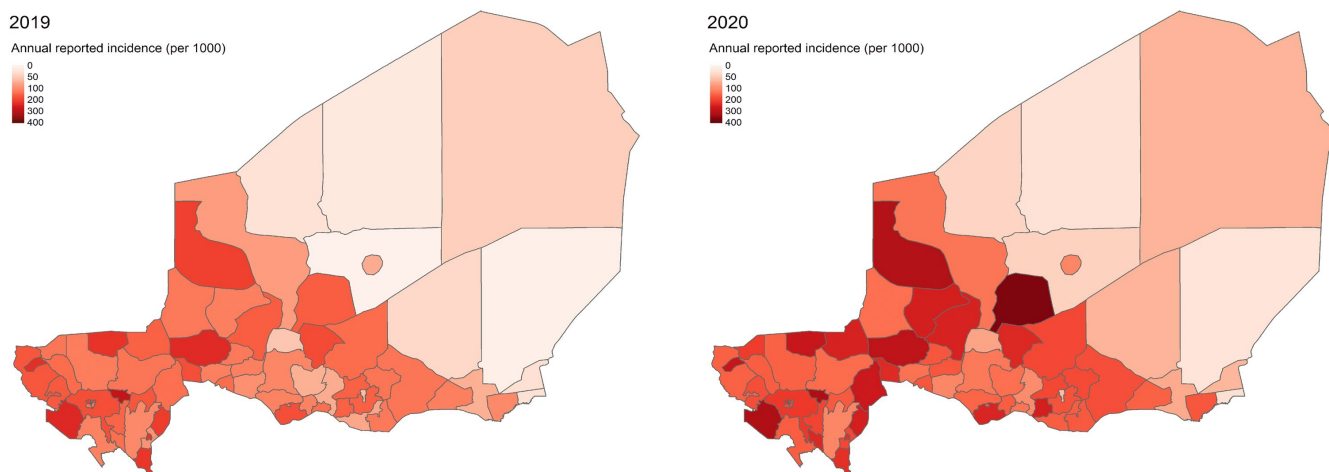
The malaria risk map was updated in 2020 using malaria incidence, prevalence, and under 5 years of age malaria mortality data.<sup>13</sup>

**Figure 1: Malaria Risk Map (2020)**



<sup>13</sup> District health information software 2 (DHIS2) data from 2017-2018.

**Figure 2: Annual Incidence Rates per 1,000 Population by District in Niger, 2019-2020**



Source MDO data provided by NMCP

**Table 2: Malaria Parasites and Vectors**

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

\* See **Entomological Monitoring** section of the Malaria Operational Plan for more details on vector bionomics and insecticide resistance.

## 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:

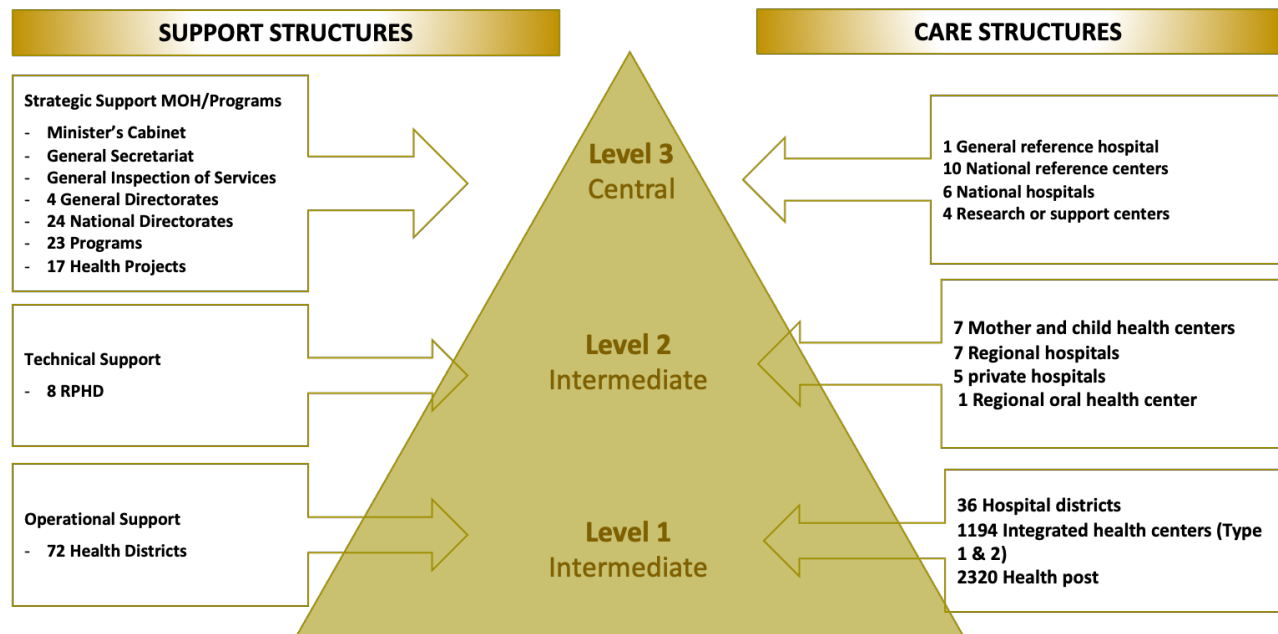
- Central administration: strategic level responsible for defining the strategic interventions
- Eight regional directorates of public health: technical level in charge of supporting the health districts

- 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*) and the mother and children's health centers (*centre de santé de la mère et de l'enfant*)
- Operational level with district hospitals (*hôpital de district*) and their networks of integrated health centers (*centre de santé intégré* or CSI), health post (*case de santé* or CS), private practices, and treatment rooms

**Figure 3: Structure of the Health System**



Annual 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 a “complete package,” i.e., curative and preventive services including integrative 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 a “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**

	2015	2016	2017	2018	2019
Medical doctors	944	948	1,051	1,132	1,118

Source: Statistical Yearbook (2015–2018) and Health Annual Statistics (2019)

**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
<b>Zinder</b>	923	4,151	5,074
<b>TOTAL</b>	<b>6,407</b>	<b>19,381</b>	<b>25,788</b>

\*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.<sup>14</sup>

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 6,138,162 suspected malaria cases of which 5,890,796 were tested (96.0 percent).<sup>15</sup> Of those tested, 4,000,696 were confirmed malaria cases (67.9 percent). In general, more than 97.5 percent of cases are confirmed by RDTs and 2.5 percent by microscopy.<sup>16</sup> The results from the 2019 Service Availability Readiness Assessment (SARA) survey showed that the availability of malaria diagnostics in public and private health facilities

<sup>14</sup> Health Annual Statistics 2013, 2014, 2015 – NMCP quarterly report

<sup>15</sup> DHIS2, 2021

<sup>16</sup> NMCP report, 2020

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 SARA 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 2020 end-use verification (EUV) survey showed an increase in the malaria diagnosis by mRDT (from 82 percent in 2019 to 87 percent in 2020) while the microscopy rate decreased (from 9 percent in 2019 to 1 percent in 2020).<sup>17</sup>

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* [ONPPC]), 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.<sup>18</sup> 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*

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<sup>17</sup> PSM-supported EUV report, 2020

<sup>18</sup> FY21 stockout reduction strategy



*Epidémies*), which manages the Integrated Disease Surveillance and Response. Both systems are entered in DHIS2 by the CSI as shown in Table 5.

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

**Table 5: National Health Information System: Data Reporting**

	<b>Routine Health Information System</b>	<b>Integrated Disease Surveillance and Response</b>
	<b>When started:</b> 1994 <b>Scale-up status:</b> National	<b>When started:</b> 1990 <b>Scale-up status:</b> National
<b>National</b>	<b>Reporting format/platform:</b> DHIS2 since 2017 <b>Managed by:</b> Ministry of Health <b>Dissemination:</b> Annual Health Statistics report <b>Key tasks:</b> 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	<b>Reporting format/platform:</b> Excel and DHIS2 used in parallel (DHIS2 started in 2018) <b>Managed by:</b> <i>Direction de la surveillance et de la Riposte aux Epidémies (DSRE)</i> <sup>19</sup> <b>Dissemination:</b> Annual Statistics report, surveillance bulletin (does not include malaria data), and NMCP internal weekly report <b>Key tasks:</b> 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 Epidémiologique (CSE)</i>  72 districts  Average of 14 CSi per DS  District hospital (1st level of referral), private health facilities	<b>Reporting format/platform:</b> DHIS2 <b>Managed by:</b> CSE data manager <b>Reported to:</b> Regional health office (SPIS) <b>Reporting frequency:</b> Monthly <b>Key tasks:</b> Quarterly data review meetings, paper-based data entry (DHIS2 is not fully deployed at present)	<b>Reporting format/platform:</b> Excel and DHIS2 used in parallel (DHIS2 started in 2018) <b>Managed by:</b> CSE data manager or surveillance point <b>Reported to:</b> Regional health office (SPIS) <b>Reporting frequency:</b> Weekly on Mondays <b>Key tasks:</b> Data entry of paper-based reports

<sup>19</sup> DSRE

	<b>Routine Health Information System</b>	<b>Integrated Disease Surveillance and Response</b>
	<b>When started:</b> 1994 <b>Scale-up status:</b> National	<b>When started:</b> 1990 <b>Scale-up status:</b> National
<b>Facility level</b>  1095 CSI  Private facility  <i>Relais communautaires</i> (CHW)  <i>Case de santé</i> (health post) > 2524	<b>Reporting format/platform:</b> Paper and DHIS2. Data are aggregated in a monthly reporting tool before entry into DHIS2 at CSI level <b>Managed by:</b> Head of the CSI <b>Reported to:</b> District Health Office CSE <b>Reporting frequency:</b> 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, <b>Key tasks:</b> Data collection, verification, and transmission	<b>Reporting format/platform:</b> Paper, SMS The CSI collects surveillance data using paper forms. Forms are sent to the CSE at the district level for data entry. Suspected cases of disease outbreak are notified by telephone, text messaging, or email <b>Managed by:</b> Head of the CSI <b>Reported to:</b> District health office CSE <b>Reporting frequency:</b> Weekly on Mondays <b>Key tasks:</b> 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, contribute to pregnant women in Niger customarily waiting until their last trimester of pregnancy before seeking care despite the subsidized costs. In addition, the predominant patriarchal norms that require some women to seek permission from their husbands limit women’s ability to engage in labor outside the household, and to access health services, including care-seeking behaviors, for diagnostics/treatment for fever for self or child and reproductive health.

## OTHER CONTEXTUAL INFORMATION

- Niger’s harsh climate and state-dominated economy are challenges to development. Resources to cope with the world’s highest fertility rate (7.2 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. According to the most recent statistics on agricultural production, women’s

participation is 24 percent in Niger,<sup>20</sup> but largely because processing, distribution, and sales make up the majority of women's role along certain value chains. The International Monetary Fund predicts Niger will see 1 percent economic growth in 2020 due to the economic effects of COVID-19, down from 8 percent pre-pandemic. 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 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-

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<sup>20</sup> 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

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 a midterm review of its 2017–2021 strategic plan. Lessons learned from the review and the updated malaria risk map (2020) allowed for a revision of the NMSP 2017–2021 with an extension until 2023.

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

- Have at least 80 percent of the at risk population protected from malaria with vector control interventions by 2023.
- Provide chemoprevention coverage to at least 80 percent of pregnant women and children under five years of age by 2023.
- Ensure correct case management (diagnosis and treatment) of at least 90 percent of suspected malaria cases by 2023.

- Have at least 80 percent of the population know the major signs and national measures for the prevention of malaria by 2023.
- 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 2023.
- Strengthen managerial capacities by having at least 85 percent of activities and budget executed by 2023.

## IV. KEY MALARIA DATA

### EVOLUTION OF KEY SURVEY-BASED MALARIA INDICATORS

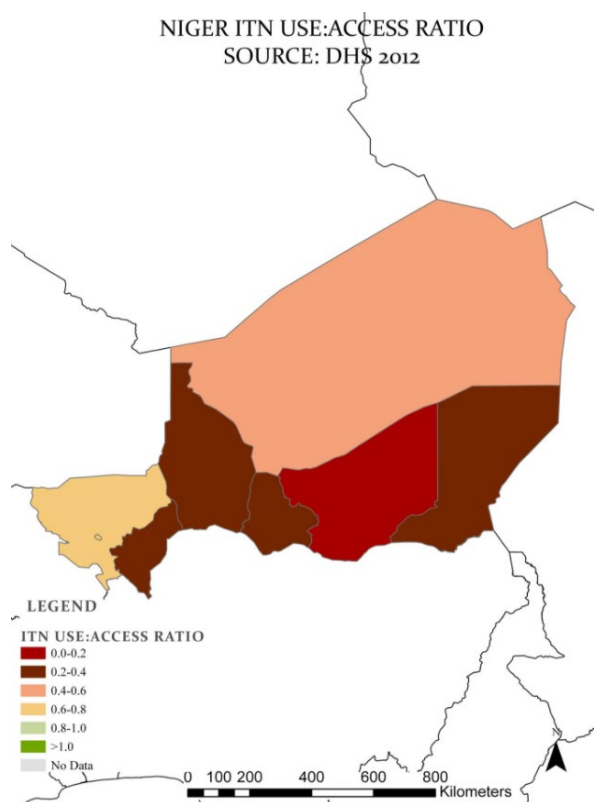
**Table 6: Key Survey Indicators**

Indicator	2006, DHS	2012, DHS	2021, MIS
% Households with at least one insecticide-treated mosquito net (ITN)	43	61	96
% Households with at least one ITN for every two people	5	17	N/A
% Population with access to an ITN	20	37	80
% Population that slept under an ITN the previous night	4	14	N/A
% Children <5 years of age who slept under an ITN the previous night	7	20	86
% Pregnant women who slept under an ITN the previous night	7	20	90
% Children <5 years of age with a fever in the last two weeks for whom advice or treatment was sought	64	64	67
% Children <5 years of age with a fever in the last two weeks who had a finger or heel stick	N/A	14	32
% Children receiving an ACT among children <5 with a fever in the last two weeks who received any antimalarial drug	N/A	80	77
% Women who attended 4 antenatal care (ANC) visits during their last pregnancy	N/A	N/A	N/A
% Women who received three or more doses of intermittent preventive treatment for pregnant women (IPTp) during their last pregnancy in the last two years	N/A	N/A	25

Indicator	2006, DHS	2012, DHS	2021, MIS
Children <5 years of age mortality rate per 1,000 live births	198	127	N/A
% Children <5 years of age with parasitemia by microscopy	N/A	N/A	N/A
% Children <5 years of age with parasitemia by rapid diagnostic test (RDT)	N/A	N/A	N/A

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

**Figure 4. ITN Use: Access Ratio Map**



Source: DHIS

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

Indicator	2017	2018	2019*	2020*	2021*
# All-cause patient consultations			9,469,044	10,592,319	10,269,950
# Suspect malaria cases <sup>1</sup>	4,122,292	4,726,885	5,194,856	6,280,942	6,138,162
# Patients receiving diagnostic test for malaria <sup>2</sup>	3,874,040	4,483,533	5,060,694	6,069,525	5,890,796
Total # malaria cases <sup>3</sup>	2,918,057	3,338,211	4,038,741	5,095,603	4,536,355
# Confirmed cases <sup>4</sup>	2,663,709	3,036,699	3,455,399	4,289,620	4,000,696
# Presumed cases <sup>5</sup>	N/A	N/A	N/A	N/A	N/A
% Malaria cases confirmed <sup>6</sup>	91%	91%	85.6%	84.2%	88.2%
Test positivity rate (TPR) <sup>7</sup>	69%	68%	68.3%	70.7%	67.9
Total # <5 years of age malaria cases <sup>8</sup>	1,326,836	1,804,783	2,094,420	2,626,815	2,339,586
% Cases in children <5 years of age <sup>9</sup>	58%	54%	51.9%	51.6%	51.6%
Total # severe cases <sup>10</sup>	144,045	241,172	256,858	328,892	286,380
Total # malaria deaths <sup>11</sup>	2,316	4,035	2,635	3,521	2,551
# Facilities reporting <sup>12</sup>	3,389	3,495	1,153	1,247	1,320
% Data completeness <sup>13</sup>	85%	84%	96.72%	96.0	97.6

\* DHIS 2 data, analyzed March 31, 2022

1 Number of patients presenting with signs or symptoms possibly due to malaria; 2 RDT or microscopy, all ages, outpatient and inpatient; 3 Total reported malaria cases; all ages, outpatient and inpatient, confirmed and unconfirmed cases; 4 Diagnostically confirmed; all ages, outpatient and inpatient; 5 Clinical/presumed/unconfirmed; all ages, outpatient and inpatient; 6 # confirmed cases divided by total # cases; 7 # confirmed cases divided by total # cases; 7 Confirmed cases divided by # patients receiving a diagnostic test for malaria (RDT or microscopy); 8 Outpatient and inpatient, confirmed and unconfirmed; 9 Total # <5 cases 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 # monthly reports from health facilities divided by # health facility reports expected (average for the calendar year).

## 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

### Brief Summary of Durability Monitoring

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 (TES)**

Year	Site	Treatment arm(s)	Efficacy (PCR-corrected adequate clinical and parasitological result) for each drug at each site
2020	Agadez (Agadez)	Artemether-luméfantrine (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 : <a href="#">Plan Stratégique de Lutte Contre Le Paludisme</a> (2017-2023)	
National SM&E Plan: Monitoring and Evaluation Plan for Malaria Control (2017-2023)	
DHIS 2: <i>Guide de revue des données du système national d'information sanitaire avec le DHIS2</i> (2019)	
Health Information System: <i>Manuel de procédures opératoires standards de gestion des données sanitaires de routine</i> (2019)	
National Digital Health Strategy: <i>Stratégie Nationale E-Santé</i> , 2019-2023	
National Social Behavior Change/Communication Strategy: <i>Stratégie nationale de communication pour le changement social et de comportement en faveur de la lutte contre le paludisme</i> (2020-2025)	
National Supply Chain Strategy/Master Plan: <i>Plan stratégique national du système d'approvisionnement en produits de santé 2019-2023</i> (2019)	
Entomology: <a href="#">Plan National de suivi et de gestion de la résistance des vecteurs du paludisme aux insecticides</a> (Vector Control Strategy and/or Integrated Vector Management Plan) (2016,	
Community health: <i>Stratégie nationale de participation communautaire en matière de santé 2015-2020</i> (2015)	
National Health Policy <a href="#">Politique Nationale de Santé</a> (2016)	
Community Health: National Strategic Plan for Community Health 2019-2023 (2019)	
Community Health: <i>Guide d'orientation et de référence sur le relais communautaire de développement au Niger</i> (2017)	
ICCM: <i>Directives nationales pour la prise en charge intégrée du paludisme, de la diarrhée et de la pneumonie au niveau communautaire au Niger</i> (2012)	
Malaria Case Management Policy: <i>Directives nationales de prise en charge du paludisme dans les formations sanitaires de Niger</i> (2017)	
What is/are the first-line treatment(s) for uncomplicated <i>P. falciparum</i> malaria*?	AL Artésunate + Amiodiaquine (AS-AQ) Dihydro - Artemisine + Pipéraquline (DHA PPQ) Artésunate + Pyronaridine (PA)
What is/are the second-line treatment(s) for uncomplicated <i>P. falciparum</i> malaria*?	PA

What is the first-line treatment for severe malaria?	Artésunate injectable (arthémeter injectable/quinine injectable)
In pregnancy, what is the first-line treatment for uncomplicated <i>P. falciparum</i> malaria in the <u>first trimester</u> ?	Quinine + Clindamycine (if available)
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 AS-AQ
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
<b>Community Health Policy</b>	
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?	52.3
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 5 years of age only
<b>Prevention of Malaria in Pregnancy Policy</b>	
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 maternal and child health?	After 16 weeks (after movement of the fetus)

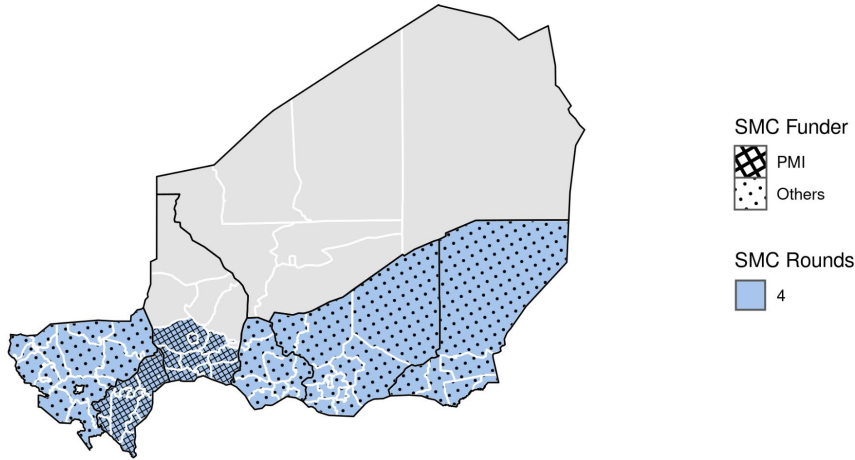
Do the national ANC guidelines reflect the WHO 2016 recommendation of 8 ANC scheduled contacts (plus one additional contact for early initiation of IPTp at 13-16 weeks)? If not, how many ANC contacts are recommended?	Yes
What is the status of training ANC providers on the WHO recommended 8+ contacts?	Training modules are not updated yet
Have HMIS/DHIS2 and ANC registers been updated to include 8+ contacts?	No
Are 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?	No

## VII. PARTNER LANDSCAPE

**Table 11: Partner Landscape**

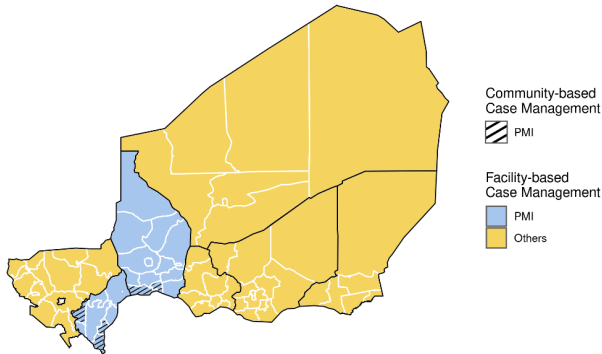
Partner	Key technical interventions	Geographic coverage	Funding amount or in-kind contribution	Timeframe
Government of Niger	<ul style="list-style-type: none"> <li>All</li> </ul>	<ul style="list-style-type: none"> <li>National</li> </ul>	In kind contribution, mainly health staff salaries and infrastructure	
Global Fund	<ul style="list-style-type: none"> <li>Support for rolling nationwide mass campaign</li> <li>Procurement of malaria commodities</li> <li>Training and supportive supervision</li> <li>Regions</li> <li>Support SMC campaign in 6 regions (46 districts)</li> </ul>	<ul style="list-style-type: none"> <li>National for ITN campaign</li> <li>6 of 8 regions for other activities</li> </ul>	\$88,416,382	Current grant covers 2021 to 2024
WHO	<ul style="list-style-type: none"> <li>Development of guidelines</li> <li>M&amp;E</li> </ul>	<ul style="list-style-type: none"> <li>Central level</li> </ul>		

**Figure 5: Map of Districts Supported by PMI vs Others for SMC (2021)**



**Figure 6. Maps of Case Management, Community Health, and Malaria in Pregnancy Service Delivery Activities in Niger (2022)**

Case Management Activities (2022)



Malaria In Pregnancy Activities (2022)

