PMI | U.S. PRESIDENT'S MALARIA INITIATIVE

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This Malaria Operational Plan has been approved by the U.S. Global Malaria Coordinator and reflects collaborative discussions with the national malaria control programs and partners in country. The funding available to support the plan outlined here is pending finalization of the FY 2020 appropriation. If any further changes are made to this plan it will be reflected in a revised posting.

U.S. PRESIDENT'S MALARIA INITIATIVE

NIGER

Malaria Operational Plan FY 2020

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ABBREVIATIONS

ACT	Artemisinin-based combination therapy
AL	Artemether-lumefantrine
ANC	Antenatal care
AS/AQ	Artesunate-amodiaquine
BMGF	Bill and Melinda Gates Foundation
CERMES	*Centre de recherche médical et sanitaire/*Medical research center
CDC	Centers for Disease Control and Prevention
CHW	Community health worker
CSI	*Centre de santé integré*/Integrated health center
CY	Calendar year
DHS	Demographic and health survey
DPH/MT	*Direction de la pharmacie et de la médecine traditionnelle/*Division of pharmacy and traditional medicine
DQA	Data quality assessment
DS	*Direction des statistiques*/Division of statistics
DSME	*Direction de la santé de la mère et de l'enfant*/Maternal and child health division
EPI	Expanded program of immunization
EUV	End-use verification survey
FETP	Field epidemiology training program
FY	Fiscal year
Global Fund	Global Fund to Fight AIDS, Tuberculosis and Malaria
HLC	Human landing catch
iCCM	Integrated Community Case Management
IPTp	Intermittent preventive treatment for pregnant women
IRS	Indoor residual spraying
LLIN	Long lasting insecticide-treated mosquito net`
MIP	Malaria in pregnancy
MIS	Malaria indicator survey
MOH	Ministry of health
MOP	Malaria operational plan
NGO	Non-governmental organization
NMSP	National malaria strategic plan
NMCP	National Malaria Control Program
ONPPC	*Office national des produits pharmaceutiques et chimiques*/National Office of Pharmaceutical Products and Chemicals
PBO	Piperonyl butoxide
PSC	Pyrethrum spray catch
PMI	U.S. President's Malaria Initiative
RDT	Rapid diagnostic test
SARA	Service Availability and Readiness Assessment
SBC	Social and behavior change
SMC	Seasonal malaria chemoprevention
SM&E	Surveillance, monitoring, and evaluation

SP	Sulfadoxine/pyrimethamine
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

I. INTRODUCTION

The U.S. President's Malaria Initiative (PMI)—led by the U.S. Agency for International Development (USAID) and implemented together with the U.S. Centers for Disease Control and Prevention (CDC)—delivers cost-effective, lifesaving malaria interventions alongside catalytic technical and operational assistance to support Niger to end malaria. PMI has been a proud partner of Niger since 2018, supporting country capacity development through provision of commodities, training and systems development in the areas of supply chain, case management and vector control with yearly investments of US$18 million.

The proposed PMI fiscal year (FY) 2020 budget for Niger is US$18 million. This Malaria Operational Plan (MOP) outlines planned PMI activities in Niger for FY 2020. Developed in consultation with the National Malaria Control Program (NMCP) and key stakeholders, proposed activities reflect national and PMI strategies, draw on best-available data, and align with the country context and health system. Proposed PMI investments support and build on those made by the Government Niger as well as other donors and partners.

Niger at a glance

- **Geography:** Sahel (25 percent, southern part) and Sahara Desert (75 percent)
- **Climate:** 3 seasons: hot (March to May), rainy (June to September) and cold (October to February)
- **Population (2019):** 21,5 million[1]
- **Population at risk of malaria (2019):** 21,5 million
- **Malaria incidence per 1000 population (2015):** 356.5/100,000[2]
- **Under-five mortality rate (2015):** 90/1000[1]
- **World Bank Income Classification & GDP (2017):** 8.12 billion USD[3]
- **Political system:** Semi-presidential representative democratic republic
- **Trafficking in Persons designations (2019):** Tier 2 Watch List [4]
- **Malaria funding and program support partners include (but are not limited to):**
    - Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund)
    - U.S. President's Malaria Initiative (PMI)
    - World Health Organization (WHO)
    - United Nation Children's Fund (UNICEF)
    - World Bank

[1] INS 2018
[2] DHS 2012
[3] World Bank 2019
[4] Trafficking in Persons Report- Department of State, 2019

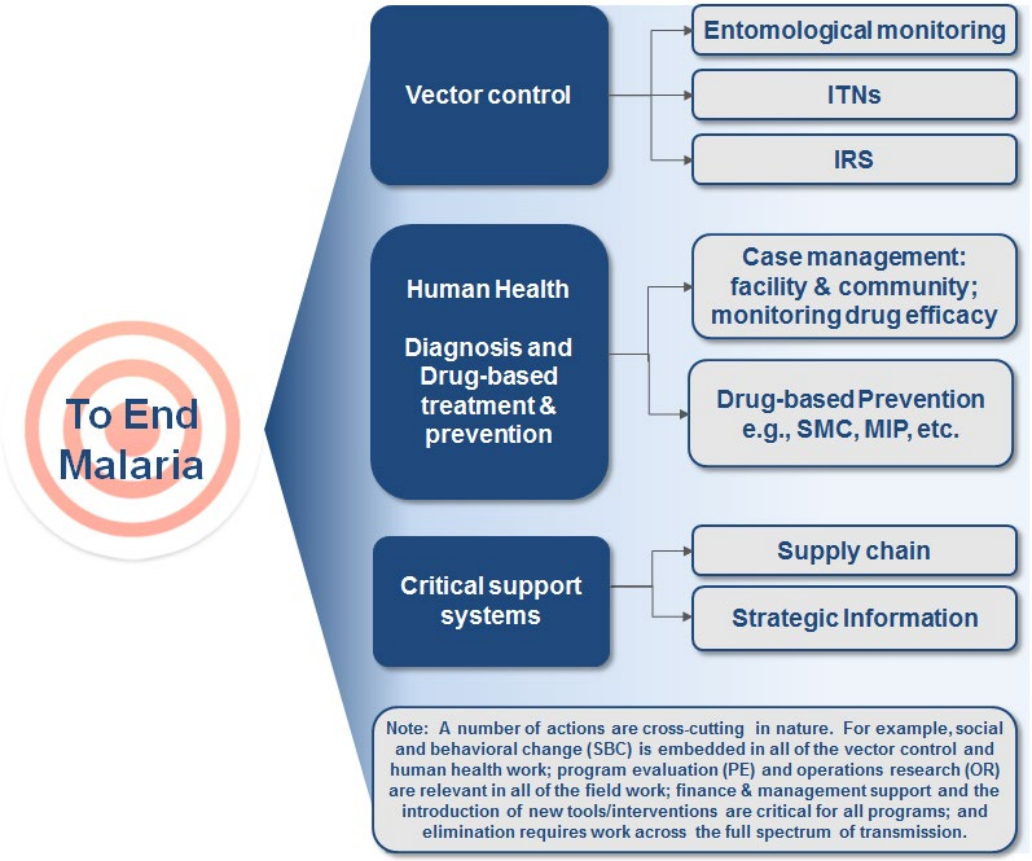
- **PMI Support of National Malaria Control Strategy:** PMI contributes to Niger's overall malaria strategy through supporting the implementation of the national malaria strategic plan (NMSP) from the National malaria control program (NMCP)
- **PMI Investments:** Niger began implementation as a PMI focus country in FY 17. The proposed FY 2020 PMI budget for Niger is $18 million that brings the total PMI investment to nearly $ 72 million.

PMI's approach is both consistent with and contributes to USAID's Journey to Self-Reliance framework. Building and strengthening the capacity of Niger's people and institutions – from the central level to communities – to effectively lead and implement evidence-based malaria control and elimination activities remains paramount to PMI. As denoted in Table 2 (the budget table), nearly all of PMI's planned support for FY 2020 in the areas of vector control, human health, supply chain and strategic information contains elements of capacity building and system strengthening.

In Niger, the systems such as commodity management, warehousing and data management are especially weak due to the low income level of the country, limited qualified human resources, limited investment of the government and lack of other system strengthening projects such as PEPFAR or Global Health Security Agenda. This combined with a lack of health coverage and basic health activities such as health communication leads to the need of PMI to invest in system strengthening and basic malaria related activities.

PMI organizes its activities and planning levels around the activities in Figure 1, in line with the national malaria strategy.

Figure 1. PMI's Approach to End Malaria



To accelerate the journey to self-reliance, PMI developed a programmatic inventory to assess the strengths and persistent challenges of Niger's program (see Annex B). The activities proposed in this MOP are tailored to draw on these strengths and address the weaknesses, which will be monitored to evaluate the effectiveness of capacity building efforts. In addition, while PMI is cognizant that it will take time before Niger is capable of fully financing its development priorities, PMI will work with other partners (e.g., the Global Fund to jointly track Niger's funding commitments across the malaria portfolio.

PMI organizes its activities and planning levels around the activities below, in line with the national malaria strategy. (Figure 1)

II. MALARIA SITUATION AND MALARIA CONTROL PROGRESS IN NIGER

Niger is one of the poorest countries in the world, with 80 percent of the population living on less than U.S. $2 a day and with only 48 percent of the population having access to health centers within a radius of 0-5 km[5]. The life expectancy at birth is 60.4 years.[6] Although most of the

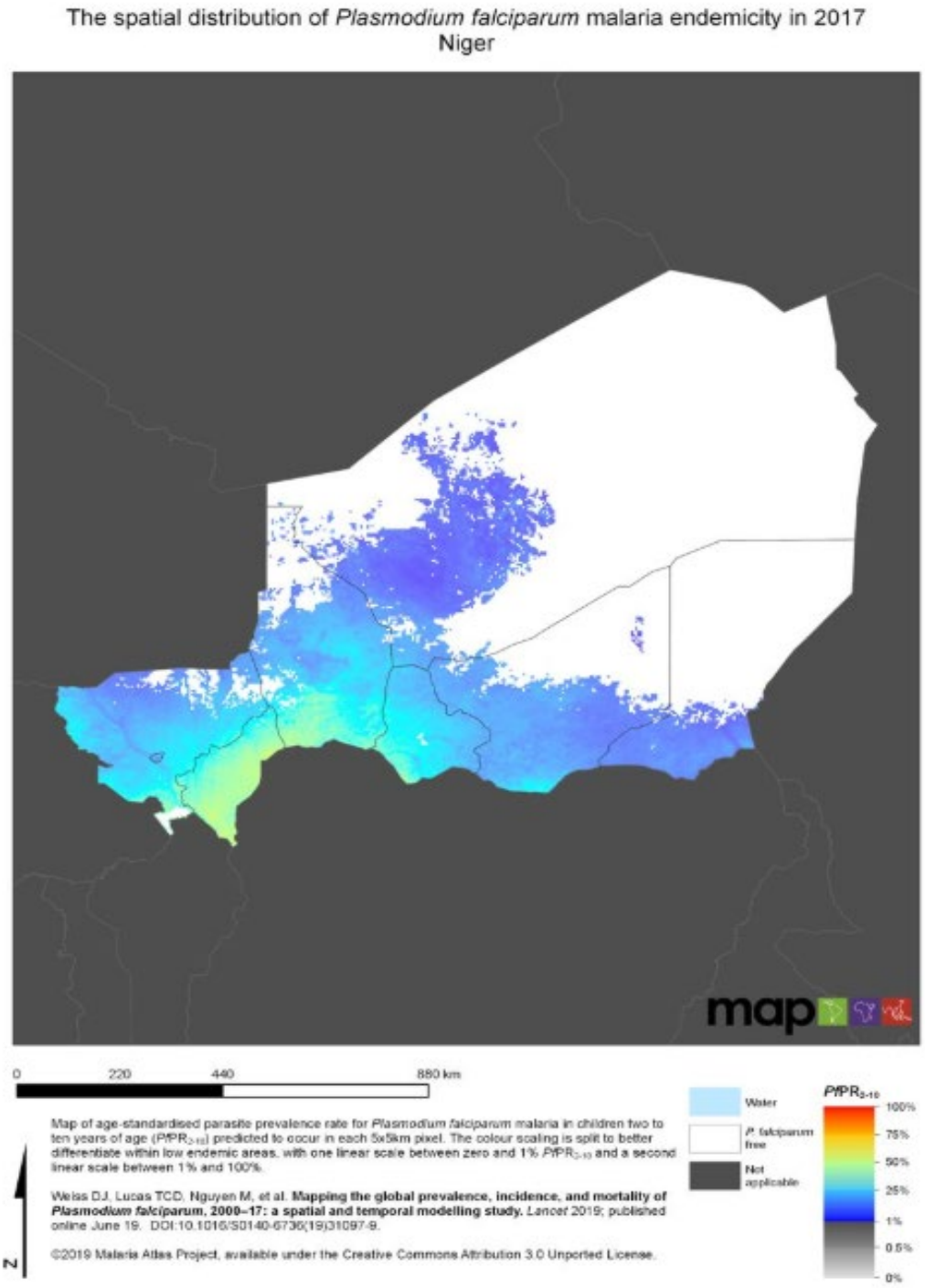
[5] NMSP 2017-2021
[6] United Nations Population Division, 2017

population, 84 percent, lives in rural areas, only 24 percent of all health care providers are found in rural areas[7]. Malaria, endemic throughout the country, is the primary cause of illness in Niger accounting for 28 percent of all illness in the country and 50 percent of all recorded deaths. *Anopheles gambiae* s.l. account for the majority of malaria transmitting mosquitoes in Niger and 99 percent of the cases are caused by *Plasmodium falciparum*. According to Niger's NMCP statistics, in 2018, there were 4,726,885 suspected cases of which 3,036,699 were confirmed malaria cases. Of the confirmed cases 2,795,527 were uncomplicated malaria cases, 241,172 severe malaria cases, and 4,035 malaria deaths. According to the NMSP, between 2014 and 2015, children under five years of age accounted for about three-fifths of the burden of disease (62 percent) and about three-quarters of malaria-related mortality in the country (74 percent)[8]. These figures underrepresent the actual situation of the country due to poor access to health facilities and weak health information system.

Malaria parasite prevalence among children under five years of age by geographic area currently not available. A Malaria Indicator Survey is planned in August 2020 to collect this information.

[7] NMSP 2017-2021
[8] NMSP 2017-2021

Figure 2. Trends in Malaria Prevalence [9]



[9] https://map.ox.ac.uk/trends/country/NE

Figure 3. Trends in Prevalence of Low Hemoglobin, *Percent of Children Age 6-29 Months with Moderate-to-Severe Anemia (Hemoglobin < 8.0 g/dl)*

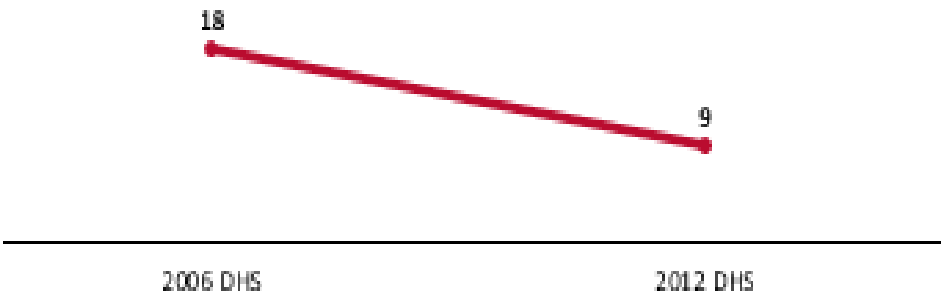


Figure 4. Key Indicators for Malaria Prevention and Treatment Coverage and Impact Indicators from Demographic Health Surveys (DHS) from 2006-2012

Indicator	2006 DHS	2012 DHS
% Households with at least one long lasting insecticide-treated mosquito net (LLIN)	43	61
% Households with at least one LLIN for every two people	5	17
% Population with access to a LLIN	20	37
% Population that slept under a LLIN the previous night	4	14
% Children under five years old who slept under a LLIN the previous night	7	20
% Pregnant women who slept under a LLIN the previous night	7	20
% Children under five years old with fever in the last two weeks for whom advice or treatment was sought[1]	64	64
% Children under five with fever in the last two weeks who had a finger or heel stick	n/a	14
% Children receiving an artemisinin-based combination therapy (ACT) among children under five years old with fever in the last two weeks who received any antimalarial drugs	n/a	80
% Women who received two or more doses of intermittent preventive treatment for pregnant women (IPTp) during their last pregnancy in the last two years[2]	1	35
% Women who received three or more doses of IPTp during their last pregnancy in the last two years[2]	n/a	9
Under-five mortality rate per 1,000 live births	198	127
% Children under five years old with parasitemia (by microscopy, if done)	n/a	n/a
% Children under five years old with parasitemia (by RDT, if done)	n/a	n/a
% Children under five years old with severe anemia (Hb<8gm/dl)	18	9

[1.] Note that this indicator has been recalculated according to the newest definition, advice or treatment from any source excluding traditional practitioners

[2.] Note that this indicator has been recalculated according to the newest definition, at least the specified number of doses of SP/Fansidar from any source

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

	2014	2015	2016	2017	2018
# Suspect malaria cases[1]	N/A	N/A	N/A	4,112,292	4,726,885
# Patients receiving diagnostic test for malaria[2]	3, 387, 760	N/A	N/A	3,874,040	4,483,533
Total # malaria cases[3] (confirmed and presumed)	3,683,922	3,817,634	3,642,967	2,918,057	3,338,211
# Confirmed cases[4]	2,042,237	3,222,613	3,021,595	2,663,709	3,036,699
# Presumed cases[5]	1641,685	1,066,731	1,415,209	N/A	N/A
% Malaria cases confirmed[6]	55%	85%	83%	91%	91%
Test positivity rate[7]	60%	N/A	N/A	69%	68%
Total # <5 malaria cases[8]	2,209,928	2,178,562	2,053,113	1,326,836	1,804,783
% Cases under 5[9]	60%	58%	55%	58%	54%
Total # severe cases[10]	233,156	180,546	172,407	144,045	241,172
Total # malaria deaths[11]	2,691	2,778	3,506	2,316	4,035
# Facilities reporting[12]	1,209	1,241	1,280	3,389	3,495
Data form completeness (%)[13]	94%	92%	92%	85%	84%

Note: Data extracted from the annual health statistics report (2014, 2015 and 2016) and NMCP quarterly report (2017 and 2018) N/A = not available

Definitions

[1.] Number of patients presenting with signs or symptoms considered to be possibly due to malaria

[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: Number of confirmed cases (#4 above)/Number of patients receiving a diagnostic test for malaria (RDT or microscopy) (#2 above)

[8.] Total #<5 cases: Total number of <5 cases. Outpatient, inpatient, confirmed, and unconfirmed

[9.] Total # <5 cases (#8 above) / Total # of cases (# 3 above)

[11.] Total # Malaria Deaths Reported: All ages, outpatient, inpatient, confirmed, and unconfirmed

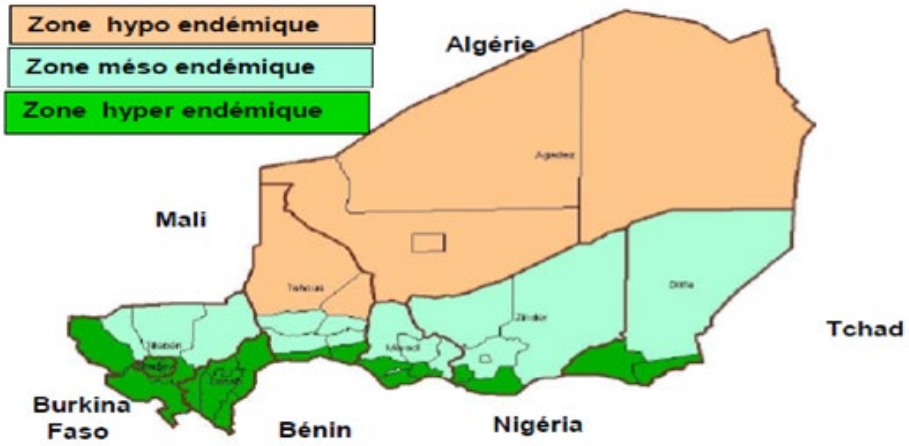
[12.] Total # of health facilities reporting data into the HMIS/DHIS2 system for that year

[13.] Data completeness: Number of monthly reports received from health facilities/Number of health facility reports expected

III. OVERVIEW OF PMI'S SUPPORT OF NIGER'S MALARIA CONTROL STRATEGY

PMI will contribute to Niger's overall malaria strategy and will support the NMCP to implement their national malaria strategic plan (NMSP) but will emphasize specific interventions and geographic areas to maximize impact and complement existing activities. Malaria is a health problem throughout Niger, but the number of malaria cases and malaria deaths recorded in the national health statistics reports show that the burden is disproportionately higher in the two southern transmission zones designated by the NMCP as hyper- and meso-endemic (see figure 6).

Figure 6. Niger's Malaria Transmission



PMI will prioritize investments across key proven interventions including vector control, service delivery (case management, malaria in pregnancy and seasonal malaria chemoprevention) and commodities. PMI will provide support to strengthen key aspects of the health system including supply chain management, surveillance, monitoring and evaluation, and social behavior change. PMI will work at the national level with the NMCP and malaria partners to provide technical assistance and support across all interventions. PMI's funding will also provide commodities nationwide and direct implementation support in two PMI focus regions (Dosso and Tahoua) in the southern part of the country where the malaria burden is highest. PMI's contributions will complement the support provided by the Global Fund and other donors for similar interventions in other parts of the country.

PMI Intervention Support Map

Depending on the specific activity, the PMI support is on central level, nationwide, or focused to the two PMI target regions of Dosso and Tahoua. Figures 7-9 show the geographical intervention area for PMI and other donors for seasonal malaria chemoprevention (SMC), case management and commodities.

Figure 7. PNLP Donor Landscape for SMC, 2019

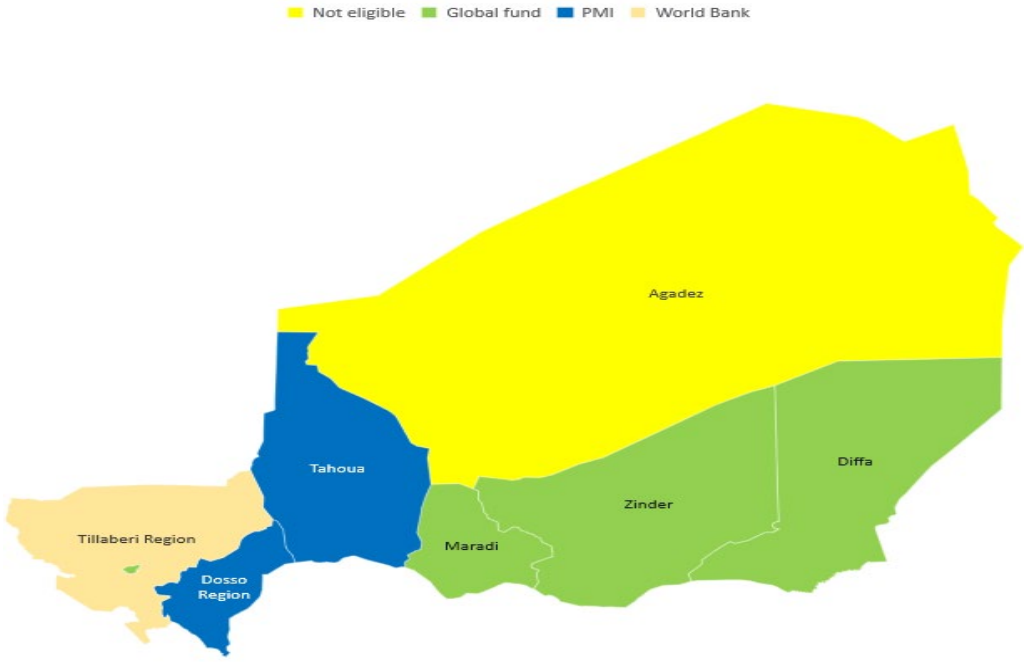


Figure 8. PNLP Partner Landscape for Case Management

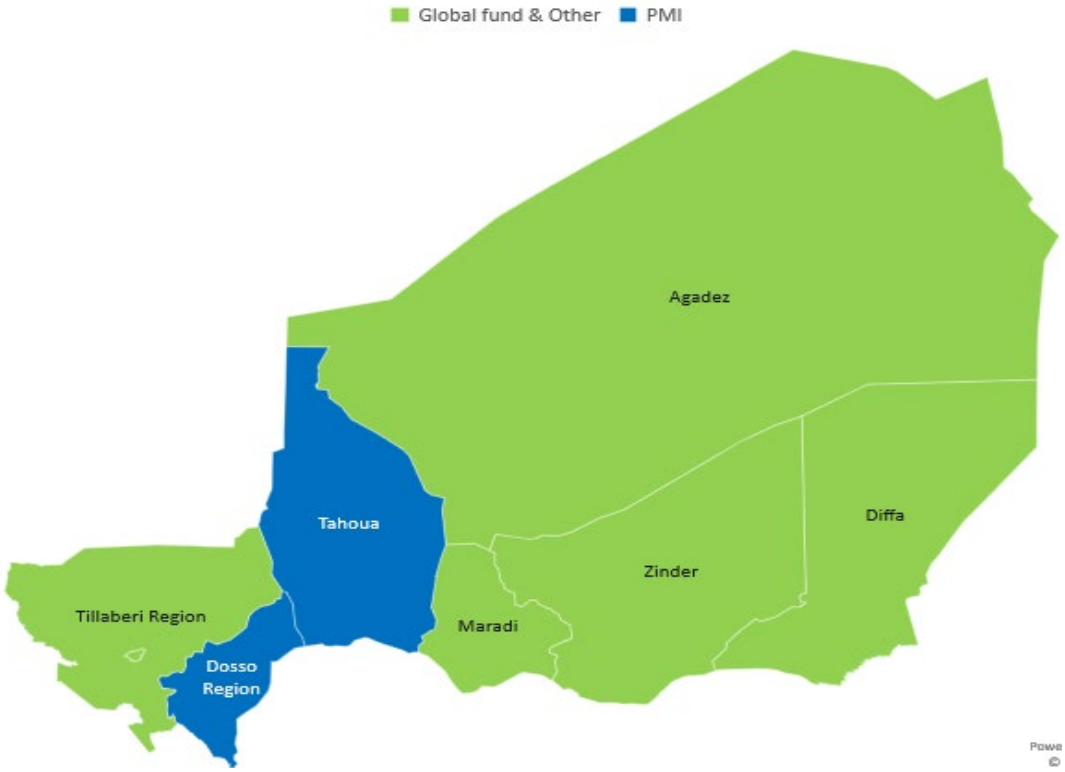


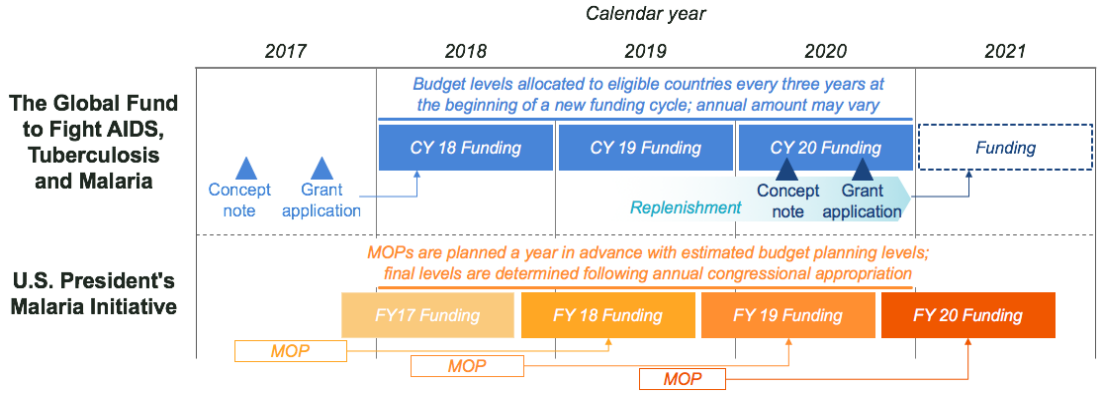
Figure 9. PNLP Partner Landscape for Commodities & Supply Chain Intervention

IV. PARTNER FUNDING LANDSCAPE

PMI emphasizes the importance of partner alignment on malaria control. With the recognition that each of the agencies emphasizes complementary funding support for the national malaria control effort in a given country, over the last year, PMI, Global Fund, and the Bill and Melinda Gates Foundation (BMGF) set out to harmonize financial, supply chain, and programmatic data, and this effort remains ongoing as of the time of this MOP. A harmonized financial taxonomy has been developed for PMI and Global Fund (i.e. mapping cost categories across organizations).

The illustrative figure 8 below visualizes the annual cycle of PMI funding and the MOP implementation year. As the figure illustrates, any given FY MOP funds activities that take place during the next FY. For example, a FY18 MOP funds implementation during FY19. Whereas Global Fund funding (and often, other partners and host country governments) is based on a three-year grant cycle on a calendar year (CY) timeframe during which activities were implemented. Annual PMI country budget allocations depend largely on the U.S. Congress' total overall malaria funding appropriation to USAID in a given fiscal year, as well as other considerations (e.g. previous funding levels, activity and program pipelines, other donor contributions, known commodity needs/gaps, progress on ongoing PMI-supported activities, clear evidence of continued government commitment to malaria control).

Figure 10: PMI and Global Fund Funding Cycle Alignment



Footnote: In some cases, Global Fund's funding may come in partway through the calendar year. Funding levels in "Section IV - Partner Funding Landscape" and commodity procurement amounts listed in "Annex A - Intervention Specific Data" may differ given the lag between the year that funding was planned and the year when procurement orders were placed. Differences may be a reflection of timing and/or based on changes in commodity consumption levels at country level, changes in commodity costs, or other donor orders.

The tables below summarize contributions by external partners and host country government in calendar years 2018-20, with the goal of highlighting total country investments. For Niger, data is available for PMI (FY 18) and Global Fund (CY 2018-20). As the Global Fund 2020-22 grant funding cycle is not yet underway at the time of this PMI FY20 MOP development, Global Fund country investments for the 2021 implementation period and beyond are not yet known. Note that the host country government invests substantial funding into the national-to-local infrastructure and service delivery for malaria and many other programs. However, there has not been a standardized method for attributing those investments to malaria specifically. Thus, it

may not yet be possible in the FY 2020 MOP cycle to attribute funding from the host country government. There may be similar challenges for other partners.

Figure 11. Annual budget by Level 1 category

Year[1]	Funder	Vector Control	Case Management	Drug-Based prevention[2]	Supply Chain[3]	M&E & Research	Other Cross-Cutting and Health Systems Strengthening	Total
FY17/CY18	PMI	$5.9M	$4.5M	$4.2M	$0.6M	$0.4M	$2.4M	$18.0M
	Global Fund	$13.0M	$2.2M	$6.6M	$0.7M	$0.6M	$0.4M	$23.5M
	Host Gov		$0.9M					$0.9M
	UNICEF			$0.3M				$0.3M
	World bank		$1.1M	$0.9M				$2.0M
	Total	**$18.9M**	**$8.7M**	**$12.0M**	**$1.3M**	**$1.0M**	**$2.8M**	**$44.7M**
FY18/CY19	PMI	$1.3M	$4.8M	$5.6M	$2.0M	$1.5M	$2.8M	$18.0M
	Global Fund	$9.5M	$2.0M	$6.4M	$0.7M	$1.0M	$0.5M	$20.1M
	Host Gov		$1.4M					$1.4M
	UNICEF							$0.0M
	World bank		$1.1M	$0.9M				$2.0M
	Total	**$10.8M**	**$9.3M**	**$12.9M**	**$2.7M**	**$2.5M**	**$3.3M**	**41.5M**
FY19/CY20	PMI	$1.8M	$5.1M	$5.7M	$2.0M	$0.6M	$2.7M	$18.0M
	Global Fund	$22.9M	$2.6M	$9.8M	$1.4M	$1.7M	$1.4M	$39.8M
	Host Gov		$1.4M					$1.4M
	UNICEF							$0.0M
	World bank							$0.0
	Total	**$24.7M**	**$9.1M**	**$15.5M**	**$3.4M**	**$2.3M**	**$4.1M**	**$59.2M**

1. Each year's figures the FY for PMI and CY for Global Fund that most closely align. Global Fund budget data accurate as of July 1, 2019. PMI budget data accurate as of Sept 1, 2019
2. Drug-based prevention, including SMC and MIP where relevant
3. Covers management of in-country warehousing & distribution of malaria commodities, except for ITNs which are separately captured under "Vector Control"

Figure 12. Annual Budget by Level 3 Category, *Detailed Breakdown for PMI and Global Fund*

Level 1 Category	Level 3 Category	FY17/CY18[1]		FY18/CY19[1]		FY19/CY20[1]	
		PMI	Global Fund	PMI	Global Fund	PMI	Global Fund
Vector Control	Procure LLINs for Continuous Distribution	$1.9M	$3.8M	$0.4M	$0.0	$0.9M	$4.8M
	Distribute LLINs via continuous distribution	$1.2M	$0.1	-	$0.2M	$0.2M	$0.4M
	Procure LLINs for mass campaigns	$1.9M	$6.7M	-	$7.9M	-	$9.1M
	Distribute LLINs via Mass Campaigns	-	$2.3M	-	$1.3M	-	$8.4M

Level 1 Category	Level 3 Category	FY17/CY18[1]		FY18/CY19[1]		FY19/CY20[1]	
		PMI	Global Fund	PMI	Global Fund	PMI	Global Fund
	Other LLIN Implementation	$0.3M	-	$0.3M	-	$0.3M	-
	Indoor residual spraying (IRS) Implementation[4]	-	-	-	-	-	-
	Procure IRS Insecticide	-	-	-	-	-	-
	Other IRS	-	-	-	-	-	-
	Entomological Monitoring	$0.6M					
	Social and behavior change (SBC) for Vector Control[5]	-	-	-	-	-	-
	Other vector control measures	-	-	-	-	-	-
	Removing human rights- and gender-related barriers to vector control programs	-	-	-	-	-	-
Case Management	Active Case Detection	-	-	-	-	-	-
	Community-based case management	-	$0.3M	-	$0.4M	-	$0.4M
	Facility-based case management	-	$0.3M	-	$0.1M	-	$0.2M
	Private-sector case management	-	-	-	-	-	-
	Procure ACTs	$1.0M	$0.8M	$0.5M	$0.2M	$1.1M	$0.3M
	Procure Drugs for Severe Malaria	-	$0.5M	$1.5M	$1.3M	$2.1M	$0.8M
	Procure Other Diagnosis-Related Commodities	-	-	-	-	-	-
	Procure Other Treatment-Related Commodities	-	-	-	-	-	-
	Procure RDTs	$1.1M	$0.6M	$1.6M	$0.1M	$0.6M	$1.1M
	Therapeutic Efficacy	-	-	-	$0.0M	-	-
	SBC for Case Management[5]	-	$0.004M	-	$0.004M	-	$0.002M
	Other Case Management	$2.4M	$0.0M	$1.3M	-	$1.2M	-
Drug-Based Prevention[2]	Procure seasonal malaria chemoprevention (SMC) - Related Commodities	$2.0M	$3.5M	$1.9M	$3.4M	$2.0M	$4.8M
	SMC Implementation	$1.0M	$2.6M	$3.1M	$3.0M	$3.2M	$4.1M

Level 1 Category	Level 3 Category	FY17/CY18[1]		FY18/CY19[1]		FY19/CY20[1]	
		PMI	Global Fund	PMI	Global Fund	PMI	Global Fund
	Prevention of Malaria in Pregnancy Implementation	$0.5M	$0.5	$0.3M	$0.0	$0.3M	$0.9
	Procure IPTp-Related Commodities	$0.7M	-	$0.3M		$0.3M	
	IPTi	-	-	-	-	-	-
	SBC for Drug-Based Prevention[5]	-	-	-	-	-	-
	Other Prevention	-	-	-	-	-	-
Supply Chain[3]	In-Country Supply Chain[3]	-	-	$1.4M	-	$1.4M	-
	Supply Chain Infrastructure	-	-	-	-	-	-
	Ensuring Quality	-	-	-	-	-	-
	Pharmaceutical Management Systems Strengthening	$0.6M	-	$0.6M	-	$0.6M	-
	Supply Chain System Strengthening	-	0.7M	-	$0.7M	-	$1.4M
Monitoring, Evaluation & Research	Reporting, Monitoring, and Evaluation	$0.4M	$0.6M	$0.8M	$1.0M	$0.6M	$1.3M
	Program and data quality, analysis and operations research	-	$0.01M	-	$0.03M	-	$0.03M
	Surveys	-	-	$0.8M	-	-	$0.3M
	Other Data Sources	-	-	-	-	-	-
	Support for Field Epidemiology Training Program (FETP)	-	-	-	-	-	-
Other Cross-Cutting and Health Systems Strengthening	Integrated service delivery, quality improvement, and national health strategies	-	$0.03M	-	$0.001M	-	$0.03M
	Financial management systems	-		-	$0.1M	-	$0.004M
	Community responses and systems	-		-		-	$0.9M
	Support for PCV and SPAs	-	-	-	-	-	-

Level 1 Category	Level 3 Category	FY17/CY18[1]		FY18/CY19[1]		FY19/CY20[1]	
		PMI	Global Fund	PMI	Global Fund	PMI	Global Fund
	Cross-Cutting Human Resources for Health	-	$0.4M	$0.4M	$0.5M	$0.4M	$0.5M
	Central and Regional Program management[6]	$0.2M		$0.6M		$0.5M	
	In-Country Staffing and Administration	$1.8M	-	$1.8M	-	$1.9M	-
	Other Program Management	-		-	$1.0M	-	$1.0M
	SBC Unspecified[5]	$0.4M	-	$0.4M	-	$0.4M	-
Total		**$18.0M**	**$23.1M**	**$18.0M**	**$20.2M**	**$18.0M**	**$40.7M**

1. Each year's figures represent the FY for PMI and CY for Global Fund that most closely align. Global Fund budget data accurate as of July 1, 2019. PMI budget data accurate as of Sept 1, 2019
2. Drug-based prevention, including SMC and MIP where relevant
3. Covers management of in-country warehousing & distribution of malaria commodities, except for ITNs which are separately captured under "Vector Control"
4. May include cost of IRS insecticides if full cost of IRS implementation including commodities was bundled within single line in prior year's Table 2
5. SBC was not historically split in the PMI budget across intervention areas, hence the row "SBC (unspecified)" for the FY2020 MOP cycle. Going forward, SBC proposed activities will be categorized across vector control, case management, and prevention (new categories)
6. PMI Proposed Activity "National-level support for case management" rolls up under "Case Management" Level 1

Note: Categories shown reflect the harmonized financial taxonomy (Levels 1-3) developed by BMGF, Global Fund, and PMI in 2019, as part of a broader data harmonization initiative; potential for categories to continue to evolve through FY 2020 MOP process, as well as for additional donors and host country governments to adopt and reflect funding using the same categories

Figure 13. Annual Budget, *Breakdown by Commodity*

Year[1]	Funder	LLINs for continuous distribution	LLINs for mass distribution	IRS Insecticide[4]	ACTs	RDTs	Severe Malaria	SMC-Related	IPTp-related	Total
FY17/CY18	PMI[2]	$1.9M	$1.9M	-	$1.0M	$1.2M	-	$2.0M	$0.7M	**$8.7M**
	Global Fund[3]	$3.4M	$6.5M	-	$0.6M	$0.4M	$0.5M	$3.0M	$0.4M-	**$14.8M**
	Host Gov				$0.3M	$0.6M				**$0.9M**
	UNICEF							$0.3M		**$0.3M**
	World bank				$0.4M	$0.7M		$0.9M		**$2.0M**
	Total	**$5.3M**	**$8.4M**	**-**	**$2.3M**	**$2.9M**	**$0.5M**	**$6.2M**	**$1.1M**	**$26.7M**
FY18/CY19	PMI[2]	$0.4M	-	-	$0.5M	$1.6M	$1.5M	$1.9M	$0.3M	**$6.2M**
	Global Fund[3]		$7.8M	-	$0.1M	$0.1M	$1.0M	$2.9M	-	**$11.9M**
	Host Gov	-	-	-	$1M	$0.4M	-	-	-	**$1.4M**
	UNICEF									**$0M**

Year[1]	Funder	LLINs for continuous distribution	LLINs for mass distribution	IRS Insecticide[4]	ACTs	RDTs	Severe Malaria	SMC-Related	IPTp-related	Total
	World Bank				$0.4M	$0.7M		$0.9M		**$2M**
	Total	**$0.4M**	**$7.8M**	**-**	**$2.0M**	**$2.8M**	**$2.5M**	**$5.7M**	**$0.3M**	**$21.5M**
FY19/ CY20	PMI[2]	$0.9M	-	-	$1.1M	$0.6M	$2.1M	$2.0M	$0.3M	**$7.0M**
	Global Fund[3]	$3.8M	$8.8M	-	$0.2M	$0.9M	$0.6M	$3.8M	$0.7M	**$0.1M**
	Host Gov	-	-	-	$1M	$0.4M	-	-	-	**$1.4M**
	UNICEF									**$0M**
	World bank									**$0M**
	Total	**$4.7M**	**$8.8M**	**-**	**$2.3M**	**$1.9M**	**$2.7M**	**$5.8M**	**$1.0**	**$27.2M**

[1.] Each year's figures represent the FY for PMI and CY for Global Fund that most closely align Global Fund budget data accurate as of July 1, 2019. PMI budget data accurate as of Sept 1, 2019

[2.] PMI commodity costs are fully loaded, including costs for the ex-works price of the commodity, quality control, freight, insurance, and customs

[3.] Global Fund commodity costs in table above only include ex-works commodity value in a given year. Additional costs, including quality control, freight, insurance, and customs totaled $8.1 million over the CY 2018-2020 period

RS insecticide; for PMI, IRS insecticide commodity costs may be inextricable from IRS implementation costs in historical data – field left blank where this is the case.

Note: Categories shown reflect the harmonized financial taxonomy (Levels 1-3) developed by BMGF, Global Fund, and PMI in 2019, as part of a broader data harmonization initiative; potential for categories to continue to evolve through FY 2020 MOP process, as well as for additional donors and host country governments to adopt and reflect funding using the same categories.

V. ACTIVITIES TO BE SUPPORTED WITH FY 2020 FUNDING

Please see the FY 2020 budget tables (Tables 1 and 2) for a detailed list of activities PMI proposes to support in Niger with FY 2020 funding. Please refer to www.pmi.gov/resource-library/mops for the latest tables. Key data used for decision-making can be found in Annex A.

ANNEX A: INTERVENTION-SPECIFIC DATA

1. VECTOR CONTROL

NMCP objective
The Niger NMSP 2017-2021 calls for three insecticide-based vector control interventions: long lasting insecticide treated nets (LLINs), indoor residual spraying (IRS), and larval control. Niger prioritizes the distribution and promotion of the use of LLINs as a key component of its national malaria prevention strategy. Its target goal is to have 80 percent of the population sleeping under an LLIN by 2021. The plan also calls for comprehensive entomology monitoring, based on WHO recommended methods, to inform strategy and to document impact.
NMCP approach
To attain universal access of one net for every two people, the NMCP implements a strategy comprising two main components: rolling mass distribution campaigns every three years to cover the population at risk; and routine distribution nationwide targeting vulnerable populations through antenatal clinic attendees and children under one year of age through routine immunization through the EPI vaccination clinics. According to the updated malaria treatment guidelines (2017), the official government policy is to provide an LLIN at the first antenatal care (ANC) visit accompanied by counseling on its use. Niger conducted a Service Availability and Readiness Assessment (SARA) in 2015 which showed that only 46 percent of facilities had LLINs in stock for routine distribution. Many service providers also do not provide LLINs during the initial ANC visit, hoping that delaying distribution will encourage women to attend more antenatal consultations. But because a lot of women wait until they're close to giving birth before seeking health care, this has lowered the number of pregnant women receiving LLINs during ANC. To determine the LLIN need, the NMCP applies the World Health Organization (WHO) recommended quantification of one LLIN for every 1.8 people. Financial support for IRS is not available at this time and to date, no recent indoor residual spraying has occurred in the country.
PMI objective, in support of NMCP
The proportion of households owning at least one LLIN has increased in Niger from 37% (2006 Demographic and Health Survey (DHS) to 70% (2012 DHS) in urban zones and from 44% to 60% during the same period in rural areas. However, the LLIN use/access ratio in Niger, which measures population-level use in relation to population-level access to an LLIN, remains low, ranging from 0.23 in Tahoua to 0.66 in Niamey (2012 DHS). With the exception of Niamey, this ratio is well below the 0.60 threshold for a "poor" rating. PMI will complement Global Fund and other partner contributions to support the NMCP's LLIN distribution.

The NMCP and partners are conducting mass campaigns targeting to cover the whole country every 3 years using rolling campaigns. It is possible that there will be no campaign in 2021 and that the country will move to a national campaign to cover all the hyper and meso-endemic regions in 2022. In addition, it is expected that the current risk area for malaria will be expanded after the malaria risk maps will be updated (expected early 2020). Because no campaign is planned for the PMI target regions in 2021, PMI will provide only support to the routine LLIN distribution through ANC consultations and EPI activities.

PMI will support the routine distribution on national level through technical assistance to PNLP. PMI will move away from a verticalization of the routine LLIN distribution through ensuring that the Direction of Maternal Health (*Direction de la santé de la mère et de l'enfant,* DSME) and the direction of Immunization (DI) at the Ministry of Health (MOH) add LLIN distribution as a routine activity during the ANC and EPI activities. PMI will support PNLP to ensure that LLIN distribution according to NMCP guidelines are included in DSME and DI guidelines, training modules, supervision tools and patient booklets and tools.

PMI will ensure that the guidelines are communicated on a national level and on all levels of the health structure in the two PMI target regions. PMI will also support SBC campaigns to promote LLIN use on national level and in the two PMI focus regions through posters and radio spots.

PMI will continue support to NMCP to implement LLIN durability monitoring following the 2018 campaign. Given the limited PMI budget and the presence of other partners, PMI will only procure a limited number of LLINs.

PMI-supported recent progress (past ~12-18 months)

- Systematic entomological monitoring in nine sentinel sites including longitudinal bionomic data collection, insecticide susceptibility monitoring to numerous insecticides and synergists assays.
- Training of technicians from NMCP and the *Centre de Recherche Médical et Sanitaire (CERMES)* and the donation of equipment at CERMES
- Procurement of LLIN for routine distribution through ANC and EPI service
- A qualitative assessment of continuous LLIN distribution in Niger, which resulted in a report which was shared with PNLP and used to develop routine LLIN distribution guidelines
- LLIN durability monitoring of Olyset nets distributed during the June 2018 mass campaign in two districts: Gazaoua (in the Maradi region) and Madaoua (Tahoua region). Baseline data collection was conducted in October 2018, four months after the mass distribution campaign in 2 districts. In total, 240 households were visited and 758 Olyset LLINs were registered in the study cohort. Among the households visited, 84.2% had at least one other net and details were recorded for 579 nets originating from sources other than the June 2018 campaign. In

total, 35.5% of campaign LLINs were found hanging over a sleeping space and only 1.9% were still in their packaging; 61.5% of campaign LLINs were reportedly used the previous night. By comparison, 32.3% of the non-campaign nets were found hanging and 78.8% were reportedly used the previous night. At the household level, 82.2% of households had one LLIN for every two people, while population access to LLINs was high at 92.1%. Four months after the distribution campaign, total campaign LLIN attrition was 7.2%, with a 1% difference between the two sites (7.7% in Gazaoua and 6.7% in Madaoua). The main reason for loss was due to nets being given to other family members and friends (6.5%). Across both sites, 41.4% of the Olyset LLINs had at least one hole, but holes were few or small, and 97.8% of the LLINs were still in serviceable condition. The study captured data on a range of risk factors for net durability, including housing characteristics and behaviors, respondent message exposure, respondent attitudes to nets and net care and repair, and the type of sleeping spaces, among others. Differences were seen across districts in most risk factors.

A separate sample of Olyset nets from the 2018 campaign were randomly sampled at each study site to undergo biological tests and evaluate insecticidal effectiveness. This work was conducted by the Swiss Centre for Scientific Research (CSRS) in Abidjan, Côte d'Ivoire. Sixty LLINs were bio-assayed, with 31 and 29 nets examined from Gazaoua and Madaoua districts, respectively. Four months after distribution, the median 60-minute knock-down effect was 87.5% in Gazaoua and 100% in Madaoua, with Gazaoua falling under the WHO threshold of 95%. Median mortality was 35.0% in Gazaoua and 72.5% in Madaoua, both below the WHO threshold of 80% and particularly low in Gazaoua where only 7 out of the 31 tested nets had a 24-hour mortality greater than 80%. The second round of data collection took place in June 2019, 12 months after the mass distribution campaign in 2018.

PMI-supported planned activities (next ~12-18 months, supported by currently available funds)

- Continue entomological monitoring in 10 sentinel sites
- Complete the rehabilitation of the insectary at CERMES
- Provide technical assistance to routine LLIN distribution using the known distribution channels (during the ANC and EPI activities)
- Procurement of LLIN for routine distribution through ANC and EPI service
- Finalize, produce and disseminate printed and electronic copies of Niger's new National routine LLIN distribution directives. A high-level event will be organized in Niamey to present the guide to national level stakeholders, and more than 1600 copies of the operational directives will be produced (either printed or provided on USBs) for distribution to the regional, district and health center level. PMI will also disseminate copies of the guide and operational directives to non-governmental organizations working in malaria control in Niger, relevant mailing lists, and advocate for the use of this tool by partners

- Organize a meeting to be led by the NMCP with the DSME, DI and stakeholders to review the inventory of recently updated materials (e.g., the mother and child health cards updated in 2018), planned trainings, to ensure concordance with the new LLIN guidelines
- Reinforce SBC in collaboration with other partners

1.A. ENTOMOLOGICAL MONITORING

Key Goal

Determine the geographic distribution, bionomics, and insecticide resistance profiles of the main malaria vectors in the country to inform vector control decision-making.

Do you propose to increase, decrease, or maintain funding allocation levels for this activity? Why, and what data did you use to arrive at that conclusion?

We plan to decrease slightly the previous funding level because some of the initial funds were to cover upfront costs such as rehabilitation of the insectary, purchasing equipment and intensive capacity building. The scope of work of this MOP include ongoing capacity building of the entomological team that collect the data on the field and the PNLP entomological team in addition to the continuous support to entomological monitoring in 10 sentinel sites.

Please see Table 2 for a detailed list of proposed activities with FY 2020 funding.

Key Question 1

Where is entomological monitoring taking place, what types of activities are occurring, and what is the source of funding?

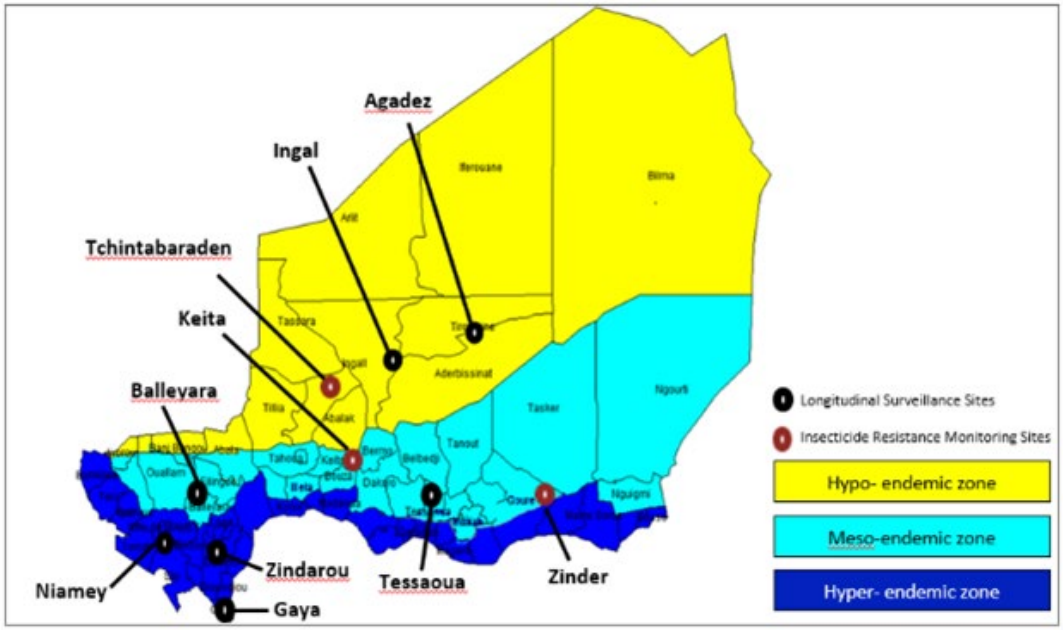
Supporting Data

Since 2018, PMI support entomological monitoring activities to generate data to support the NMCP in making strategic vector control decisions and to establish baseline data in anticipation of future expanded insecticide-based vector control activities. The entomological surveillance data provide information on the susceptibility status of *Anopheles gambiae s.l.* across the three endemicity strata in Niger. In addition, comprehensive vector bionomics monitoring, paired with health facility-based information on malaria incidence, and population density will help generate a robust foundation of data for decision making as part of the integrated vector control strategy in future years.

In the past, some entomological activities were supported by the Global Fund and WHO, but not in a systematic manner. The NMCP and other donors agreed that PMI will become the only funding source and technical advisor for this activity. PMI will support CERMES to conduct the

entomological monitoring of malaria vectors in 10 selected sites of Niger, under the leadership of NMCP. The sites represent the three malaria endemicity zones in Niger: hypo-endemic, meso-endemic and hyper-endemic. (Figure A1 and A2). It is possible that the number of sentinel sites will be adapted/decreased after the malaria risk mapping is updated (early 2020).

Figure A1. Map of PMI VectorLink Entomological Monitoring Sites in Niger



In all the selected sites, longitudinal vector monitoring using human landing catch (HLC) and pyrethrum spray catch (PSC) is conducted. PMI assesses the following parameters: species identification, vector density, biting rates and times, age structure, blood meal types and infection rates. PMI also supports the susceptibility testing of *An. gambiae s.l.* mosquitoes against pyrethroid insecticides, Pirimiphos-methyl, bendiocarb, chlorfenapyr and clothianidin using WHO susceptibility test kits and CDC bottle assays for chlorfenapyr. When resistance is observed, resistance intensity and synergist effect of Piperonyl butoxide (PBO) are also evaluated in the sites where enough larvae are collected. PMI supported laboratory evaluations including molecular testing for the presence of the knock down resistance mechanism Kdr and Ace1 mutations as well as the presence of sporozoites are ongoing and are not available at this time.

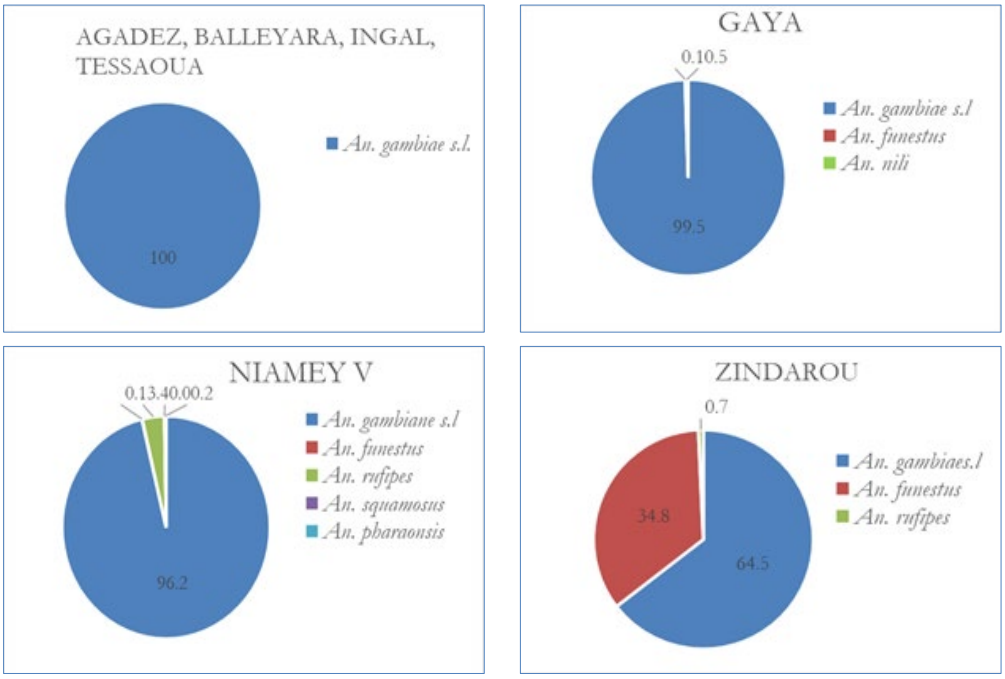
Based on the data collected during the first year of PMI support to entomological sites[10], *An. gambiae* s.l. was abundant (96.5%; n=11,113) followed by *An. funestus* (1.7%; n= 200) and, *An. rufipes* (1.5%; n=175). *An. pharaonsis, An. nili*, and *An. squamosus*, all combined made up less than 0.5% of the total collection (Figure 16). Data from collections prior to PMI indicate that four members of the *An. gambiae* complex are present with *An. coluzzii* predominating some locations and *An gambiae* s.s. in others (Figure 17).

[10] The PMI VectorLink Niger Annual Entomological Report, April 2018 – March 2019 Rockville, MD. The PMI VectorLink Project, Abt Associates Inc.

Figure A2. List of Entomological Monitoring Sites in Niger and Number of Yearly Collections, 2018-2019

Region	District	Eco-epidemiological zones	Collections/ year (2018/2019)	Entomological monitoring (HLC, PSC, CDC)	Insecticide resistance[1]
Agadez	Ingal	Hypoendemic	6	x	x
Agadez	Agadez		6	x	x
Tahouna	Fararat	Mesoendemic	6	x	x
Dosso	Zindarou		6	x	x
Zinder	Guidimouni		6	x	x
Tillaberi	Balleraya		6	x	x
Maradi	Tessaoua		6	x	x
Niamey	Niamey V	Hyperendemic	12	x	x
Dosso	Gaya		6	x	x

Figure A3. Species Composition of Mosquitoes Collected by HLC and PSC in the Entomological Monitoring Sites in Niger, 2018[11]

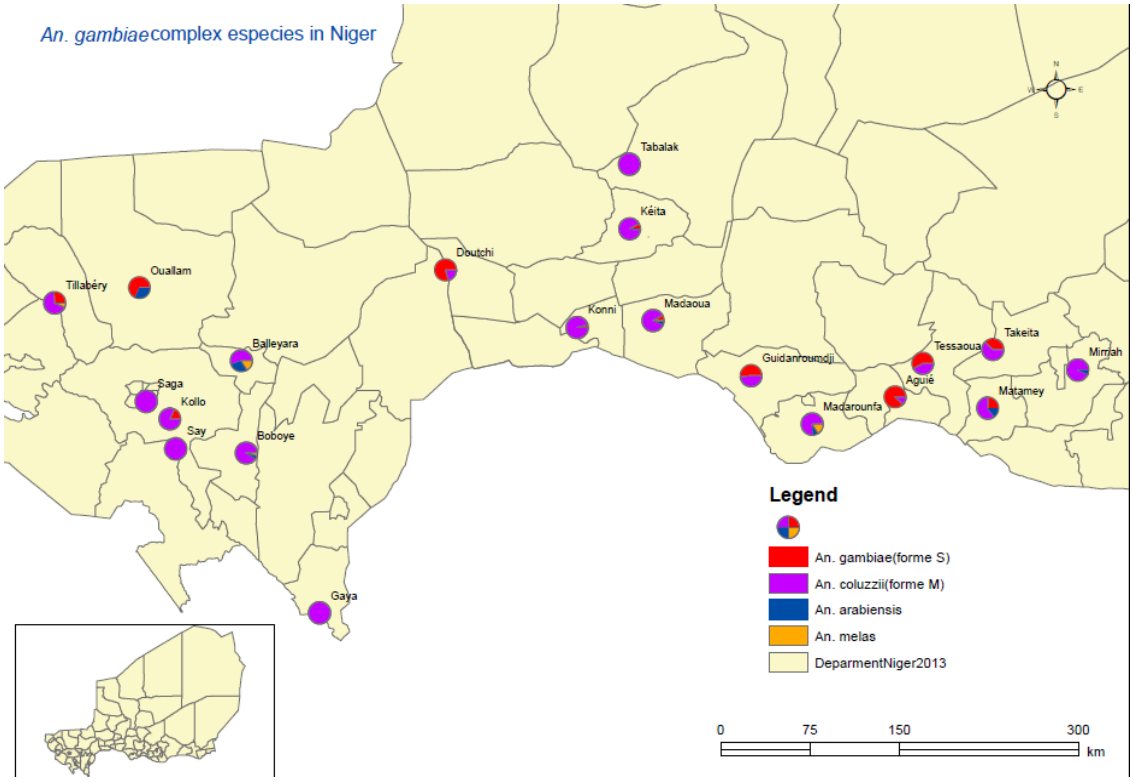


An. gambiae s.l. showed variable biting behavior across the seven districts. The densities of *An. gambiae s.l.* were overall higher outdoors in Ingal (80.0%), Agadez (75.0%), Niamey V (52.7%)

[11] The PMI VectorLink Niger Annual Entomological Report, April 2018 – March 2019 Rockville, MD. The PMI VectorLink Project, Abt Associates Inc.

Zindarou (52.7%) and Balleyara (52.0%) as compared to indoors. On the other hand, *An. gambiae* s.l. was generally endophilic in Gaya (58.7%) and Tessaoua (55.7%)[12].

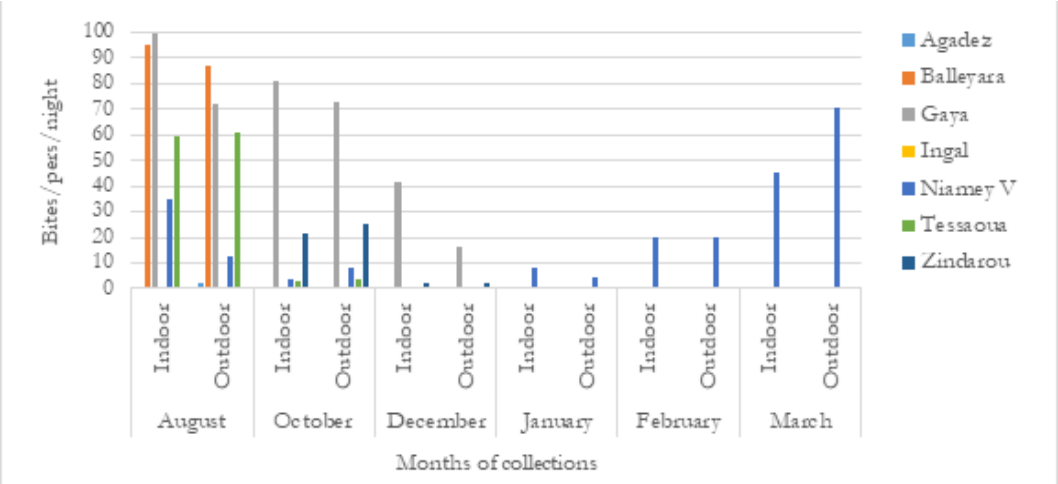
Figure A4. Distribution of Members of the *Anopheles gambiae* Species Complex Based on Data Collected in 2013-2014[13].



Overall, *An. gambiae* s.l. females biting activity was highest between 10:00 pm and 03:00 am, indoors and outdoors across all sites. Furthermore, *An. gambiae* s.l. showed slightly higher outdoor biting tendency than indoor, giving a higher endophagic rate in all the sites except in Niamey V where the average exophagic rate was 52.5% and Tessaoua where both indoor and outdoor were equally 50%. Figure 18 shows the human biting rate (HBR).

[12] The PMI VectorLink Niger Annual Entomological Report, April 2018 – March 2019 Rockville, MD. The PMI VectorLink Project, Abt Associates Inc.
[13] NMSP 2017-2021

Figure A5. *An. gambiae* s.l. Indoor and Outdoor HBR by Site (August 2018 to March 2019) [14]



Parity rates were high in all the sites across collection period, with all the mean parity rates above 50 percent in all sites except Zindarou where the percentage of parous *An. gambiae* s.l. was low during both collection months. The highest mean monthly indoor resting density was in August in all sites, but Niamey V recorded peak densities in February and March as well. Low or no density was found in Agadez, Tessaoua and Ingall between October and February. For any additional information, please refer to the Entomological monitoring report.[11]

Conclusion

PMI has contributed to developing capacity in the country by training staff and supporting entomological monitoring to nine sentinel sites. In addition, PMI is supporting analysis of samples in a local institution whereas prior to PMI, the NMCP shipped the samples to institutions outside the country for analyses and PMI is supporting the renovation the insectary. This technical capacity will allow the country to monitor vector bionomics (species composition, behavior, infections rates) and insecticide susceptibility as these parameters change during the year and from year to year.

Niger's entomological profile is similar to other West African countries with members of the *Anopheles gambiae* complex predominating, having slight preference to feed indoors in the hours near the middle of the night. As coverage with insecticide-based strategies such as LLINs increases, changes in vector species composition, behavior and insecticide susceptibility may change and may warrant changes in the control strategies.

Key Question 2

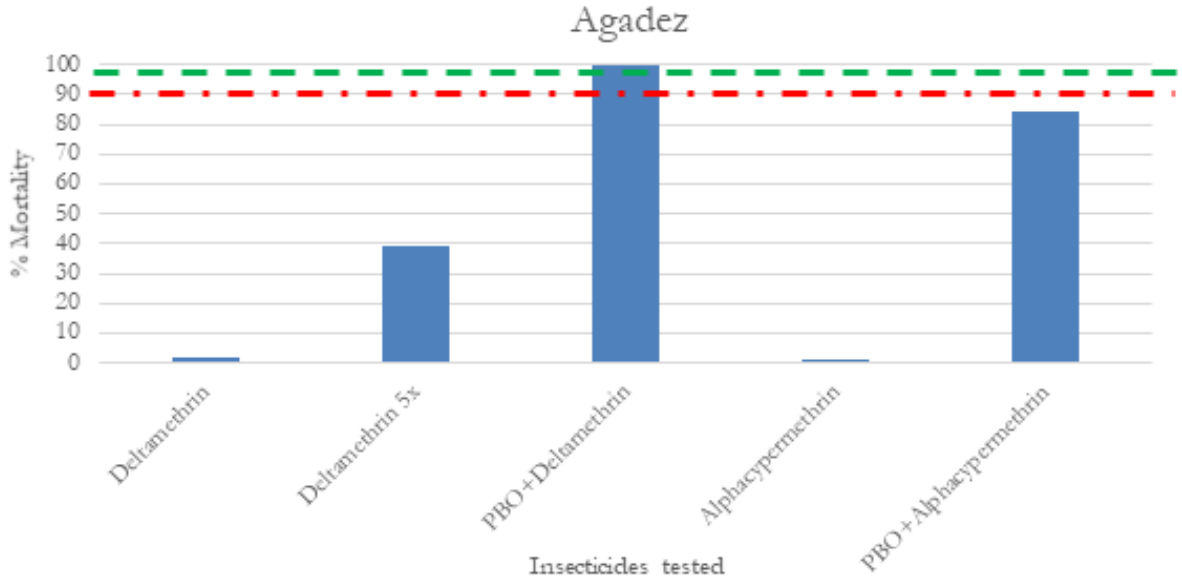
What is the current insecticide resistance profile of the primary malaria vectors?

[14] The PMI VectorLink Niger Annual Entomological Report, April 2018 – March 2019 Rockville, MD. The PMI VectorLink Project, Abt Associates Inc.

Supporting Data

Resistance in *An. gambiae* s.l. was observed to the diagnostic dose of all pyrethroids in all sentinel sites (Figures A6-A14). Pirimiphos-methyl and bendiocarb showed susceptibility in Ingal and Zindarou, but resistance to both insecticides was observed in Niamey V and Tchintabaraden. The remaining sites did not yield sufficient larvae to test Pirimiphos-methyl and bendiocarb. In addition, a high intensity of resistance was detected to deltamethrin, permethrin and alpha-cypermethrin in most of the sites where the full set of tests was completed. The pre-exposure of mosquitoes to PBO before exposure to deltamethrin, permethrin and alpha-cypermethrin yielded significant increased mortality in most of the sites surveyed, indicating that perhaps PBO nets should be considered in the future. Mosquitos from most sentinel sites showed some resistance to chlorfenapyr at the 100 ug/bottle dose, even at 72 hours (Figure A15), but at 200 ug/bottle, in all sites except Gaya, 100% mortality was observed at 72 hours post treatment (Figure A16). The laboratory analyses of the PMI collected samples is ongoing but data from samples collected in 2013-2014 shows that the *kdr* west mutation was already abundant in Niger during that period (Figure A17). In addition, the ace-1 mutation was detected at multiple sites (Figure A18).

Figure A6. Insecticide Susceptibility Status of *An. gambiae* s.l. in Agadez [15]



[15] The PMI VectorLink Niger Annual Entomological Report, April 2018 – March 2019 Rockville, MD. The PMI VectorLink Project, Abt Associates Inc.

Figure A7. Insecticide Susceptibility Status of *An. gambiae* s.l. in Gaya

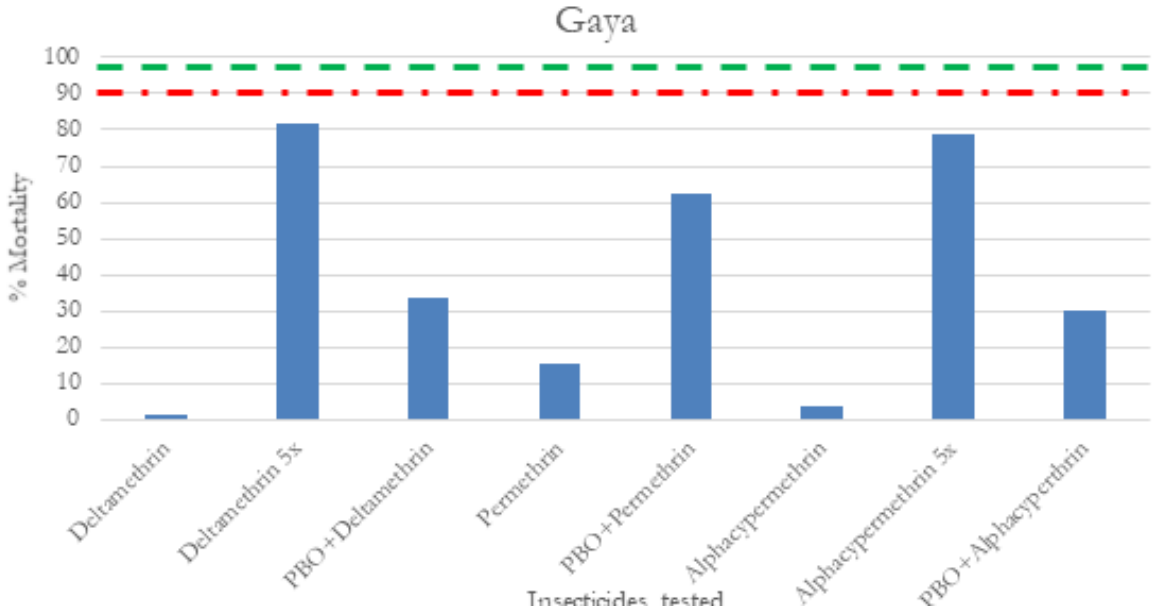


Figure A8. Insecticide Susceptibility Status of *An. gambiae* s.l. in Ingal

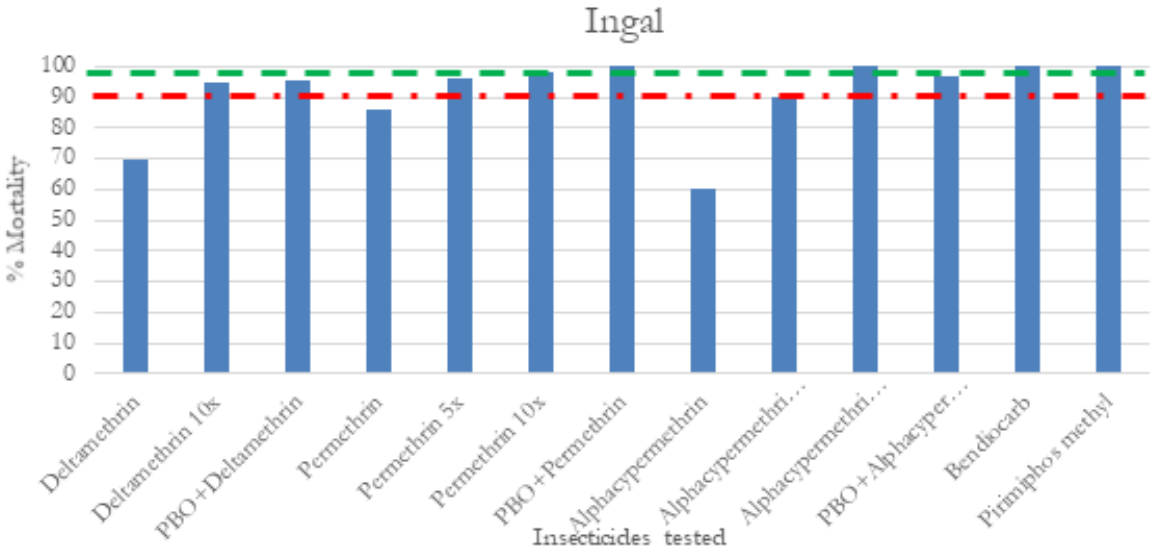


Figure A9. Insecticide Susceptibility Status of *An. gambiae* s.l. in Keita

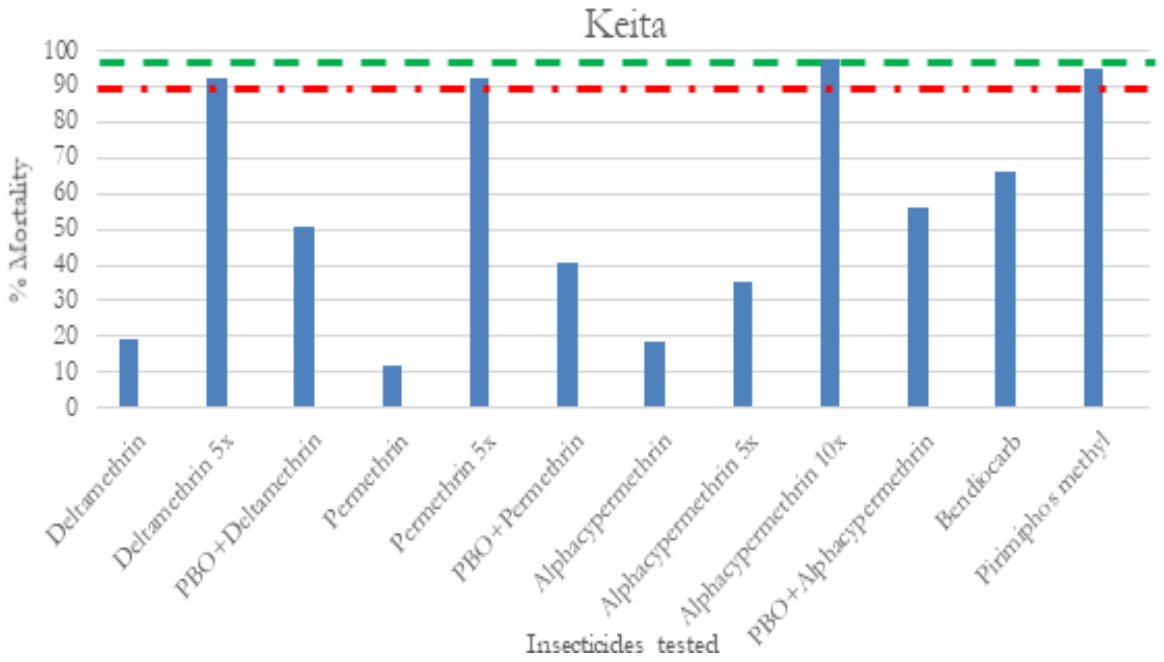


Figure A10. Insecticide Susceptibility Status of *An. gambiae* s.l. in Niamey V

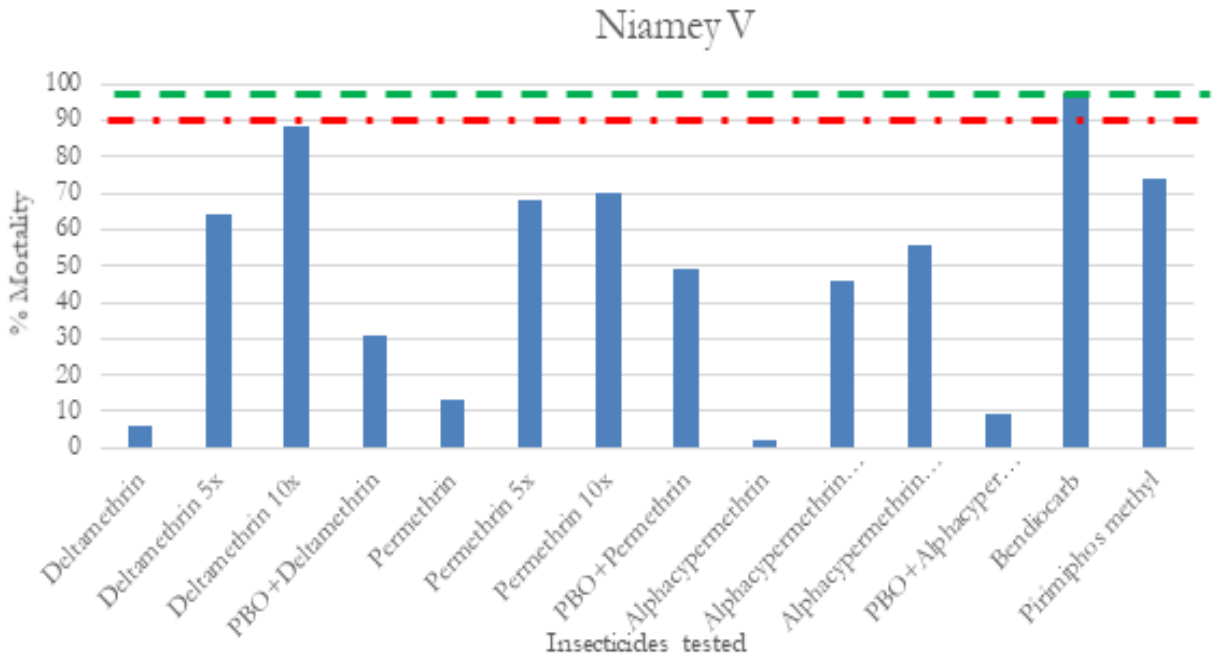


Figure A11. Insecticide Susceptibility Status of *An. gambiae* s.l. in Tchintabaraden

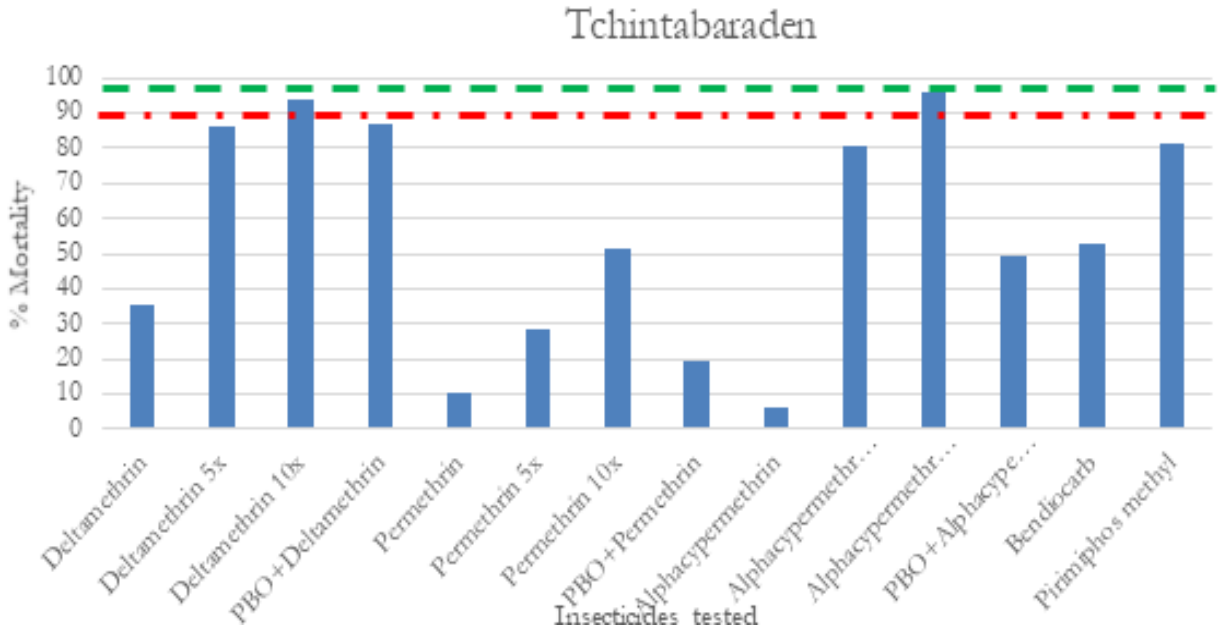


Figure A12. Insecticide Susceptibility Status of *An. gambiae* s.l. in Tessaoua

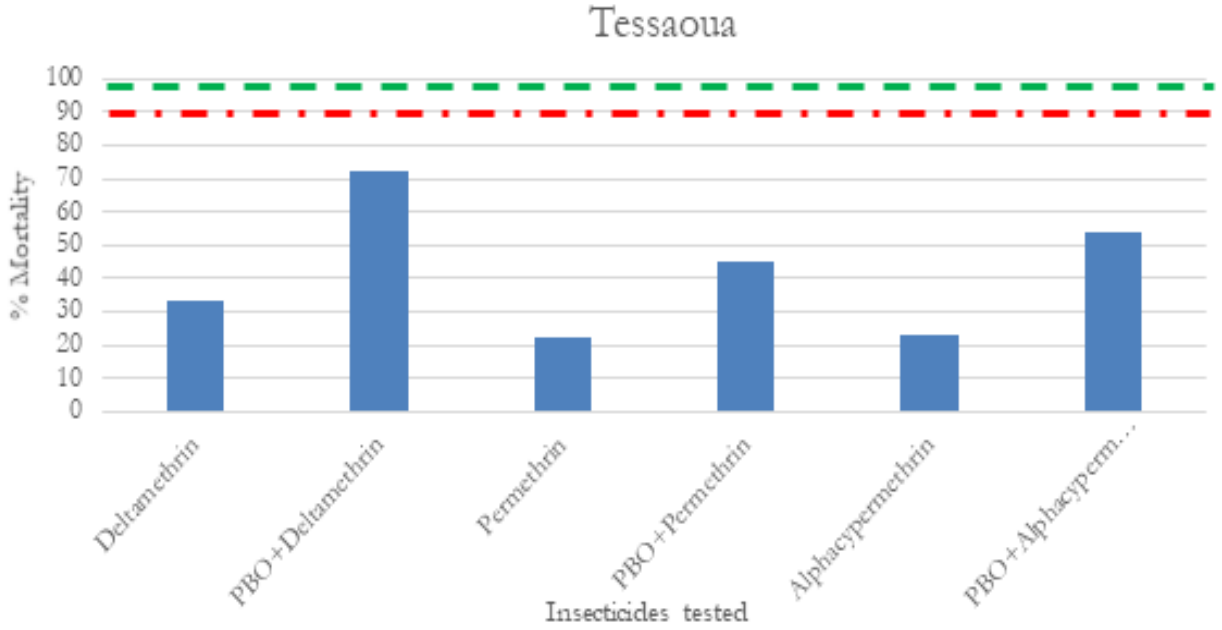


Figure A13. Insecticide Susceptibility Status of *An. gambiae* s.l. in Zindarou/Boboye

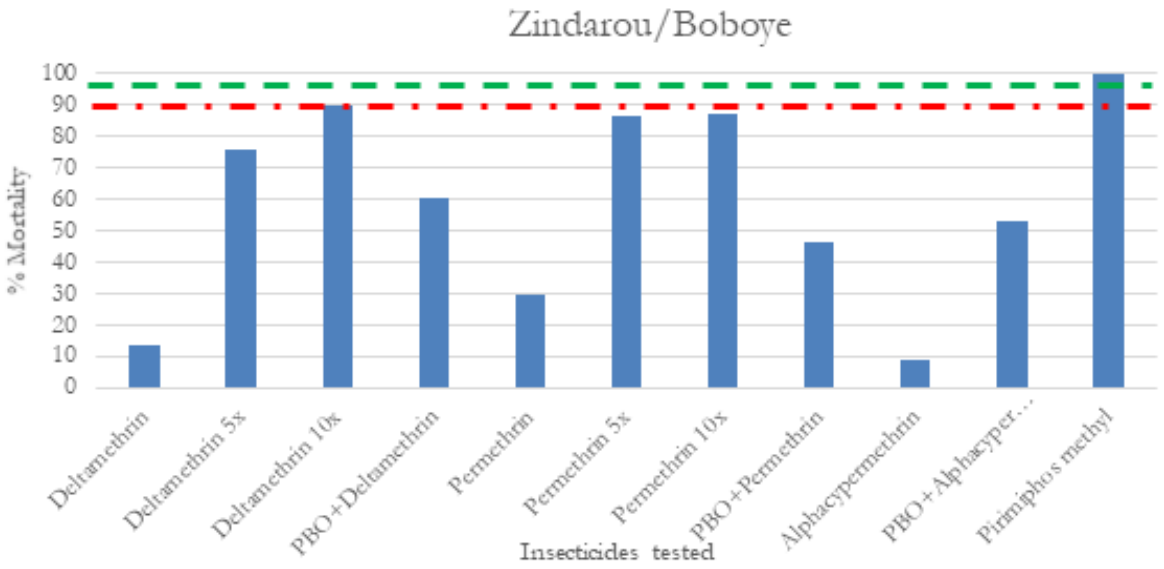


Figure A14. Insecticide Susceptibility Status of *An. gambiae* s.l. in Zinder

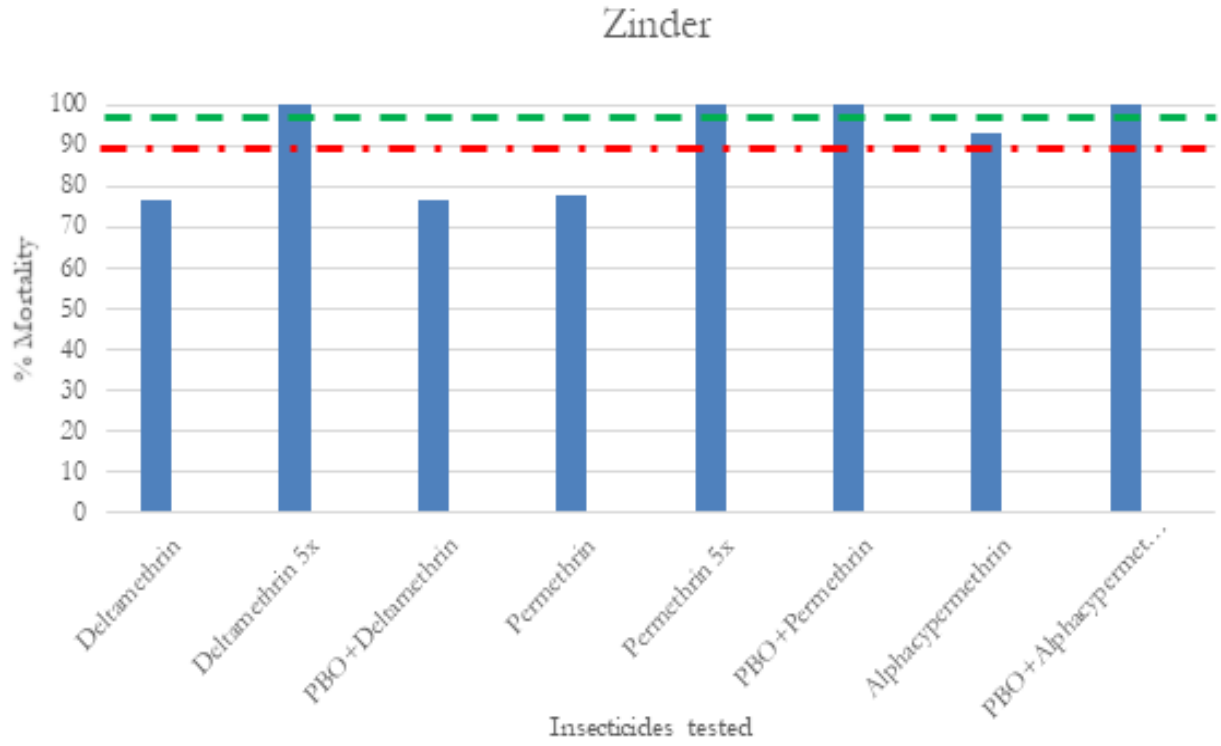


Figure A15. Susceptibility of *An. gambiae* s.l. to Chlorfenapyr 100µg/bottle[16]

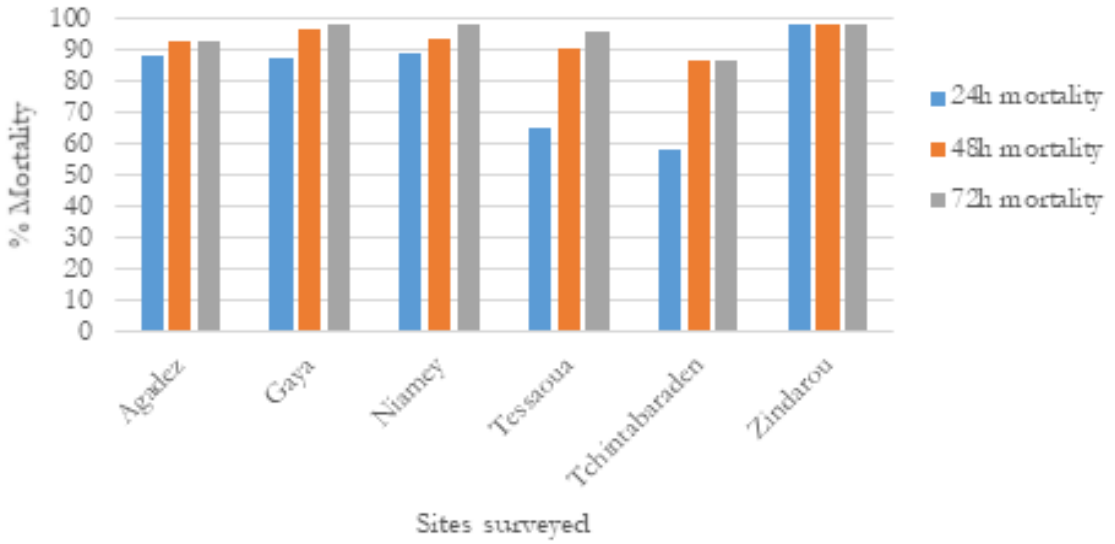
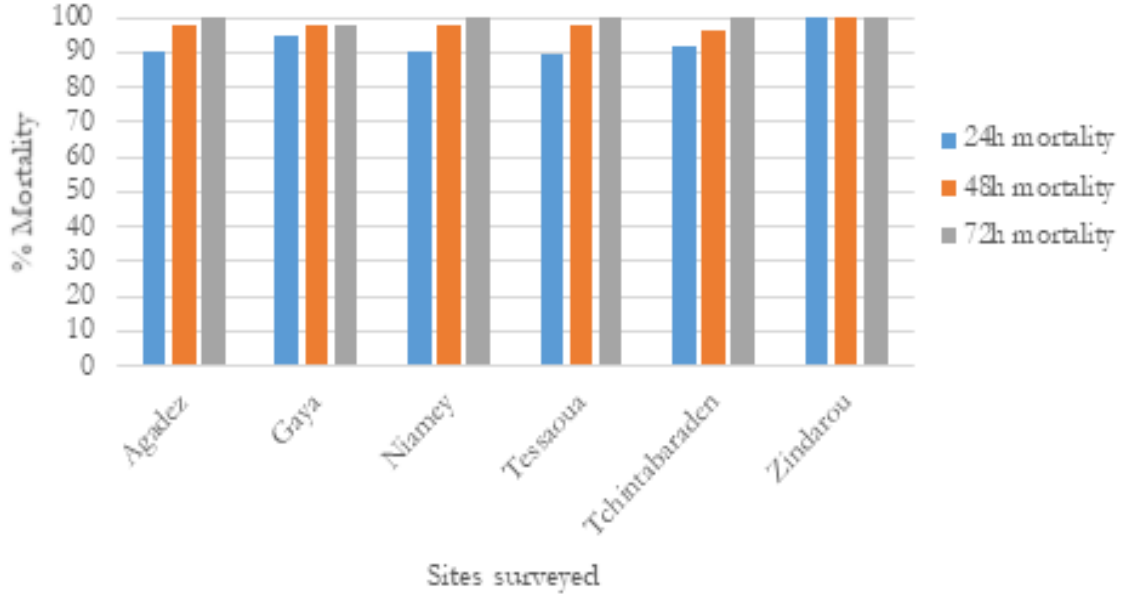


Figure A16. Susceptibility of *An. gambiae* s.l. to chlorfenapyr 200µg/bottle[17]



[16] The PMI VectorLink Niger Annual Entomological Report, April 2018 – March 2019 Rockville, MD. The PMI VectorLink Project, Abt Associates Inc.
[17] The PMI VectorLink Niger Annual Entomological Report, April 2018 – March 2019 Rockville, MD. The PMI VectorLink Project, Abt Associates Inc.

Figure A17. Distribution of the *kdr* West Mutation in Members of the *Anopheles gambiae* Species Complex Based on Data Collected in 2013-2014.[18]

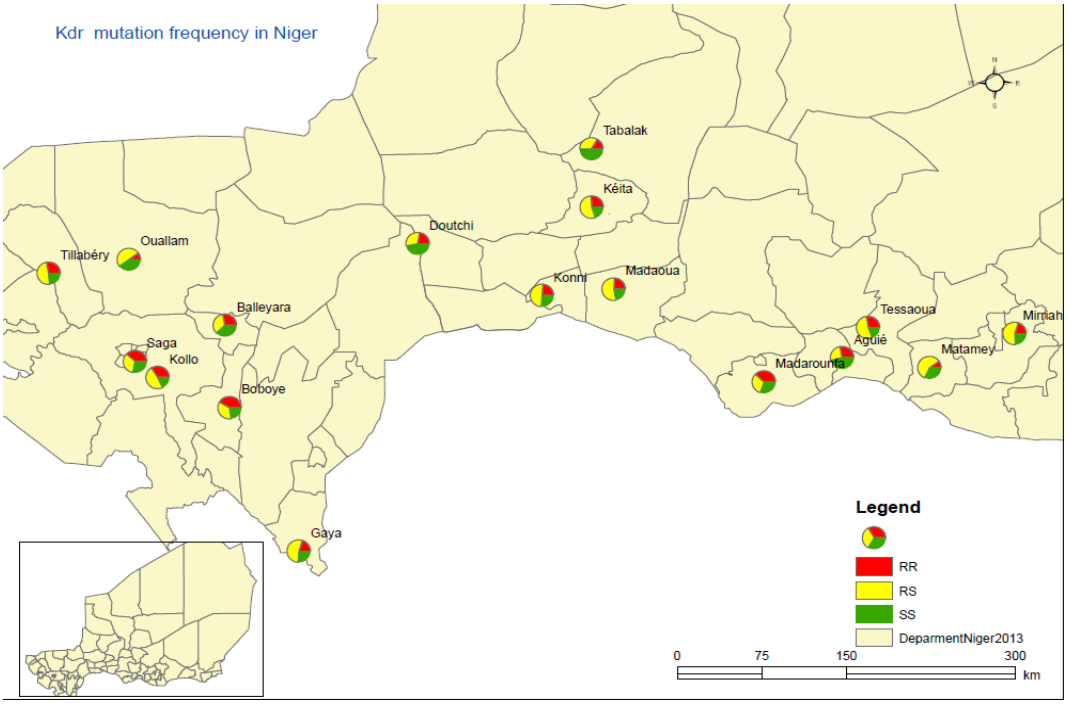
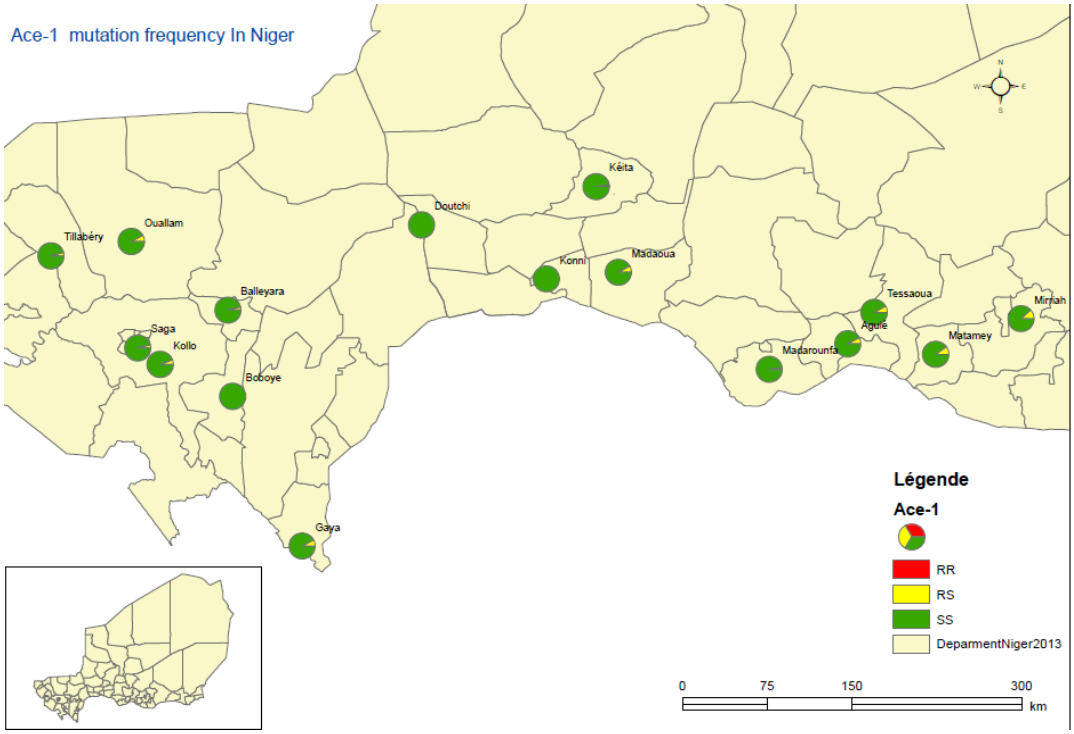


Figure A18. Distribution of the *Ace-1* Mutation in Members of the *Anopheles gambiae* Species Complex Based on Data Collected in 2013-2014.



[18] NMSP 2017-2021

Conclusion

Pyrethroid insecticide resistance is widespread in the country. In most areas, PBO appears to restore some of the susceptibility to some pyrethroids, a fact that suggests that PBO nets may provide better protection. In addition, mosquitoes are susceptible to chlorfenapyr and thus the next generation of nets that employs this compound should be considered. Continued monitoring of the insecticide resistance status will supply data to the NMCP and PMI for decision making related to best insecticide-based strategies to employ to better prevent transmission and mitigate insecticide resistance.

Key Question 3

What are the in-country considerations that impact your funding allocation in this category?

Supporting Data

The PMI funding allocations are impacted by the fact that PMI in agreement with NMCP, WHO and Global Fund, is the only donor that support and provide technical assistance for entomological data collection. The current budget is based on the current entomological plan which will be updated when more data are available from the updated risk mapping - an activity supported in 2019 by Global Fund - and the Malaria Indicator Survey, planned for August 2020 with support from PMI and Global Fund. We hope that these data will lead to less sentinel sites.

The funding also takes into account the relatively weak capacity in country for entomological monitoring. To ensure sustainable capacity, we must invest in training of the staff.

Conclusion

Because PMI is the only partner of NMCP to assist with entomological monitoring, it is crucial that we continue this support.

1.B. INSECTICIDE-TREATED NETS (LLINs)

PMI Goal
Achieve high LLIN coverage and usage of effective nets in endemic PMI-supported areas (in the context of the current insecticide resistance); and maintain high coverage and use with consistent LLIN distribution (via campaigns and/or continuous channels in a combination that is most effective given country context). Determine the geographic distributions, bionomics, and insecticide resistance profiles of the main malaria vectors in the country to inform vector control decision-making

Are you proposing to increase, decrease, or maintain funding allocation levels for LLIN distribution and SBC activities? Why? What data did you use to arrive at that conclusion?
The funding was slightly decreased to adapt the PMI supported strategy to the one proposed by NMCP. The NMCP would like to focus activities on strengthening existing LLIN distribution through routine channels, this means during ANC and vaccination sessions. The focus will shift to an

integrated approach with the DSME and DI. Instead of stand-alone activities such as LLIN training sessions at the health facility on regional and district level, we will work with the DSME to ensure that the ANC guidelines and training curricula integrate the LLIN distribution directives from the NMCP to ensure that pregnant women receive a LLIN (and IPTp) during their ANC consultations. We will also support NMCP to work together with the EPI program to ensure that the vaccination guidelines include clear directives that each child coming for measles vaccination at 9 months receives a LLIN. We will also work with DSME and EPI that the tools such as ANC booklet and vaccination card include LLIN. This approach will demand less funding for a bigger impact.

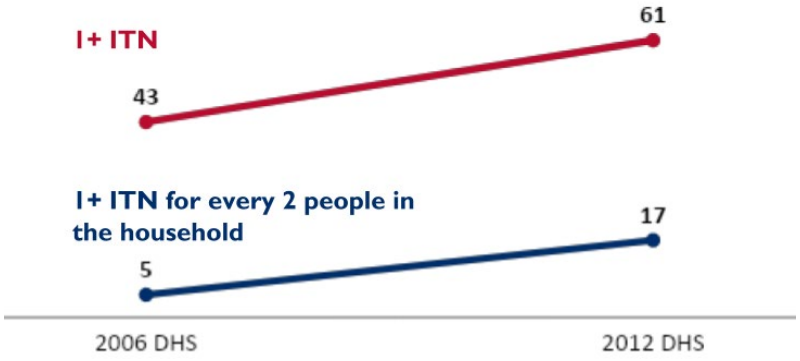
Please see Table 2 for a detailed list of proposed activities with FY 2020 funding.

Key Question 1

How has net ownership evolved since the start of PMI in the country? Are households fully covered?

Supporting Data

Figure A19. Trends in ITN Ownership, *Percent of Households*



Conclusions

There are limited new data available on LLIN coverage since the start of PMI, but we are not expecting that the coverage increased significantly during the first year of PMI because most of the LLIN activity was focused on the elaboration of tools. At this point, the households are not fully covered. The 2012 DHS found that 61 percent of households reported having at least one LLIN. A survey supported by PMI in the district of Gazaoua in the Maradi region and the district of Madaoua in the Tahoua region, indicated the presence of 1337 nets in 240 visited houses.

A 2018 assessment[19] of continuous distribution in Niger identified several weaknesses that created inefficiencies and thus contributed to poor population access to nets. These include:

[19] The PMI VectorLink Project. September 2018. *Process Evaluation of Continuous LLIN Distribution - Niger.* Washington, DC. The PMI VectorLink Project, Population Services International (PSI).

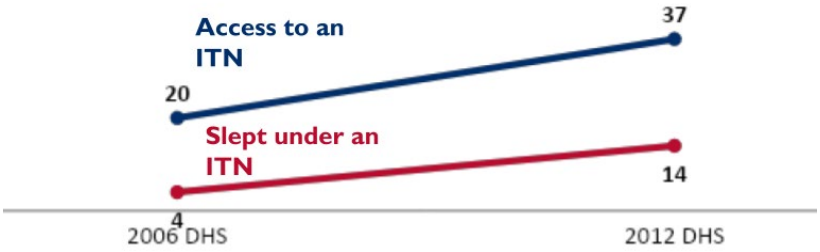
- Poor coordination among MOH and partners at the central and regional level. This includes lack of LLIN indicators included in rapid results indicators and lack of financed-micro plans.
- Lack of written distribution guidelines for health staff
- Stockouts caused by poor quantification and challenges in transporting nets from the district level to the health centers. In 2017, most health centers were out of LLIN stock, but health center directors were unaware of specific reasons for the stockouts
- Staffing issues at the health center level including lack of training of net distribution, poor mobility of trained staff, overwhelming workload, and lack of supervision leads
- Poor implication of local authorities in the distribution activities
- Limited targeted population - routine distribution system only reaches pregnant women and children < 1 year
- Lack of messaging to inform populations of availability of nets at distribution sites and how to use the nets

Key Question 2

What proportion of the population has access to an LLIN? In contrast, what proportion of the population reports using an LLIN? What is the ratio between access and use? Does it vary geographically?

Supporting Data

Figure A20. Trends in ITN Access and Use, *Percent of Household Populations with Access to an ITN and Who Slept Under and ITN the Night Before the Survey*



Conclusion

The 2012 DHS found that while 61 percent of households reported having at least one LLIN, only 37 percent of people surveyed could have slept under an LLIN, if each LLIN was used by no more than two persons. Reported net use was low, even in households with at least one net. Among the population of households surveyed, only 14 percent had slept under an LLIN, and only 21 percent of households with at least one LLIN had used the net. A secondary analysis of the 2012 DHS demonstrated that the ratio of LLIN use to access (measuring population-level use

in relation to population-level access to an LLIN) is also very low—with variations from 0.23 in Tahoua to 0.66 in Niamey. With the exception of Niamey, this ratio is well below the 0.60 threshold for a "poor" level rating, indicating that further exploration of non-use of available nets is needed. A survey supported by PMI in the district of Gazaoua in the Maradi[20] region and the district of Madaoua in the Tahoua region, indicated that 456 (34.1 percent) of the 1337 nets in 240 visited houses were hanging above a sleeping space; 337 (25.2 percent) were stored and the others were not hanging or stored.

Key Question 3

In areas where LLIN access is high but use is low, what is known about the key barriers and facilitators to use?

Supporting Data

Although we lack the data, we do not think that the access to LLIN is high in any area of Niger. An evaluation conducted in 2018 by PMI15 and several meetings with NMCP, several barriers explaining the low utilization rate for LLIN is known. There are no data that describe ITN use during the high transmission season, but they will be collected during the MIS planned for August 2020.

Figure A21. Key Barriers and Facilitators to LLIN Access and Use

Facilitator	Type of Factor	Data Source	Evidence
Routine distribution during prenatal consultation and EPI	Environmental	• PMI/VectorLink assessment (2018)[21] • 2018 Evaluation of maternal and childcare in Niger[22]	53-55% of pregnant women received a mosquito net at their first ANC visit (or already had one)
Barrier	**Type of Factor**	**Data Source**	**Evidence**
Poor access to nets	Environmental	• Meeting PMI and PNLP dec.2018 • PMI/VectorLink assessment (2018)	• Pregnant mothers and children do not receive routine LLINs at the health centers due to stockouts or lack of staff knowledge of the guidelines. • Community members do not know that free campaign or routine nets are available due to poor communication. See Question 5 for details. • Only 55% of pregnant women received a mosquito net at their first ANC visits.

[20] The PMI VectorLink Project. September 2018. *Process Evaluation of Continuous LLIN Distribution - Niger.* Washington, DC. The PMI VectorLink Project, Population Services International (PSI)
[21] The PMI VectorLink Project. September 2018. *Process Evaluation of Continuous LLIN Distribution - Niger.* Washington, DC. The PMI VectorLink Project, Population Services International (PSI)
[22] Centre for Maternal and Newborn Health. October 2018. *Evaluation national de la qualité des soins maternels, néonatals et infantiles au Niger: Résultats de l'enquête de base*. London School of Tropical Medicine.

Lack of malaria knowledge	Internal	• Meeting PMI and PNLP dec.2018 • PMI/VectorLink assessment (2018)[23]	The population don't understand that infected mosquitoes spread malaria, so the utility for the use of nets is not appreciated. Some people think nets reduce nuisance bites and buzzing
Negative attitude toward nets	Internal	• Meeting PMI and PNLP dec.2018 • PMI/VectorLink assessment (2018)[24]	• Poor translation: In the local language, the word for "bednet" is "house for mosquitoes." • Discomfort: People find that sleeping under a net is unpleasant due to lack of air. • Perceived ineffectiveness: People find mosquitoes inside their nets and think this is because the nets don't work and not because they did not use the net properly.

Conclusion

The low LLIN use is due to numerous factors, including lack of access - some of which PMI started to address through LLIN procurement and commodity management and through developing LLIN guidelines that indicate who has to do what, information that need to be collected etc. SBC activities will focus on net use in order to encourage those with access to use their net correctly.

Key Question 4

What percent of pregnant women and children under 5 report sleeping under an LLIN?

Supporting Data

The 2012 DHS found that only 20 percent of children under 5 years of age and 20 percent of pregnant women reported sleeping under an LLIN the previous night. There are no more recent data concerning the use of LLIN by pregnant women and children under 5, but we have no reason to think that the situation is significantly improved. The impact of PMI supported activities will start to be visible at the end of 2020 when more PMI supported activities will have been implemented and we will also have more recent data thanks to the MIS (August 2020).

Conclusion

The impact of PMI supported activities will start to be visible at the end of 2020 when more PMI supported activities will have been implemented and we will also have more recent data thanks to the malaria indicator survey (MIS) planned for August 2020.

[23] The PMI VectorLink Project. September 2018. *Process Evaluation of Continuous LLIN Distribution - Niger.* Washington, DC. The PMI VectorLink Project, Population Services International (PSI)
[24] The PMI VectorLink Project. September 2018. *Process Evaluation of Continuous LLIN Distribution - Niger.* Washington, DC. The PMI VectorLink Project, Population Services International (PSI)

Key Question 5

What channels are used to distribute LLINs?

Supporting Data

Figure A22. LLIN Distribution Channels

	2015	2016	2017	2018	2019	2020	2021
EPI[1]			356,791	295,173	x	x	x
ANC[1]			624,632	636,846	x	x	x
Mass campaigns	3,653,339	629,137	3,386,343	3,256,552	734,669	x	x

[1.] Quarterly report, NMCP

Conclusion

PMI is supporting the NMCP approach to support and strengthen the existing routine distribution channels, before exploring new channels. PMI is also in discussion with partners to see if it would be possible to replace the rolling LLIN mass distribution campaign into a distribution for all at risk districts each 3 years.

Key Question 6

What is the estimated need for LLINs over the next three calendar years? What volume of LLINs are available from partners and the public sector for the next three calendar years?

Supporting Data

Figure A23. Gap Analysis of LLINs

Calendar Year	2019	2020	2021
Total Targeted Population[1]	22,314,742	23,196,000	24,112,752
Continuous Distribution Needs			
Channel #1: ANC[2]	965,242	1,000,976	1,038,988
Channel #2: EPI[2]	801,151	830,810	862,360
Estimated total need for continuous channels[3]	1,766,393	1,831,786	1,901,348
Mass Campaign Distribution Needs			
2019/2020/2021 mass distribution campaign(s)	734,669	8,005,691	4,482,172
Estimated total need for campaigns [4]	734,669	8,005,691	4,482,172
Total ITN Need: Routine and Campaign	**2,501,062**	**9,837,477**	**6,383,520**
Partner Contributions[5]			
LLINs carried over from previous year[6]	1,259,610	1,164,200	1,470,659
LLINs from MOH	0	0	0
LLINs from Global Fund	1,222,495	9,768,698	TBD
LLINs from other donors	0	0	0

Calendar Year	2019	2020	2021
LLINs planned with PMI funding	0	375,238	225,600
Total ITNs Available	**2,482,105**	**11,308,136**	**1,696,259**
Total ITN Surplus (Gap)	**-18,957**	**1,470,659**	**-4,687,261**

1. Source: INS 2012 (demographic data)
2. Targeted population for continuous LLIN needs distribution were based on the following assumptions
   - ANC: Projected number of pregnant women is 4.3% of the general population
   - EPI: Newborn & under 1 year of age is estimated to be the same as the total number of pregnant women
3. Forecasting assumptions for continuous distribution
   - ANC: 100% of pregnant women will receive 1 LLIN during their first ANC visit
   - EPI: LLIN distributed to children during their measles immunization visit. According to health statistics 83% of children received measles immunization. This rate is used as assumption for LLIN needs
4. Forecasting assumptions for campaign distribution: Using WHO recommended forecasting method 1 LLIN for 1.8 persons. The 2020 mass campaign will cover all the districts of 3 regions (Dosso, Tillaberi and Diffa) and meso endemic districts of 3 regions (Maradi, Tahoua, Zinder). These meso-endemic districts were not covered during the 2018 campaign because of funding issues. Global Fund will acquire more LLINs as it will support mass campaign in selected regions
5. Current Global Fund grant ends in 2020. New grant is expected to start in 2021 and Global Fund contribution for that year will be known by October 2020. In addition to the carry-over from 2020, PMI will procure some quantities to ensure that at least the needs for the first semester of 2021 is covered.
6. Carry over is expected from 2019 stock as available stock of LLIN were not fully distributed to health facilities for routine distribution (ANC, EPI). Large part of the carry over stock are from PMI deliveries put in quarantine early this year for quality control and release in August 2019. These LLIN will be distributed to facilities by January 2020.

Conclusion

The country will have enough LLIN for 2020. For 2021, the Global Fund will purchase nets but because the convention is not finalized yet, the exact amount is not yet known.

Key Question 7

What is the current status of durability monitoring?

Supporting Data

Since 2018, PMI has been supporting LLIN durability monitoring in two districts (Figure A24) where Olyset nets were distributed during the June 2018 NMCP mass campaign supported by the Global Fund. Data were collected in October 2018 and July 2019. Results of the three-year study will provide the NMCP, PMI, and partners with valuable information regarding the performance and average useful life of the Olyset brand LLIN, distributed during the June 2018 campaign.

Figure A24. Data Collection Points for LLIN Durability Monitoring, 2018-2019

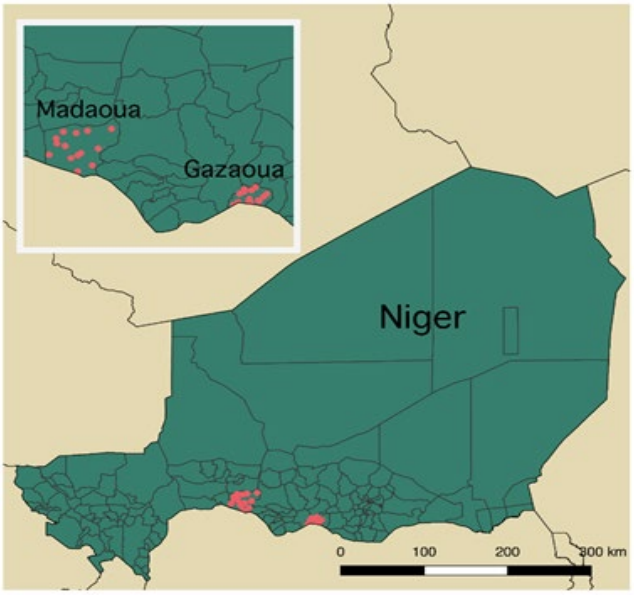


Figure A25. LLIN Durability Monitoring Campaigns

Campaign Date	Sites	Brands	Baseline	12-month	24-month	36-month
June 2018	Gazaoua Maradi region	Olyset	x	x		
June 2018	Madaoua Tahoua region	Olyset	x	x		

Figure A26. Key results of Durability Monitoring

Site	Survey and time since distribution (months)	Attrition wear and tear (%)	Remaining nets in serviceable condition (%)	Remaining nets hanging over sleeping space (%)		Optimal insecticidal effectiveness in bio-assay (%)
				Campaign	Other	
Gazaoua Maradi region	12m	16.7	78.0	40.4	27.1	N/A
	24m	N/A	N/A	N/A	N/A	N/A
	36m	N/A	N/A	N/A	N/A	N/A

Conclusion

The durability monitoring is ongoing - conclusions will be presented at the end of the monitoring activity.

Key Question 8

What are the in-country considerations that impact your funding allocation in this category?

Supporting Data

A deterioration in the security situation in the country could increase the costs of implementing certain activities, making it difficult to achieve the objectives with the current budget.

The country is still waiting for the budget allocation of the Global Fund (2021-2023) and PMI funding allocation will be impacted accordingly.

Conclusion

In agreement with the Global Fund, PMI will support only a small quantity of LLIN for routine distribution due to the limited PMI funding available and the assurance that Global Fund will cover all the country needs. PMI will focus on providing technical assistance to increase LLIN ownership and on durability testing.

1.C. INDOOR RESIDUAL SPRAYING (IRS)

Key Goal

Ensure high spray coverage, with an appropriate insecticide, in targeted endemic PMI-supported areas

Do you propose expanding, contracting, or changing any IRS activities? If so, why and what data did you use to arrive at that conclusion?

Indoor residual spraying (IRS) is one of the interventions in the NMCP Plan 2017-2021. However, financial support for the intervention is not available at this time and to date, no indoor residual spraying has occurred in the country.

The PMI strategy is to prioritize existing funds for insecticide-based malaria vector control for the distribution of LLINs rather than focal IRS. Since 2018, a comprehensive package of entomology monitoring and evaluation activities are supported in order to establish baseline epidemiologic (routine health facility data) as well as entomologic indicators, described previously, in anticipation of expanded insecticide-based vector control activities in the future.

The existence of pyrethroid resistance in all malaria vector populations, tested to date, indicates a risk to the future impact of the current LLIN intervention, which is based on the same insecticides. While IRS, which offers the possibility of managing this risk through the use of non-pyrethroid insecticides, cannot be supported at this time, PMI and Global Fund will be exploring with the NMCP the possibility of procuring “new” LLINs, which incorporate non-pyrethroid “insecticidal” agents, in order to begin to address the problem of resistance.

Please see Table 2 for a detailed list of proposed activities with FY 2020 funding.

Key Question 1

What are the in-country considerations that impact your funding allocation in this category?

Supporting Data

N/A

Conclusion

Due to budget constraints and the epidemiological status of the country, this activity is currently not supported by PMI.

2. HUMAN HEALTH

2.A CASE MANAGEMENT in health facilities and communities

NMCP objective
The NMCP's case management objectives as outlined in the NMSP • At least 90 percent of suspected cases of malaria have undergone a test (RDT or microscopy) • At least 90 percent of confirmed malaria cases in health facilities have received adequate antimalarial treatment in accordance with national guidelines • At least 90 percent of confirmed severe malaria cases in health facilities have received adequate antimalarial treatment in accordance with national guidelines • At least 90 percent of simple malaria cases confirmed by community relays have received correct antimalarial treatment in accordance with national guidelines
NMCP approach
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 RDT or microscopy - followed by treatment with an Artemisinin-based combination therapy (ACT). Microscopy is performed in district hospitals and in the private sector, while RDTs are used in health centers and at the community level. In 2018, the NMCP reported 3,338,211 malaria cases and 3,036,699 confirmed malaria cases (68 percent of those tested)[25]. Of the confirmed cases, 96 percent were confirmed by RDT and 54 percent were in children under five years of age. There were 4,035 malaria deaths with 71 percent occurring in children under 5 years of age. The results from the SARA survey in 2019 showed the availability of malaria diagnostics in public and private health facilities stayed constant compared with the 2015 survey results: 91 percent of the health facilities offering rapid diagnostic tests (88 percent in 2015) and 24 percent microscopy (20 percent in 2015). Sixty one percent of the facilities have a health worker trained in malaria diagnostics and treatment (52 percent in 2015). The EUV survey supported by PSM in 2019 indicated that 82 percent of malaria patients were diagnosed by either RDT (56 percent), microscopy (19 percent), or both (7 percent). The MSP outlines the quality assurance system for diagnostic testing which aims to build a strong laboratory network by building the capacity of laboratory technicians through a yearly 4-day training, ensuring the availability of equipment and consumables, supervision of technicians and

[25] Quarterly report PNLP, 2018

quality control of slides and RDTs. At present, neither supervision nor quality control of slides or RDTs happens at a regular basis.

In an effort to increase access to care for children under 5 years of age, the MOH promotes community health activities through nationwide expansion of integrated community case management (iCCM) by community health workers (CHW) known as *Relais Communautaires* in villages further than five kilometers from a health facility. In July 2016, a new community health policy[26] was adopted which details its implementation and management. The iCCM program include the diagnosis with RDT and treatment with ACTs of malaria as well as diagnosis and treatment of pneumonia and diarrhea, in addition to malnutrition screening with referral for all illnesses. An estimated 16,000 CHW are needed to assure a national iCCM coverage. The program is being scaled-up progressively throughout the hyper and meso endemic malaria zones. CHW participate in a 10-day training using national guidelines adopted from UNICEF training materials and receive a kit containing the necessary supplies (including ACTs and RDTs) provided by PMI and UNICEF. The MOH has determined that CHWs should receive an incentive of 10,000 CFA ($17 USD) a month, of which half is provided for by donors. PMI will support the scale-up of iCCM, and although PMI cannot support the payment of incentives, PMI is working with UNICEF and the Global Fund to find a solution to pay the CHWs in the PMI regions.

Niger's Monitoring and Evaluation Plan for Malaria Control, 2017-2021 (*Plan de Suivi et Évaluation de Lutte Contre le Paludisme)* describes the supervision structure. The plan is for the NMCP, with the participation of technical and financial partners, to conduct field supervision visits at the central level down to the community level, in order to evaluate the implementation of malaria activities. These supervision visits are intended to provide information on the performance of healthcare providers by observing them in the field, and to verify the quality of the data collected. However, these supervisions are not always informative or regular.

The MOH, with funding and technical support from WHO and Global Fund, conducts therapeutic efficacy studies (TES), which are to take place every two years in line with WHO guidance. The last TES was completed in November 2017. The next TES is planned for 2020.

Figure A27. Status of Case Management National Guidelines for Diagnosis and Treatment of Malaria, December 2017

	Diagnosis and Treatment Guidelines
What is the first-line treatment for uncomplicated P. falciparum malaria?	• Artemether-lumefantrine (AL) (preferred treatment) • Artesunate-amodiaquine (AS/AQ) • Pyronaridine-artesunate or Dihydroartemisinin-piperaquine
What is the second-line treatment for uncomplicated P. falciparum malaria?	N/A
What is the first-line treatment for severe malaria?	Injectable artesunate or artemether

[26] *Directives Nationales de Mise en Oeuvre des Interventions Intégrées à Assise Communautaire en Matière de Santé*

What is the first-line treatment for uncomplicated P. falciparum malaria in the first trimester?	Oral quinine + clindamycin (if available)
What is the first-line treatment for uncomplicated P. falciparum malaria in the second and third trimesters?	• ACTs • Oral quinine (if ACT not available).
What is the first-line treatment for severe malaria in pregnancy?	Injectable artesunate for all trimesters
Is pre-referral treatment of severe disease recommended at peripheral health facilities? If so, with what drug(s)?	• Yes. • Rectal or parenteral artesunate or IM quinine at the facility level
Is pre-referral treatment of severe disease recommended for community health workers? If so, with what drug(s)?	• Yes • Rectal artesunate
If pre-referral rectal artesunate is recommended for what age group?	Rectal artesunate recommended for children under 5 years of age
SMC treatment	Amodiaquine and Sulfadoxine-pyrimethamine (AQ+SP)

PMI objective, in support of NMCP

PMI contributes to malaria case management through numerous interventions which aims to improve the quality of diagnosis and treatment. PMI, in collaboration with the Global Fund, covers the RDT and medication needs throughout the country by contributing to the common basket. PMI supported the updating of the laboratory training manual and provided lab technician training to the 2 PMI focus regions with FY2018 and FY2019 funds. PMI will focus mainly on the correct use of RDTs by healthcare workers and community health workers with FY 2020 funds.

PMI will also support the refresher training of health staff and supervisors, and provide job aids in the 2 PMI target regions, in addition to support supervision to hospitals and CSI and assist the districts in organizing 1-week quarterly CSI service delivery coordination meeting as well as support the 1-week bi-annual district service delivery coordination meetings at regional level. PMI also supports the implementation of iCCM in 9 districts through training, refresher training, supervision, purchasing of CHW kits, and support SBC activities. Other activities include training for private sector and adapting training materials for medical and nursing schools to ensure NMCP guidelines are followed. To achieve all the objectives, PMI will continue to provide technical assistance at central level to NMCP and DSME (e.g., revision of training manuals, supervision guide).

PMI-supported recent progress (past ~12-18 months)

- Strengthen MIP policy at the central level: review of national directives and guidelines for the management of malaria during pregnancy.
- Strengthen integrated malaria case management and MIP training and supervision at health facilities through training of:

- More than 44 trainers from national and regional level on adult learning methods, case management and MIP
- 234 health staff from regional and district hospitals and CSI on case management
- 82 lab technicians on malaria diagnosis
- More than 20 laboratory supervisors and technicians from national and district level on supportive supervision
- 20 national trainers on iCCM approaches

- Strengthen access to malaria diagnosis and treatment for children under-5 through supporting the implementation of iCCM in 2 districts (Dioundou and Konni) through training of
  - 77 CHWs supervisors on iCCM and supportive supervision
  - 149 CHWs on community case management of malaria, diarrhea and pneumonia and on malnutrition screening

Challenges:

- Unexpected increase of per diem in the middle of the year by the GoN, MOH and Un agencies followed by a lack of coordination among partner (UN agencies, USAID, NGO) to agree on a harmonized per diem grid
- The lack of coordination and the multitude of activities makes it challenging to plan and implement training programs

PMI-supported planned activities (next ~12-18 months, supported by currently available funds)

- Disseminate case management guidelines to hospitals, districts, CSI health workers
- Strengthen integrated malaria case management through supporting supervision in health facilities in the two PMI target regions through the rolling out of Health Network Quality Improvement System
- Strengthen the use of data for action at the facility and district levels through support of one-week quarterly CSI service delivery coordination meeting at district level and one-week bi-annual district service delivery coordination meetings at regional level in PMI focus regions
- Expand the implementation from iCCM to seven districts
- Provide capacity building and technical assistance to the NMCP
- Develop standardized messages for SBC on malaria case management and implement the SBC strategy in the 2 PMI focus regions

PMI Goal

Support the NMCP to improve access to and utilization of timely, quality, and well-documented malaria testing and treatment by providing facility- and community-based health workers with training, supervision, and malaria commodities to be able to provide high quality, effective care.

Do you propose expanding, contracting, or changing any case management activities? If so, why and what data did you use to arrive at that conclusion?

We propose to keep the current case management activities and funding allocation because there is no real change in PMI activities. PMI will shift the focus to RDT training and supervision as the majority of health facilities rely on RDTs for diagnostics and this will replace support to diagnose through microscopy which PMI provided in the first two years of implementation.

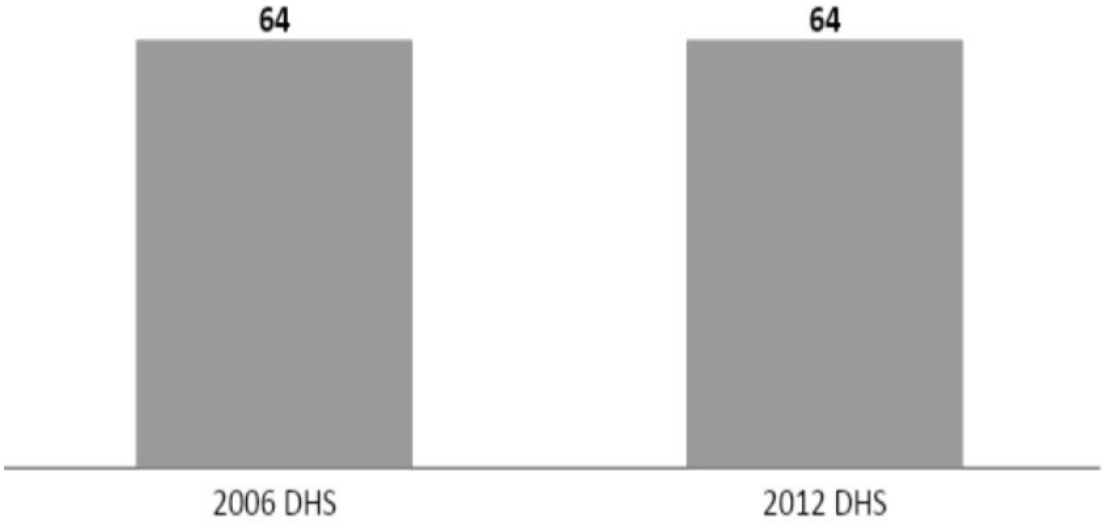
Please see Table 2 for a detailed list of proposed activities with FY 2020 funding.

Key Question 1

What is the status of care-seeking?

Supporting Data

Figure A28. Trends in Care-Seeking for Fever, *Among Children under 5 with Fever in the 2 Weeks Before the Survey for Whom Advice or Treatment Was Sought*



Note: This indicator has been recalculated according to the newest definition, care, or treatment from any source, excluding traditional practitioners.

Conclusion

Care-seeking behavior was stagnant between 2006 and 2012. More recent data are not available, but we have no evidence to demonstrate this changed significantly. In FY 2020, PMI will focus on increasing SBC messaging addressing case-seeking behavior and rolling out iCCM activities.

Key Question 2

What is known about the major barriers and facilitators to care-seeking?

Supporting Data

Figure A29. Key Barriers and Facilitators to Care-Seeking

Facilitator	Type of Factor	Data Source	Evidence
Trust in modern medicine	Internal	National program reports and peer-reviewed literature[27]	Caregivers trust modern medicine and, where and when quality services and commodities are available and accessible, prefer modern forms of diagnosis and treatment to traditional methods.
Barrier	**Type of Factor**	**Data Source**	**Evidence**
Distance and road conditions	Environmental	Study[28] National health statistics, 2016	The distance to health centers negatively impacts care seeking. Most travel is by foot and it is not unusual for people to have to walk six hours for healthcare: 61% of the population is more than an hour's walk from a health center (76% during the wet season). By car, 57% of the population is more than an hour's drive to a health center in the dry season (74% in the wet season) and 90% of the roads in the country are unpaved.
Lack of household finances	Environmental	Study[29] Discussion with partners and common knowledge; Malaria and malnutrition study[30]	June to October is a time for both peak malaria transmission time and acute malnutrition. During this "lean season" - right before the harvest - subsistence farmers that make up the majority of Niger's population do not have the economic resources to visit a health facility and the population is not aware that malaria drugs are available for free at health facilities
Limited economic empowerment of women	Social	Study[31]	Women who are primary caregivers do not go to the health facility unless their husband gives them the money. In addition, women are solely responsible for the health of children and do not receive support from male households

[27] Access SMC. 2016. Rapport de l'évaluation de l'acceptation de la chimio prévention du paludisme saisonnier au Niger. Speak Up Africa.
[28] Blanford JI, Kumar S, Luo W, MacEachren AM. It's a long, long walk: accessibility to hospitals, maternity and integrated health centers in Niger. Int J Health Geogr. 2012 Jun 27;11:24. doi: 10.1186/1476-072X-11-24.
[29] Bedford JK, Sharkey AB. Local barriers and solutions to improve care-seeking for childhood pneumonia, diarrhoea and malaria in Kenya, Nigeria and Niger: A qualitative study. PLoS One. 2014;9:e100038. doi: 10.1371/journal.pone.0100038
[30] Malaria and malnutrition: Niger's twin crisis. MSF report. 2013
[31] Bedford JK, Sharkey AB. Local barriers and solutions to improve care-seeking for childhood pneumonia, diarrhoea and malaria in Kenya, Nigeria and Niger: A qualitative study. PLoS One. 2014;9:e100038. doi: 10.1371/journal.pone.0100038

Negative perceptions of health post	External	Study[32]	Caregivers think the health post is understaffed and do not feel that they will receive the help they need. Other contributing factors to the unfavorable of posts include restricted operating times, long wait times, lack of equipment and diagnostic capabilities and lack of medicines

Conclusion

There are more barriers than facilitators for care-seeking behavior. Although this information is more than five years old, from discussions with different stakeholders, most of the identified barriers remain current but PMI is addressing several issues with FY2019 and FY 2020 funding.

- The purchase of RDTs and medication for children and adults and the support to the commodity management system addresses the issues related to availability of free drugs and testing
- The support of the iCCM expansion addresses the issues of distance in the nine supported districts
- The implementation of SBC messages addresses recommended health seeking behavior and counters negative perceptions of CSI

Key Question 3

How have malaria testing and treatment practices evolved over time?

32 Bedford JK, Sharkey AB. Local barriers and solutions to improve care-seeking for childhood pneumonia, diarrhoea and malaria in Kenya, Nigeria and Niger: A qualitative study. PLoS One. 2014;9:e100038. doi: 10.1371/journal.pone.0100038

Supporting Data

Figure A30. Diagnosis and Treatment of Children with Fever

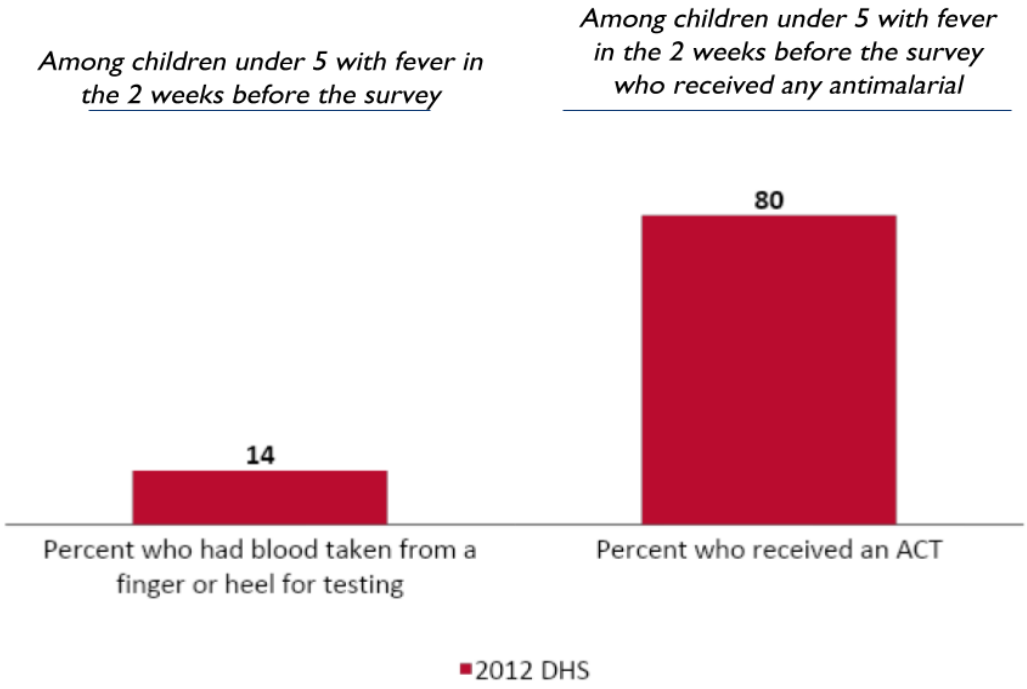
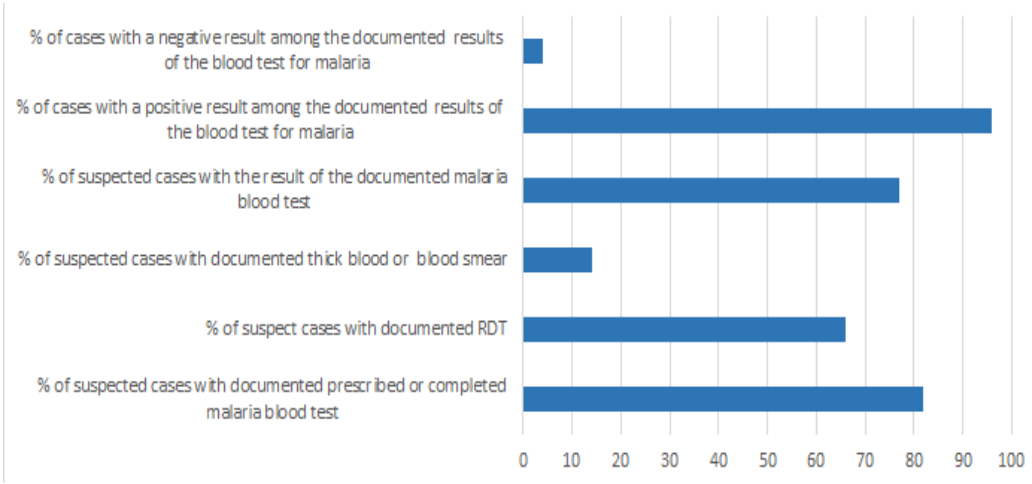
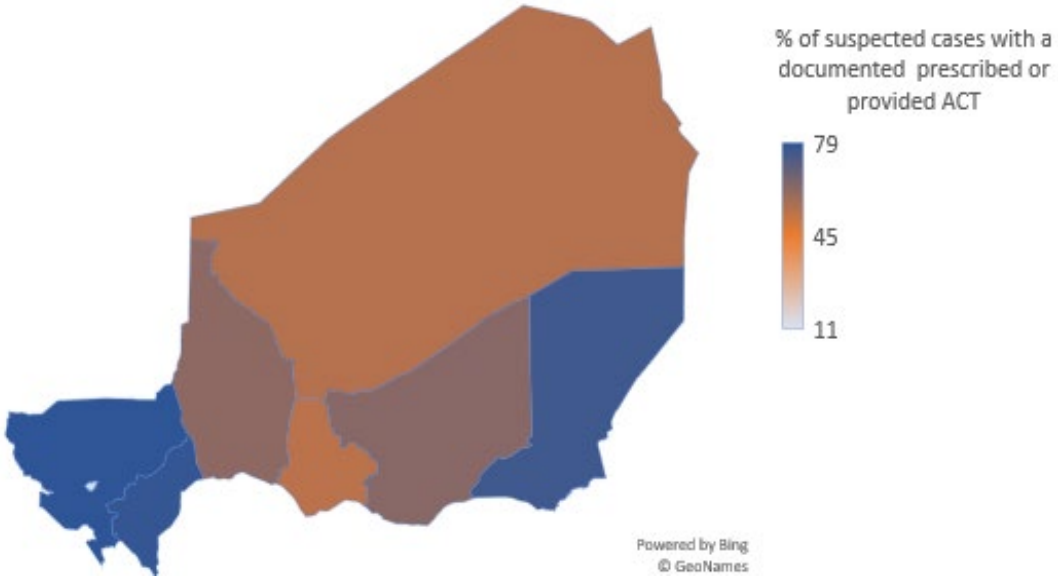


Figure A31. Diagnosis and Treatment of Children with Fever



Source: SARA 2019

Figure A32. Treatment of Suspected Cases with ACT



Source: SARA/DQR/QOC 2019

Conclusion

Due to a weak health information system, reported data differ depending on the source. According to the results of the SARA 2019 assessment, both the rate of malaria testing and correct treatment with ACT seems to be increased in comparison with the DHS 2012 data. PMI's continuous support will assure that both indicators improve.

Key Question 4

What is known about provider behavior in relation to testing and treatment practices?

Supporting Data

There is limited information available about provider behavior. According to the SARA survey (2019), 64 percent of malaria cases were treated appropriately, and 86 percent of confirmed cases were treated according to the national directives.

Conclusion

PMI will continue to support service delivery activities aimed at improving testing and the quality of care. PMI support of the supply chain should also help.

Key Question 5

What is the current and planned support for case management at health facilities and in the communities by CHWs?

Supporting Data

Figure A33. Current and Planned Support for Case Management

Intervention: FY 2019 and 2020	PMI Dosso and Tahoua region	Global Fund Whole country	UNICEF Whole country	World Bank Tillaberi region
Training of health care workers on malaria case management	X	X		
Training/orientation of CHWs	X	X	X	X
iCCM coordination and supervision	X	X	X	X
Health care workers training on malaria parasitological diagnosis	X			
IEC/SBC (reprography and diffusion of materials)	X	X	X	X

Conclusion

PMI will continue the support provided with FY2019 funding but will increase the iCCM implementation to 8 of the 21 districts in the 2 PMI focus regions.

Key Question 6

What is the estimated need for RDTs for FY 2020?

Supporting Data

Figure A34. Gap Analysis of RDT, 2019 - 2020

Calendar Year	2019	2020	2021
RDT Needs			
Total country population	22,314,742	23,196,174	24,112,752
Population at risk for malaria [1]	22,314,742	23,196,000	24,112,752
PMI-targeted at-risk population[2]	22,314,742	23,196,000	24,112,752
Total number of projected fever cases[3]	18,545,551	18,978,403	19,706,589
Percent of fever cases tested with an RDT[4]	24.8%	26.7%	28.0%
Total RDT Needs[5]	**4,599,509**	**5,061,740**	**5,518,607**
Partner Contributions (to PMI target population if not entire area at risk)			
RDTs carried over from previous year	**2,173,950**	1,697,916	685,201
RDTs from Government	0	201,425	201,425
RDTs from Global Fund	609,150	2,597,600	TBD
RDTs from other donors (World Bank)	431,800	0	0
RDTs planned with PMI funding	3,082,525	1,250,000	2,800,000
Total RDTs Available[6]	**6,297,425**	**5,948,366**	**3,686,626**
Total RDT Surplus (Gap)	**1,697,916**	**685,201**	**-1,831,981**

1. Geographic coverage: In Niger, the entire population is at risk for malaria
2. PMI does not have targeted population or area for case management commodities. PMI contribute with other donors such as Global Fund to fill all the needs for RDT needs and using a common basket for commodities management
3. Total number of fever cases is estimated with assumptions of fever that could happen to each age group and considering reduction of cases with the use of LLIN and drug-based prevention (SMC)
4. Percent of fever cases tested with an RDT is an estimate from fever that can be seen in public health facilities and at community level (iCCM for children under 5 years) and taking into account health facilities coverage rate (which is under 50%)
5. Total RDT needs is the total needs for public health facilities and iCCM (for children under 5 years of age)
6. Current Global Fund grant ends in 2020. New grant is expected to start in 2021 and Global Fund contribution for that year will be known by October 2020. In addition to the carry-over from 2020, PMI will procure quantities of RDT to ensure that at least the needs for the first semester of 2021 is covered. World Bank funding is ending in 2019.

Conclusion

The Global Fund grant for 2021-2024 is not yet approved but it is expected that all the RDT need for malaria diagnosis will be covered by Global Fund and PMI. In discussion with Global Fund, it is agreed on that PMI will cover the quantities the budget allows, and Global Fund will fill the gap.

Key Question 7

What is the estimated need for ACTs for FY 2020?

Supporting Data

Figure A35. Gap Analysis of ACTs, 2019 - 2021

Calendar Year	2019	2020	2021
ACT Needs			
Total country population	22,314,742	23,196,000	24,112,752
Population at risk for malaria	22,314,742	23,196,000	24,112,752
PMI-targeted at-risk population[1]	22,314,742	23,196,000	24,112,752
Total projected number of malaria cases[2]	5,042,588	5,639,729	6,122,800
Total ACT Needs[3]	**3,440,523**	**3,715,707**	**3,979,701**
Partner Contributions (to PMI target population if not entire area at risk)[4]			
ACTs carried over from previous year[5]	1,733,504	1,167,000	0
ACTs from Government	0	466,930	466,930
ACTs from Global Fund	303,510	419,550	TBD
ACTs from other donors (WB)	256,620	0	0
ACTs planned with PMI funding	770,460	1,656,420	1,936,000
Total ACTs Available	**3,064,094**	**3,709,900**	**2,402,930**
Total ACT Surplus (Gap)	**- 376,429**	**-5,807**	**-1,576,771**

1. In Niger, the entire population is at risk for malaria. PMI doesn't have targeted population or area for case management commodities. PMI contribute with other donors such Global funds to fill all the needs for ACT needs and using a common basket for commodities management
2. Total projected malaria cases are derived from cases tested and test positivity rate which is estimate from 66,7% (2019), 65,67% (2020) and 64.65% (2021). These projected malaria cases are those that can be seen in public health facilities, private sector and at community level
3. Total ACT needs is the needs for public health facilities and iCCM (for children under 5 years)

4. Current Global Fund grant ends in 2020. New grant is expected to start in 2021 and Global Fund contribution for that year will be known by October 2020. In addition to the carry-over from 2020, PMI will procure quantities of ACT to ensure that at least the needs for the first semester of 2021 is covered
5. Carry over is expected in 2020 from 2019 because it late deliveries during the last quarter of 2019 from some partners is anticipated and these deliveries will not be distributed to health facilities until January 2020

Conclusion

The Global Fund grant for 2021-2023 is not yet approved but it is expected that all the ACT need will be covered by Global Fund and PMI. In discussion with Global Fund, it is agreed on that PMI will cover the quantities the budget allows, and Global Fund will fill the gap.

Key Question 8

What is the projected need for severe malaria treatment and any other treatments as applicable?

Supporting Data

Figure A36. Gap Analysis of Injectable Artesunate for 2019 - 2021

Calendar Year	2019	2020	2021
Injectable Artesunate Needs			
Projected Number of Severe Cases[1]	352,981	394,781	428,596
Projected # of severe cases among children to be treated with injectable artesunate (90%)	275,321	279,076	303,755
Projected # of severe cases among adults to be treated with injectable artesunate (90%)	77,660	76,227	81,982
Total Injectable Artesunate vials Needs [2]	**1,147,701**	**1,103,064**	**1,171,698**
Partner Contributions [3]			
Injectable artesunate vials carried over from previous year	544,449	346,069	448,565
Injectable artesunate vials from Government	0	0	0
Injectable artesunate vials from Global Fund	683,321	444,955	TBD
Injectable artesunate vials from other donors	0	0	0
Injectable artesunate vials planned with PMI funding	266,000	760,606	365,000
Total Injectable Artesunate vials Available	**1,493,770**	**1,551,630**	**813,565**
Total Injectable Artesunate vials Surplus (Gap)	**346,069**	**448,565**	**-358,132**

1. Severe malaria is estimated at roughly 8% of malaria cases
2. This is the number of vials needed based on the demographic projection. Average number of vials needed per case varies from 3 - 6 depending on weight with the intention of most patients being treated for one day with injectable artesunate, and those being able to swallow continuing with a course of ACTs. and what percent of cases are expected to be treated with injectable artesunate. As an alternate treatment regimen, 10% cases of severe malaria are to be treated with injectable artemether for 2 days before most would transition to ACTs.
3. Current Global Fund grant ends in 2020. New grant is expected to start in 2021 and Global Fund contribution for that year will be known by October 2020. In addition to the carry-over from 2020, PMI will procure quantities of ACT to ensure that at least the needs for the first semester of 2021 is covered.

Figure A37. Gap Analysis of Artesunate Suppository Needs, 2019 - 2021

Calendar Year	2019	2020	2021
Artesunate Suppository Needs			
Number of severe cases expected to require pre-referral dose at community level	42,342	55,994	64,231
Total Artesunate Suppository Needs [1]	**79,618**	**105,287**	**120,776**
Partner Contributions			
Artesunate suppositories carried over from previous year	157,680	82,050	56,221
Artesunate suppositories from Government	0	0	0
Artesunate suppositories from Global Fund	0	0	0
Artesunate suppositories from other donors - World Bank	3,988	0	0
Artesunate suppositories planned with PMI funding	0	79,458	56,000
Total Artesunate Suppositories Available	**161,668**	**161,508**	**112,221**
Total Artesunate Suppositories Surplus (Gap)	**82,050**	**56,221**	**-8,555**

[1.] This is the number of suppositories needed based on historical service performance by community-level workers. There is a seeming capacity gap, regardless of product availability. Indicate if the needs to fill the pipeline are included. This should be reassessed in light of community health worker capacity building. Quantity calculated is for Artesunate 50 mg suppository

Conclusion

The Global Fund grant for 2021-2024 is not yet approved but it is expected that all the need for severe malaria treatment will be covered by Global Fund and PMI. In discussion with Global Fund, it is agreed on that PMI will cover the quantities the budget allows, and Global Fund will fill the gap.

Key Question 9

Are the first-line ACTs effective and monitored regularly?

Supporting Data

Figure A38. Recently Completed and Ongoing Antimalarial Therapeutic Efficacy Studies

Year	Sites	Treatment arms	PCR-corrected ACPR[2]>90%?	Where molecular resistance work was completed or the plan, if any, for molecular resistance work
2013-2014[1]	Maradi	AL, AS/AQ, DP[3]	yes	>95% efficacy
2017	Doutchi , Boboye	AL, AS/AQ	yes	>91% efficacy

[1.] Grandesso *et al. Malar J (2018) 17:52;* https://doi.org/10.1186/s12936-018-2200-1

[2.] ACPR: adequate clinical and parasitological response

[3.] DP: Dihydroartemisinin-piperaquine

[4.] Idrisssa Y (2018)

Conclusion

Based on the 2014 and 2017 data, evidence suggests the three ACTs tested were efficacious. The results will be updated after the study that will be conducted in 2020.

Key Question 10

Are there other key items, such as lab strengthening, private sector support, etc. that should be considered?

Supporting Data

There are a lot of needs in the country, but with the FY2020 funding, we will support the private sector through some high-level trainings because this is a priority for the NMCP.

Conclusion

Although there is a need for these activities, the high need in country and prioritization of the FY2020 funding result in a limited and very focused support.

Key Question 11

What are the in-country considerations that impact your funding allocation in this category?

Supporting Data

The PMI funding allocations are impacted by the high need of the country for commodities, capacity building and technical assistance to update and implement guidelines, that PMI must prioritize the interventions and choose a stepwise approach. A specific challenge is the fact that the healthcare staff is constituted of more than two-thirds of contractors, with some CSI having only 1 MOH staff. This leads to a high turn-over in health centers as people are always looking for better jobs. The consequence of the high staff turnover is the necessity to maintain the number of training on case management.

Conclusion

PMI will continue to support on-site training in case management for health workers in the two PMI focus regions. In addition, we continue the discussion with NMCP and Global Fund to ensure that the remaining part of the country will receive this continuous support through the new Global Fund grant.

2.B. DRUG-BASED PREVENTION

NMCP objective
The NMCP's case management objectives as outlined in the NMSP • At least 80 percent of pregnant women will receive at least three doses of SP • At least 80 percent of pregnant women will sleep under an LLIN

- At least 80 percent of children aged 3 to 59 months in areas targeted by seasonal malaria chemoprevention receive 4 times preventive treatment during high malaria transmission season

NMCP approach

The NMCP supports the WHO malaria in pregnancy (MIP) approach through providing an LLIN during prenatal consultation, intermittent preventive treatment (IPTp) with SP and effective case management of malaria and anemia.

Niger's Malaria Diagnostic and Treatment Guidelines, updated in December 2017, states that IPTp dosing begins in the fourth month of pregnancy (after quickening) until delivery with an interval of one month between doses, SP is to be administered as directly observed treatment by qualified health personnel. All uncomplicated malaria cases during the first trimester should receive oral quinine in three doses for seven days, since ACTs are contraindicated during this period and during the second and third trimesters, all uncomplicated cases are to be treated orally with ACTs (or with oral quinine for seven days if there are no ACTs available). For severe malaria, pregnant women should receive injectable artesunate or injectable quinine if artesunate is unavailable or not tolerated.

The reality of the current ANC seeking behavior of women in Niger makes it difficult for the MOH to adopt the new WHO ANC guidelines for 8 ANC contacts during a pregnancy because pregnant women customarily wait until their last month of pregnancy before seeking care. Although more than 2300 health workers were trained since 2018 and the registers are updated to capture three doses of IPTp, the guidelines are not fully implemented A survey conducted in 2019 (SARA) showed that while 80 percent of facilities offer IPTp services, only 47 percent have health providers trained in IPTp. Data from DHS (2012) indicate that 35 percent of the pregnant women received two or more doses of IPTp during their last pregnancy and 24 percent were sleeping under an LLIN. This will not change in the near future because the MOH decided to prioritize to increase the number of women attending ANC before increasing the number of visits per pregnancy. According to the NMCP, few providers have been trained on the use of severe malaria drugs and procedures which limit the capability to treat severe malaria in pregnant women in peripheral health facilities.

Due to the low health facility coverage in Niger and low utilization of health structures, the NMCP recognizes the need to expand the delivery of ANC, including IPTp, and considers including this in the community health workers task list, although this is not a WHO policy and will not be supported by PMI. Other than the fee for the health card (200 FCFA or U.S. 40 cents), all ANC and IPTp services are free of charge. The NMCP treatment guidelines do not mention WHO guidance related to daily folic acid administration with SPs.

Niger initiated SMC with amodiaquine plus Sulfadoxine/pyrimethamine (AQ+SP) in the southern part of the country in 2013 targeting 205,959 children between 3 months and 5 years of age during the SMC campaign. Since 2018, approximately 4 million children, in all the 61 eligible districts are covered during four rounds organized by NMCP with support of UNICEF, World Bank, Global Fund and PMI. The treatment is delivered through door-to-door campaigns as well as fixed distribution sites. Starting in 2016, malnutrition screening was added to the SMC campaign. Children identified as being severely or moderately malnourished, are referred to a CSI with a nutrition treatment center. An NMCP SMC working group comprised of NMCP staff, MOH

Nutrition Division, implementing partners and donors meet regularly to prepare the national campaign and to ensure a standardization of activities.

PMI objective, in support of NMCP

PMI contributes to drug-based prevention through numerous interventions which aims to improve the quality of service and the availability of commodities. PMI, in collaboration with the Global Fund, cover the medication needs for MIP throughout the country by contributing to the common basket. PMI will continue to support the bi-annual national MOH coordination meeting and the DSME to train national trainers on the guidelines. In the 2 PMI focus regions, PMI will assist NMCP in the implementation of the national MIP guidelines at public (and selected private) facilities through in-service refresher training, production of job aides, and supportive supervision.

For SMC, PMI will support the implementation of the campaign in the 2 PMI target regions targeting 1,4 million children through purchasing the medication and support planning, training, social mobilization, implementation, supervision and monitoring.

Please see Table 2 for a detailed list of proposed activities with FY2020 funding.

PMI-supported recent progress (past ~12-18 months)

- Strengthen MIP policy through integrating malaria directives in DSME guidelines
- Establishment and support to the MIP technical working group
- Procurement of 1,365,000 SP treatments for MIP in 2019
- Procurement of 990,600 LLIN for routine distribution to pregnant women and children under 12 months of age
- Procured 5,315,100 AQ/SP treatments for 2019 SMC campaign.
- Implementation of the 2019 SMC campaign with four visits during the period of high malaria transmission each year targeting 1,2 million children (3 months- 59 months) in the 2 PMI target regions with a coverage of 96%

Note: see above for progress made in training

PMI-supported planned activities (next ~12-18 months, supported by currently available funds)

- Disseminate case management guidelines
- Procurement of SP commodities for IPTp
- Support the MIP technical working group
- Support bi-annual coordination meetings related to MIP activities at the national level
- Strengthen MIP training and supervision in health facilities in the 2 PMI target regions
- Plan and implement the 2020 SMC campaign in the 2 PMI target regions

2.B.i SEASONAL MALARIA CHEMOPREVENTION (SMC)

PMI Goal

Support the national strategy for SMC addressing relevant geographic areas and age groups, which includes four rounds, and children aged 3 to 59 months, in accordance with the WHO recommendations.

Do you propose expanding, contracting, or changing any seasonal malaria chemoprevention activity? If so, why and what data did you use to arrive at that conclusion?

We do not propose any changes to the PMI support of SMC activities, but we are looking for ways to make the campaigns more integrated in the routine 'rainy season' activities of the MOH. In addition, we are looking in new ways - using mobile based payment mechanism - to pay the high numbers of distributors.

Please see Table 2 for a detailed list of proposed activities with FY 2020 funding.

Key Question 1

What is the estimated need for SMC commodities over the next three years and what proportion of this need will PMI support?

Supporting Data

Figure A39. Gap Analysis of SMC Commodities for 2019 - 2021

Calendar Year	2019	2020	2021
SMC drug (SP+AQ) Needs			
Population targeted for SMC [1]	**4,136,929**	**4,294,922**	**4,594,000**
PMI-targeted population for SMC [2]	1,269,593	1,316,710	1,419,837
Total SP+AQ Needs[3]	**18,048,194**	**18,736,826**	**20,036,786**
Partner Contributions (to PMI target population if not entire area at risk)			
SP+AQ carried over from previous year	451,500	0	0
SP+AQ from Government			
SP+AQ from Global Fund	10,009,400	13,101,850	TBD
SP+AQ from Other Donors (World Bank)	1,929,450	0	0
SP+AQ planned with PMI funding	5,315,100	5,496,850	6,185,340
Total SP+AQ Available	**17,705,450**	**18,598,700**	**6,185,340**
Total SP+AQ Surplus (Gap)	**-342,744**	**-138,126**	**-13,851,446**

[1.] The target is 100% of children under 5 in the 61 (of 71) districts targeted. Data source: Data statistics from INS 2012 . Population targeted for SMC is the age group from 3 to 59 months. This age represents 20% of the total general population of the targeted districts

[2.] Out of the 61 eligible districts in 2019 and 2020, PMI covers 17 districts (for around 31% of the targeted population) in the region of Tahoua and Dosso in 2019 and 2020 . But in 2021 NMCP will expand SMC in all the districts of Tahoua meaning that we'll have 65 eligible districts and PMI will cover 21 districts. In 2019 and 2020, 4 Districts in Tahoua region are not eligible for SMC. In 2021 we included all the districts of Tahoua as eligible districts for SMC

[3.] We have considered that 100% of children will be covered. This assumption is based on the past performance of the last 2 years campaigns which is above 95% coverage
[4.] Current Global Fund grant ends in 2020. New grant is expected to in 2021 and then Global Fund contribution for that year will be known by October 2021. And Global Fund is supposed to over all the 5 remaining regions

Conclusion

The Global Fund grant for 2021-2024 is not yet approved but it is expected that all the need for SMC drugs will be covered by Global Fund and PMI. In discussion with Global Fund, it is decided that PMI will cover the medication for Tahoua and Dosso. With the implementation and expansion of SMC, country changed its procurement of ASAQ and the pediatric formulation of this product is not procured anymore. AL and Artesunate-Pyronaridine are formulations that will be procured for children.

Key Question 2

What are the estimated non-commodity resource needs to properly deliver SMC over the next 3 years?

Supporting Data

The implementation of SMC campaigns necessitate non-commodity costs that cover the following:

- Participation in microplanning with the NMCP and other donors
- Distribution of AQ/SP and related commodities (e.g. cups and bowls) to districts and health facilities (CSI)
- Training for health staff from regional and district health centers, CSI staff, drug distributors and staff for social mobilization
- Payment of per diems for campaign personnel at central, district and field levels
- Rental of motorbikes, vehicles used for distribution and supervision
- Procurement and distribution of communication tools and materials to the districts and CSI
- Communication campaign through media and other means

Conclusion

The SMC campaign is a resource demanding intervention and PMI will work with NMCP to integrate it more in the existing activities of the health system.

Key Question 3

What does the data show about SMC refusal rates? How do refusal rates change from round to round? What barriers are contributing to SMC refusal rates?

Supporting Data

The refusal rate for SMC campaign is low and decreases each round. For 2018, 15,303,923 children were treated during the four rounds and 814 kids refused treatment or 5/100 000 children. The number of refusals decreased from 327 children for round 1 to 92 for round 2.

Figure A40. Barriers and Facilitators to SMC Use

Facilitator	Type of Factor	Data Source	Evidence
Perceived efficacy	External	Speak Up Africa[33]	Because SMC is considered as an effective way to prevent malaria, more than 99% of mothers and caretakers are willing to give again SMC medication to the children in their care.
Barrier	**Type of Factor**	**Data Source**	**Evidence**
Lack of awareness due to poor service communication	External	Speak Up Africa[34]	Mothers indicated that they did not know when the campaign was happening, so they were unable to make their children available to receive the pills. Some mothers did not know that the medication is free
Taste of the drug	External	Speak Up Africa[35]	74% of mothers consider the bitter taste of the drug to be a deterrent.

Conclusion

SMC is well accepted. The main challenge is to ensure adherence to the three-day treatment which is difficult to supervise and measure. PMI will support the development of improved SBC messages to address the need to take the three days of treatment and to better communicate the dates of the campaigns.

Key Question 4

What are the in-country considerations that impact your funding allocation in this category?

Supporting Data

The PMI funding allocations are impacted by available resources from the Global Fund and other donors. SMC is a key intervention in malaria strategy requesting important funding mobilization but has limited donor (PMI & Global Fund from 2020) supporting this intervention. The security situation in some districts requires additional costs with vehicle hire instead of motorcycle and a change in the distribution strategy from door to door distribution to the fixed distribution strategy.

[33] *Report of the evaluation of the acceptance of seasonal chemoprevention of malaria in Niger, Global Fund, 2016.*
[34] *Report of the evaluation of the acceptance of seasonal chemoprevention of malaria in Niger, Global Fund, 2016.*
[35] *Report of the evaluation of the acceptance of seasonal chemoprevention of malaria in Niger, Global Fund, 2016.*

Conclusion

SMC is a well-funded and well-accepted intervention. The increasing insecurity in certain districts is affecting funding because special measures must be put in place such as using cars instead of motorbikes. The need for medication is also difficult to assess in certain border districts and although this is partly resolved thanks to good collaboration with the neighboring countries so that SMC is scheduled at the same time, it is not resolving all the border crossings, especially with Nigeria.

2.B.ii MALARIA PREVENTION IN PREGNANCY (MIP)

PMI Goal

Support the national strategy for MIP, which includes provision of LLINs at first ANC visit, intermittent preventive treatment for pregnant women (IPTp) to all pregnant women in malaria endemic area starting at 13 weeks gestational age, for a minimum of 3 doses, and effective case management of malaria, in accordance with the WHO recommendations.

Do you propose expanding, contracting, or changing any MIP activities? If so, why and what data did you use to arrive at that conclusion?:

We are proposing to maintain the same activities and levels of funding until the current challenges and weaknesses are addressed. Once that all staff is trained on the MIP guidelines and there are no longer stock out of commodities, PMI will start to address other issues such as increasing the number of ANC per woman to increase the IPTp4 coverage.

Key Question 1

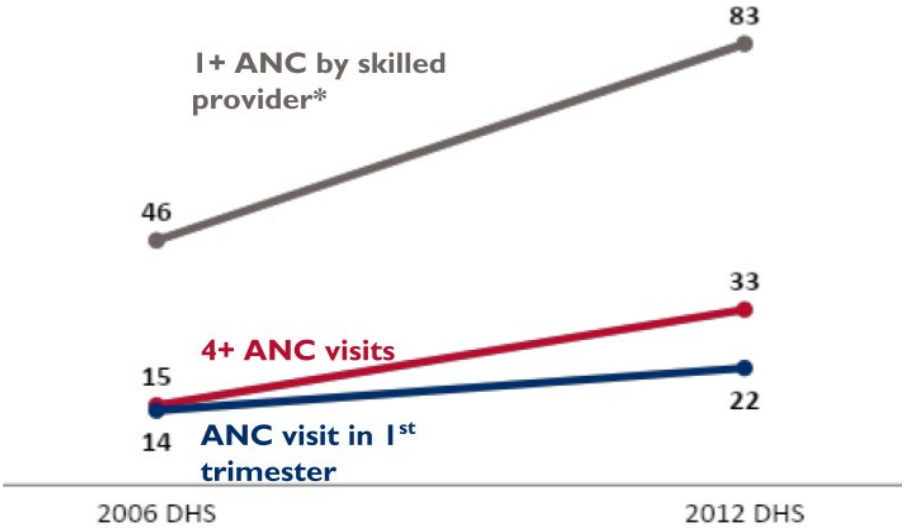
What proportion of pregnant women are receiving ANC early and frequently during their pregnancy?

Supporting Data

An evaluation conducted by LSTM[36] in 110 health facilities representative of Niger's eight regions confirmed the DHS data that attendance of ANC dropped with each visit.

[36] *Évaluer la qualité des soins néonatals, maternels et infantiles au Niger, Décembre 2018*

Figure A41. Trends in ANC coverage, *Percent of Women Age 15-49 with a Live Birth in the 5 Years Before the Survey for Most Recent Birth*



Note: Skilled provider includes doctor, nurse, midwife, or trained birthing attendant

Conclusion

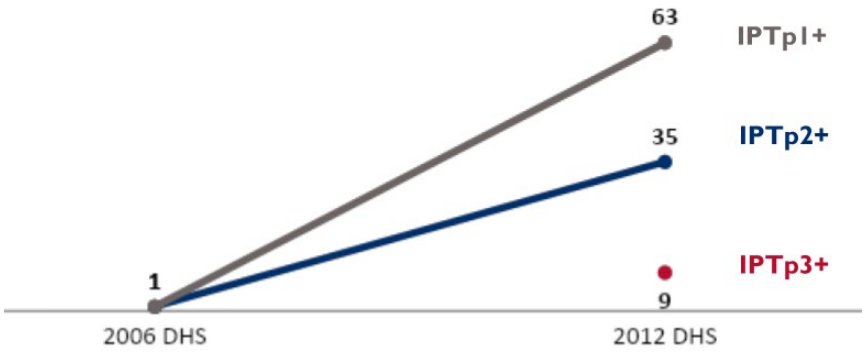
Although the number of pregnant women attending at least one ANC during their pregnancy almost doubled in 6 years (from 2006 to 2012), the percentage of women attending ANC during the first trimester increased but is still below 30 percent. The 2016 WHO ANC policy has been integrated in training modules and include the promotion of early initiation of IPTp. A relatively high proportion of women attended at least one ANC during their pregnancy. Cultural beliefs that pregnancies should be kept secret may account for the low rate of ANC during the first trimester. PMI will support the national SBC strategy aimed at improving early ANC attendance and will train health workers on the policy with the aim to improve health workers adherence to the guidance.

Key Question 2

What proportion of pregnant women are receiving the recommended doses of IPTp?

Supporting Data

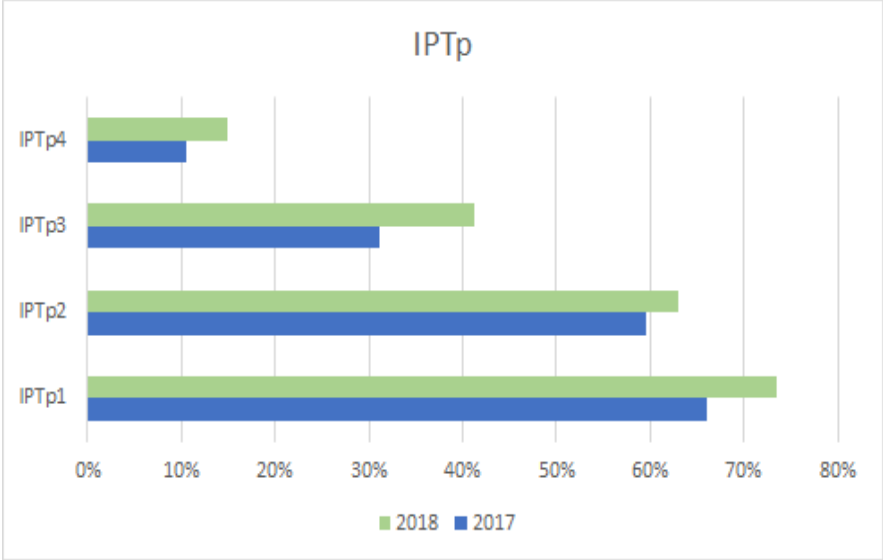
Figure A42. Trends in IPTp, *Percent of Women Age 15-49 with a Live Birth in the Two Years Before the Survey Who Received the Specified Number of Doses of SP/Fansidar During their Last Pregnancy*



Note: These indicators have been recalculated according to the newest definition (the specified number of doses of SP/Fansidar from any source) wherever possible.

The data from the health information system show a significant increase in the number of women who received IPTp in 2017 and 2018 compared with the DHS data from 2016, the increase is especially high for IPT2 and IPT3. (Figure 30 and 31)

Figure A43. IPTp coverage, Niger 2017-2018[37]



Conclusion

The percentage of women receiving IPTp increased since the last DHS. With the increased availability of the medication, the adaptation of guidelines and the training of health staff, the coverage is expected to increase more. A challenge stays the cultural reluctance to attend ANC during the first trimester. PMI will support the national SBC strategy aimed at improving early

[37] NMCP quarterly report 2017 and 2018

ANC attendance and will train health workers on the policy with the aim to improve health workers adherence to the guidance.

Key Question 3

What is the gap between ANC attendance and IPTp uptake? What barriers and facilitators exist, especially among providers?

Supporting Data

Figure A44. Trends in Missed opportunities in IPTp, *Percent of Women Age 15-49*

In Niger, pregnant women are offered the full package of healthcare during the ANC visits, including IPTp. The limiting factor for IPTp is the lack of ANC visits in general and especially during the first term, in addition to lack of provider knowledge there is no other information available about barriers for women to adhere at IPTp.

Figure A45. Key Barriers and Facilitators to IPTp Uptake

Facilitator	Type of Factor	Data Source	Evidence
Access	Environmental	SARA, 2019	80 percent of surveyed facilities offered IPTp
Barrier	**Type of Factor**	**Data Source**	**Evidence**
Access	Environmental	SARA, 2019	Only 47% have health providers trained in IPTp.
ANC seeking behavior	Internal	DHS, 2012	The percentage of women attending ANC during the first trimester increased between 2006 and 2012 but is still below 30 percent

Negative perceptions of health post	External	Study[38]	Caregivers think the health post is understaffed and do not feel that they will receive the help they need. Other contributing factors to the unfavorable perception of posts include restricted operating times, long wait times, lack of equipment and diagnostic capabilities and lack of medicines

Conclusion

PMI will support SBC to increase early and regular ANC attendance because this is the main limiting factor for women to not receive IPTp. PMI's support of health worker training should address the lack of knowledge of the providers. PMI's supply chain efforts will continue to ensure that facilities have the SP they need.

Key Question 4

What proportion of pregnant women with fever and malaria infection are getting diagnosed and treated? What barriers and facilitators exist?

Supporting Data

An evaluation conducted by LSTM (2018)[39] in 110 health facilities representative of Niger's eight regions found that 18 percent of the 115,805 pregnant women attending ANC consultations in March 2018 18 percent of pregnant were screened for malaria, just over half (51 percent) Fifty-one percent tested positive and almost all those women (94 percent) received treatment. Ninety-four percent of eligible women received IPTp. In DHIS2, information is collected about diagnosis, treatment and preventive care (IPTp1 to 4), but the data quality has to be improved.

[38] Bedford JK, Sharkey AB. Local barriers and solutions to improve care-seeking for childhood pneumonia, diarrhoea and malaria in Kenya, Nigeria and Niger: A qualitative study. PLoS One. 2014;9:e100038. doi: 10.1371/journal.pone.0100038

[39] . Évaluer la qualité des soins néonatals, maternels et infantiles au Niger, Décembre 2018

Figure A46. Malaria Testing and Treatment During Pregnancy[40]

	At Integrated health centers (N=79)	At District hospital (N=3)	At Centers for Mother and Children (N=4)	At All (N=86)
Percentage of pregnant women who received an RDT during their first ANC visit [1]	18	100	50	19
Percentage of pregnant women who received an RDT and tested positive for malaria during their first ANC visit (N=1,403)	51	6	29	51
Percentage of pregnant women who tested positive and were treated for malaria during their first ANC visit (N=259)	94	100	100	99

[1.] Depending on region, screening was systematic (Diffa and Agadez region) or only if women was symptomatic

Figure A47. Key Barriers and Facilitators to Malaria Testing and Treatment in Pregnancy

Facilitator	Type of Factor	Data Source	Evidence
Availability of medications	Environmental	Quality of care evaluation, 2018[41]	• The availability of quinine is high in CSIs and CSMEs, and available at 77 percent of hospitals. • Artemether or injectable artesunate intramuscularly was available in 70 percent of surveyed facilities.
School of husbands	Social	UNFPA, HKI[42]	The school of husband increases the involvement of husbands in the wellbeing of their family and has allowed more than 94% increase in ANC in a Maradi health center.
Barrier	**Type of Factor**	**Data Source**	**Evidence**
Poor provider communication	Environmental	SARA, 2019	Only 65 percent of women had a provider discuss or explain the results of their tests with them and only 10% of women were asked if they had any questions

Conclusion

Ensuring availability of commodities, continuous supervision of health staff and using SBC initiatives to encourage early and frequent ANC visits should help maintain and improve the care of malaria in pregnancy.

[40] Rapport: Évaluer la qualité des soins néonatals, maternels et infantiles au Niger. Decembre 2018. London School of Tropical Medicine Centre for Maternal and Child Health." Conducted in May-June 2018, the study assessed 110 facilities representative of the country's eight regions.

[41] "Rapport: Évaluer la qualité des soins néonatals, maternels et infantiles au Niger. Decembre 2018. London School of Tropical Medicine Centre for Maternal and Child Health." Conducted in May-June 2018, the study assessed 110 facilities representative of the country's eight regions.

[42] https://www.hki.org/updates/when-husbands-go-school-families-are-healthier#.XYivvyPYqUl; https://www.unfpa.org/news/schools-husbands-gaining-ground-rural-niger

Key Question 5

What is the estimated need for IPTp commodities over the next three years and what proportion of this need will PMI support?

Supporting Data

Figure A48. Gap Analysis of IPTp Commodities for 2019 - 2021

	2019	2020	2021
Total Population at Risk	22,314,742	23,196,000	24,112,752
SP Needs			
Total number of pregnant women[1]	965,242	1,000,976	1,038,988
Total SP Need (in treatments)[2,3]	**2,220,057**	**2,352,294**	**2,493,571**
Partner Contributions[4]			
SP carried over from previous years	172,200	950,583	2,085,277
SP from Government	0	0	0
SP from Global Fund	1,398,440	2,062,287	TBD
SP from Other Donors	0	0	0
SP planned with PMI funding	1,600,000	1,424,700	1,000,000
Total SP Available	**3,170,640**	**4,437,570**	**3,085,277**
Total SP Surplus (Gap)	**950,583**	**2,085,277**	**591,706**

1. The total number of pregnant women is estimated at 4.32% of the total population for 2019, 2020 and 4.31% for 2021. This is not the total number of ANC visits
2. The number of treatments should be calculated using the total number of pregnant women attending ANC and estimating the percentage who will attend ANC1, ANC2, ANC3, ANC4 to receive IPTp.
    - Assumptions for 2019: ANC1 attendance 80%; ANC2: 70%; ANC3: 41% and ANC4: 41%
    - Assumptions for 2020: ANC1 attendance 82%; ANC2: 71%; ANC3: 41% and ANC4: 41%
    - Assumptions for 2021: ANC1 attendance 84%; ANC2: 72%; ANC3: 42% and ANC4: 42%
3. One treatment of IPTp is comprised of 3 SP tablets. Quantity of SP needs is the total need to cover 4 treatments cycle
4. Current Global Fund grant ends in 2020. New grant is expected to in 2021 and then Global Fund contribution for that year will be known by October 2021. In addition to the carry-over from 2020, PMI will procure quantities of SP to ensure that at least the needs for the first semester of 2021 is covered

Conclusion

The Global Fund grant for 2021-2024 is not yet approved but it is expected that all the SP need will be covered by Global Fund and PMI. In discussion with Global Fund, it is agreed on that PMI will cover the quantities the budget allows, and Global Fund will fill the gap.

Key Question 6

What are the in-country considerations that impact your funding allocation in this category

Supporting Data

Limited procurement source of SP can impact the availability of commodities and also increase the budget. Increase of ANC coverage will contribute to increase MIP coverage and PMI will not

directly invest in this area but will support staff training and adherence to MIP policy especially in 2 regions.

Conclusion

PMI will continue its support to improve care of malaria in pregnancy by providing training to health workers, implementing a coordination mechanism among partners and ensuring availability of SP drugs in close collaboration with Global Fund and other partners. `

3. CROSS-CUTTING AND OTHER HEALTH SYSTEMS

3.A. SUPPLY CHAIN

NMCP objective
According to the National Malaria Strategic Plan, the NMCP's objective for pharmaceutical management by 2021 is to ensure the continuous availability of all malaria-related commodities in all health facilities and at the community level. To strengthen the supply chain and pharmaceutical management, the plan calls for • Increased availability of products, including through improved quantification and procurement practices • Strengthening of the distribution and stock management of malaria commodities • Strengthening of the logistics management information system • Improvements in the quality control of malaria medicines
NMCP approach
In addition to the NMCP, there are four agencies involved in the supply chain management system: • The *Direction de la Pharmacie et de la Médecine Traditionnelle* (DPH/MT) is in charge of the formulation and monitoring of the pharmaceutical policy which includes the administration of the pharmaceutical sector, regulation, pharmacovigilance, the setting of norms and standards, supervision, and the promotion of traditional medicine • The *Office National des Produits Pharmaceutiques et Chimique*s (ONPPC) is responsible for the supply, storage, and distribution of essential medicines and supply. • The *Société Nigérienne des Industries Pharmaceutiques* (SONIPHAR) ensures the local production and distribution of medicine • The *Laboratoire National de Santé Publique et d'Expertise* (LANSPEX) is responsible for the quality control of medicines. Niger's MSP states that all antimalarial drugs delivered must have a Nigerian marketing authorization and must comply with WHO standards and will be tested for quality upon arrival in the country and six months afterwards.

In 2019, the Ministry of Health through the DPH/MT and with the support of partners developed its supply chain national strategic plan. The goal of the strategic plan is the establishment of an integrated health product supply chain mechanism called "*chaine unique d'approvisionnement*" focused on ONPPC, coordinated by DPH / MT and bringing together the various stakeholders for regular availability of health products from quality at all levels of the health pyramid. All health products will be progressively integrated into the supply chain.

The MOH through its vision of an integrated supply chain, aims to provide to all populations of Niger, wherever they are, access to quality health products for full coverage of health problems. For this reason, the MOH is committed to distributing health products until the last mile. The implementation of the strategic plan will be based on the following guiding principles:

- Equity in the distribution of medicines: the national supply system must be organized so that the distribution of health products can be done at all levels of the national territory
- Traceability, transparency and accountability: an information system will be set up to track drugs until they are used. Management tools must be well maintained and available for any supervision and audit. The information collected will be shared with the various actors in the supply system. The visibility of supply chain information will be ensured for all stakeholders
- Coordination of actors and activities: coordination will be ensured with all actors in the chain through the establishment of a supply chain committee
- Clear definition of the roles and responsibilities of each actor: each actor will evolve in the supply chain on the basis of a clear definition of their roles and responsibilities. The planned cartography will contribute to this visibility
- Involvement of all supply chain stakeholders: all actors in the supply chain will be involved in activities and access to reliable and timely information
- Integration of all health products: the single chain will work to gradually integrate all health products

Currently, the ONPPC is in charge of procurement and distribution of medical supplies as well as curtailing the sale of illegal drugs. A parastatal, ONPPC operates on a charter from the Government of Niger. ONPPC has two drug distribution systems: one for donor-funded commodities for high priority programs (e.g. TB, malaria, HIV/AIDS, family planning) and the second for other products donated or purchased by the government of Niger. Supplies are distributed through three ONPPC zonal warehouses to district depots and regional hospitals or directly to districts or regional depots utilizing a "pull" system based on requests by end users or "push" system (currently the case for malaria products). For donor-funded commodities, ONPPC set up a unit called the Special Management Unit (*Unite Gestion Spécifique)* who is in charge of managing all high priority program commodities from the reception at ONPPC to the delivery at the peripheral level.

From the district level, health facilities go to district depots to pick up their supplies by using any method they can find to get commodities, whether it is public transport or personal vehicle, motorbike or facilities ambulance. Due to their bulk, LLINs have their own distribution system outside ONPPC from central level to district and it is managed by Global Fund principal malaria recipient.

All medical services and products, including malaria drugs and commodities, are to be provided free to children under-five years of age and to pregnant women. Other adults and older children are charged fixed prices for medical services but donated commodities for high priorities program (e.g., TB, malaria and HIV/AIDS commodities) still remain free of charge.

PMI objective, in support of NMCP

PMI, other donors, and the NMCP agreed on the need for an integrated pharmaceutical management system and to support the implementation of the national strategic plan for the management of medical supplies. With FY2020 funding, PMI will implement the following activities

- Support to the MOH by providing on-the-job training and supervision of regional, district, and health facility staff on the reporting and use of malaria commodity data to better maintain appropriate stock levels at health facilities and improve stock and logistics information for malaria commodities
- Strengthen regional-level capacity to store and distribute malaria commodities, including outfitting district warehouses, and training regional and district health staff in the 2 PMI focus regions
- Support at the national level ONPPC, DPH/MT and NMCP in the areas of coordination, quantification, warehousing and distribution planning efforts, in addition to periodically assessing the use of malaria commodities via EUV and DQA
- Provide targeted supply chain strengthening support to the NMCP, including, but not limited to the quantification of commodities, reviewing the supply plans, and ensuring the quality of consumption data from the regions and districts

PMI-supported recent progress (past ~12-18 months)

PMI provided support to the PNLP and MSP for the following activities

- Support for the development of the strategic national supply chain plan 2019-2023
- Support the quantification of malaria commodities and development of a supply plan
- Acquisition and delivery of PMI's first ever commodities orders (ACT, RDT, LLINs, injectable Artesunate) in Niger. These products, along with those supplied by the Global Fund, have ensured a good availability of antimalarial commodities.
- Support to the ONPPC for the review of inventory management indicators at the central level
- Conducted data quality audit in December 2018 in Dosso and Tahoua regions. This audit highlighted good availability of stock management card in both regions, but the completeness

and accuracy of data was inadequate in facilities visited in Tahoua and not in those visited in Dosso.

- Conducted an EUV (April 2019) in 60 facilities in the regions of Dosso and Tahoua. Key observations show
  - 96.6 percent of facilities visited had an ACT (AL) to treat children under 5 years old with malaria, and these products were WHO prequalified. ACTs in the public health supply chain are sourced from the central level
  - Low rates of up-to-date stock management records (around 50 percent for most commodities) and other stock management challenges (e.g., stock cards were kept away from products and staff have little incentives on updating stock cards) were observed partly due to low levels of trained stock managers at the service delivery points.
  - Support the malaria commodities technical working group and conduct drug stock analysis and the revision of the supply plan
  - Support NMCP and ONPPC to conduct a spot check activity in the 5 districts and 10 health facilities in Niamey. This are the main findings of this activity
    - Inventory cards are not correctly filled and poorly archived
    - Poor storage conditions of commodities in health facilities (no pallets, no air conditioning)
    - Weakness in the ordering and supply process from CSI to district
- Support to an extensive data collection activity in Dosso and Tahoua regions to collect facility-level data as well as district and regional warehousing information with the use of a geographic information system survey and passive GPS trackers to provide maps of existing road networks as well as data regarding the condition and capacity of warehouses and health facilities. These models will guide decision-making and help determine the national supply chain strategy especially the distribution model to implement a pilot in 2020.

PMI-supported planned activities (next ~12-18 months, supported by currently available funds)

- Implement pilot phase of the last miles distribution strategy model for malaria products from regional level to CSI in the 2 PMI focus regions. This pilot is part of the national strategy of the MSP and will give elements of decision to the country to choose the most appropriate method to the context of Niger
- Support quantification exercise and quarterly revision of malaria commodities supply plans
- Conduct targeted formative supervision to monitor and coach the districts' technical management teams on the methodological approach for the distribution of commodities
- Support the ONPPC in the development of its strategic plan
- Support the DPHMT in the implementation of the LMIS and designing tools for logistics data analysis at regional and central level

- Assess the logistics system performance, PMI will support EUV survey exercise with a focus on the 2 PMI focus regions
- Track and report on the availability of malaria commodities through the Procurement, planning and monitoring report for malaria (PPMRm).
- Support quarterly meeting of malaria commodities technical committee to review stock data, revised supply plan. Supporting the more frequent meetings of the committee will promote ownership of the quantification process, procurement planning, and monitoring of coverage by the MOH under the direction of the DPH/MT

PMI Goal

Ensure continual availability of quality products needed for malaria control and elimination (ACTs, RDTs, SP, Art. Inj., and LLINs) at health facilities and community level.

Do you propose to increase, decrease, or maintain funding allocation levels for this activity? Why, and what data did you use to arrive at that conclusion?

Funding for this activity should be increased or maintained at this current level depending on availability of funds. PMI will continue to support commodities distribution, EUV survey in different regions, and formative supervision activities following the pilot implementation of the Logistics Management Information System (LMIS). Implementation of LMIS is very critical as it will help improving stock management and will allow collecting logistics data for decision making.

PMI will work closely with the MOH, Global Fund and other partners to advocate for more resources to provide a more affordable and sustainable response to the storage capacity issue enabling the country to move away from the currently costly rental of warehouses for ONPPC at the central level

Please see Table 2 for a detailed list of proposed activities with FY 2020 funding.

Key Question 1

Has the central level been stocked according to plan for ACTs, RDTs, SP and Art. Inj over the last year? If not stocked according to plan, have they been under, over or stocked out?

Supporting Data

Figure A49. Central Stock Level for ACTs

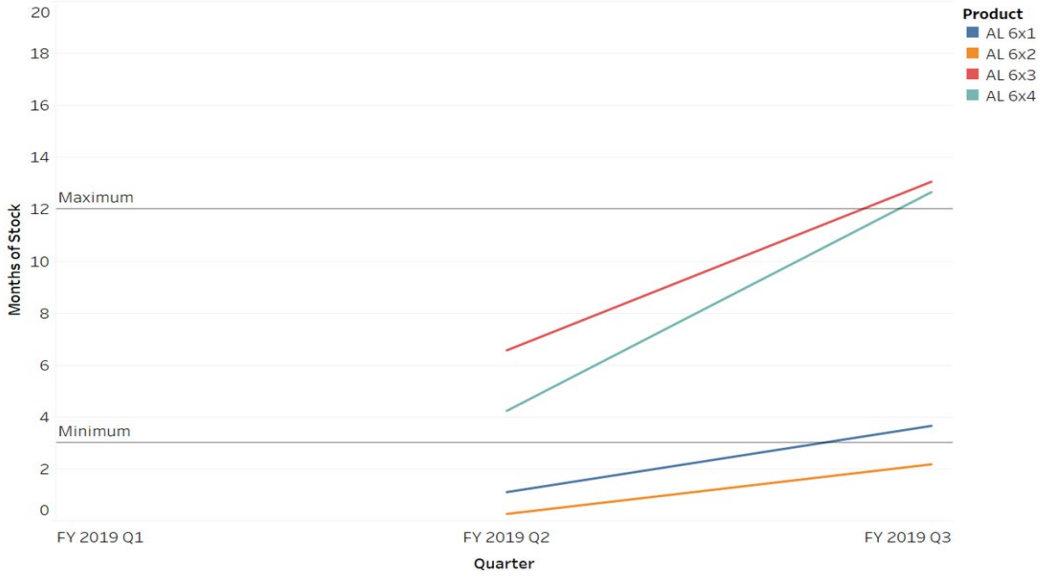
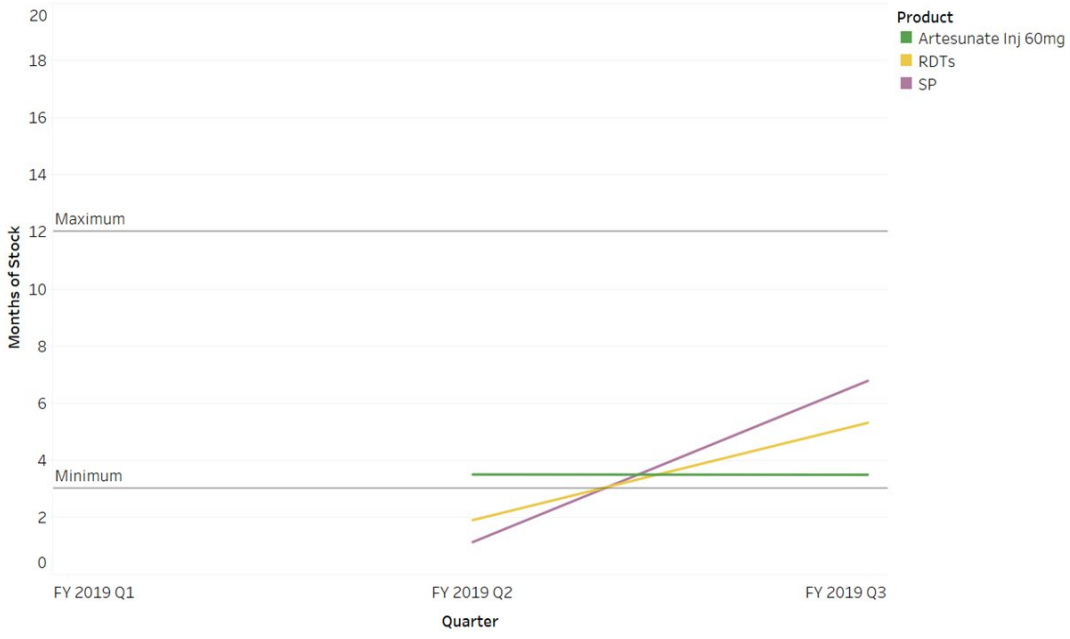


Figure A50. Central Level Stock for RDTs, SP, Injectable Artesunate 60mg



Conclusion

In 2018, malaria commodities (ACT, RDT, Artesunate inj, SP) were available all the time at the central level (at ONPPC warehouse) and no stock outs were reported. Except for ACTs, malaria products were stocked between the minimum of months of stock and maximum of 12 months of

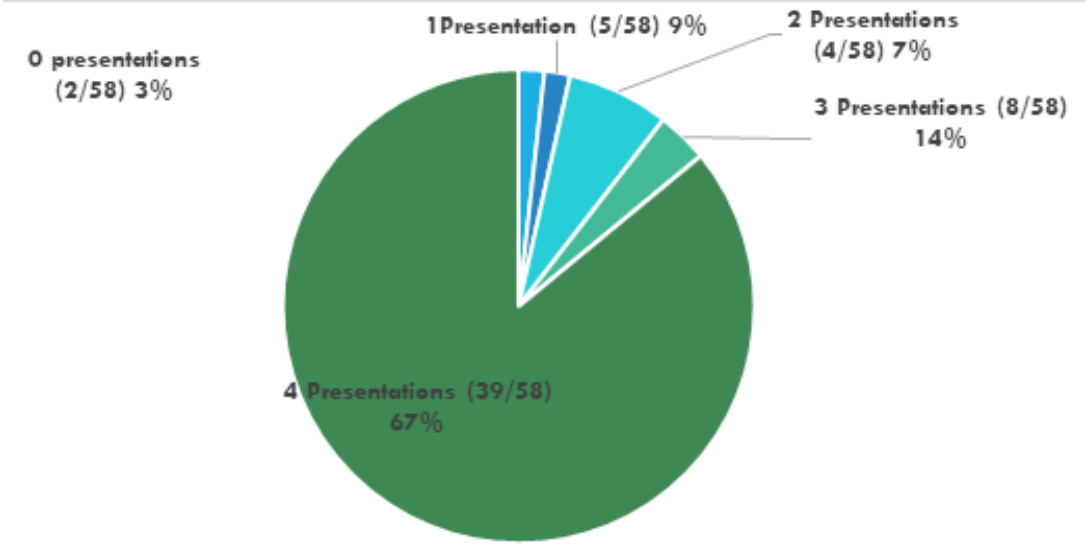
stock. Regarding ACT, data reported showed that AL is the only drug used for malaria treatment. AS/AQ was not available and not procured in 2018. While AL 6x2 and AL6x1 were understocked, AL6x3 and Al 6x4 were overstocked. PMI will continue to support monitoring of stock management, periodic review of supply plan in coordination with the NMCP and the Global Fund principal recipient to ensure commodities are stocked according to national plan.

Key Question 2

What are the trends in facility- and community health worker-level stock out rates for ACTs, RDTs and SP over the last year (if tracked)? Is there a seasonal or geographic difference in stock out rates?

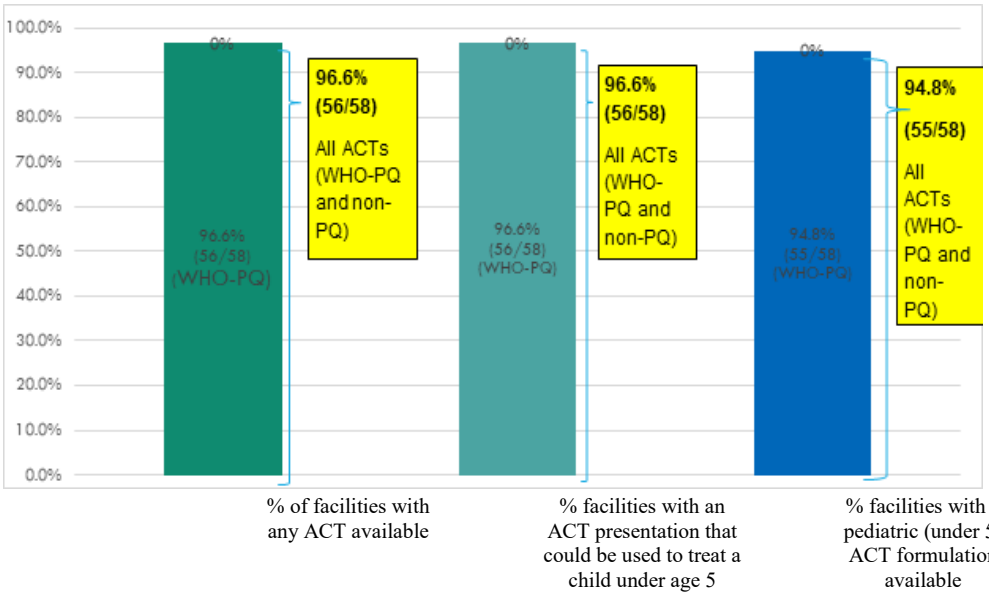
Supporting Data

Figure A51. ACT Index of Availability[43]



[43] EUV survey, 2019

Figure A52. ACT Index of Availability[44]



Conclusion

In April 2019, PMI through PSM conducted the first EUV survey for malaria commodities in 58 health facilities of the two regions of Tahoua and Dosso. At the time of the EUV, most health facilities had adequate stocks of ACT. PMI will continue to support the procurement and distribution of malaria commodities to ensure that stock levels remain adequate in our two focus regions.

Key Question 3

What is the difference between quantities for ACTs consumed and malaria cases, and RDTs consumed and numbers tested? What is driving any differences seen?

[44] EUV survey, 2019

Supporting Data

Figure A53. Comparison of HMIS and ACT consumption[45]

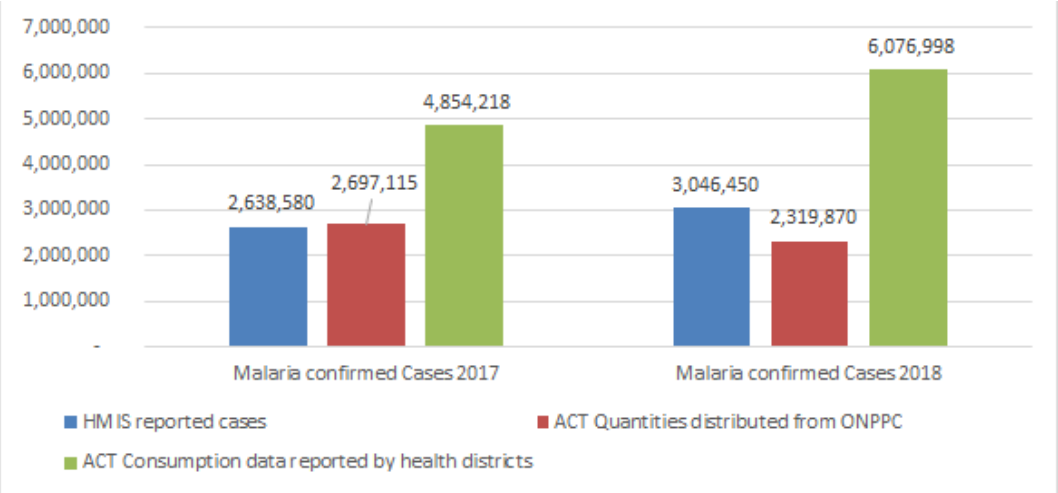
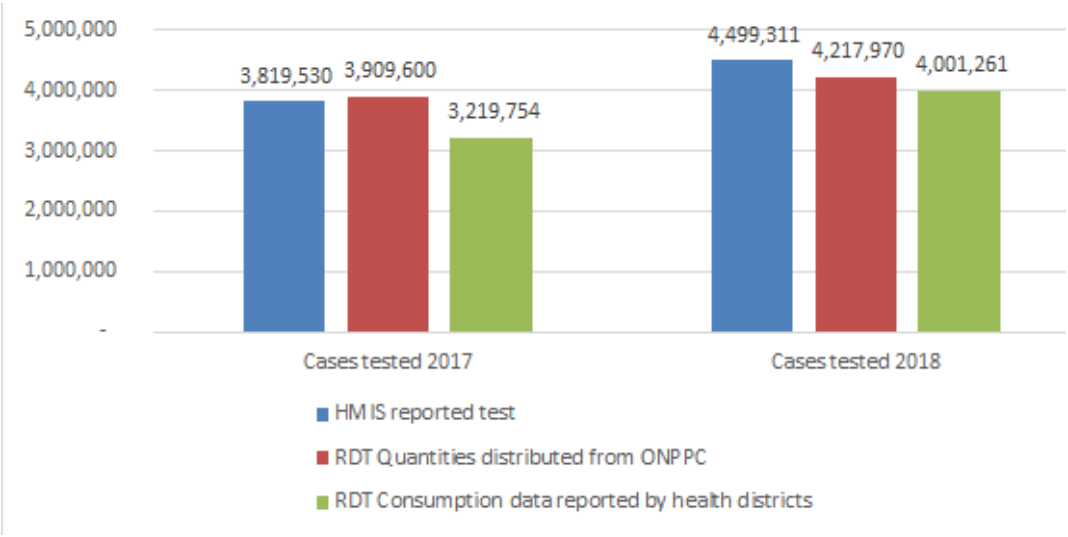


Figure A54. Comparison of HMIS and RDT Consumption 2017-2018[46]



Conclusion

Data presented in charts above, show a large discrepancy between HMIS data and ACT consumed as reported by facilities. However, when comparing ACT distribution data from central level to districts, HMIS data are much more closely aligned to the logistics data.

With a lack of strong reporting system of logistics data and a functional LMIS, consumption data reported by health facilities through districts are unfortunately not reliable and are inaccurate. Significant efforts are needed to improve the availability and quality of logistics data. PMI will

[45] Data from NMCP quarterly report 2017 and 2018
[46] Data from NMCP quarterly report 2017 and 2018

support implementation of LMIS and support formative supervision, logistics data quality check and analysis at national and regional level.

Key Question 4

What are the trends in LMIS reporting rates?

Supporting Data

Niger is - with support from PMI and other donors - in the process of introducing a paper-based LMIS system.

Conclusion

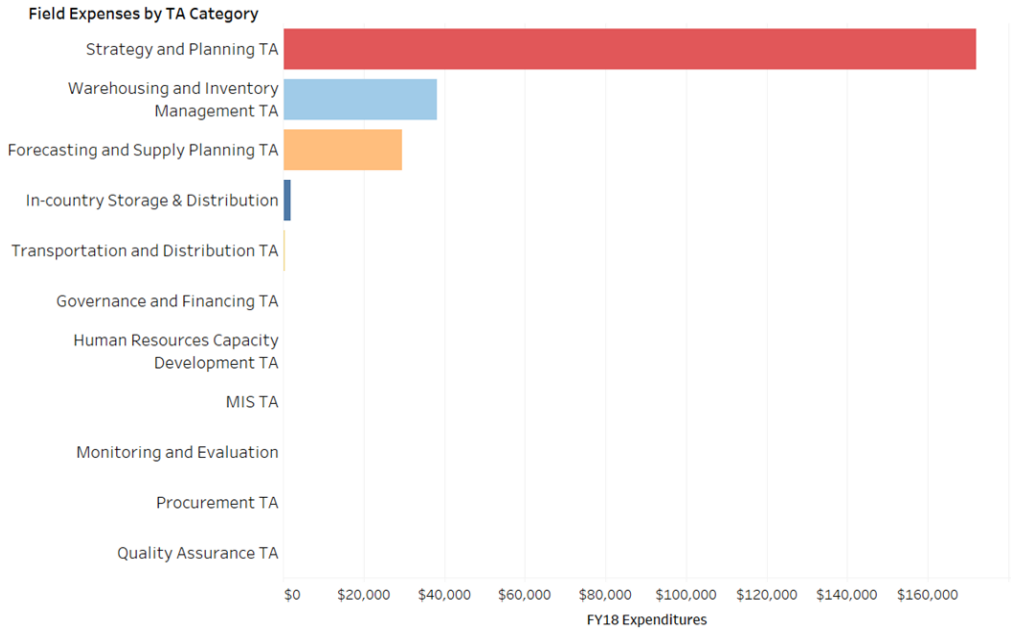
As the lack of accurate consumption data significantly affect the country's ability to correctly understand commodity needs, PMI will invest in the implementation of an LMIS.

Key Question 5

What are the main supply chain functions supported by PMI? For areas that are not as strong is there additional investment that PMI should make In areas performing well, is it dependent on PMI/donor funding and so should be maintained?

Supporting Data

Figure A55. FY18 Supply Chain Investments



Conclusion

From it starts in 2018, PMI focused its early efforts on the acquisition of commodities to ensure availability of malaria products (complementing procurements made by the Global Fund) while also providing technical assistance for forecasting and supply planning. Starting in 2020 PMI

will support the strengthening of the distribution system, storage capacity, availability and analysis of logistics data at central and regional level.

Key Question 6

What are the in-country that impact your funding allocation in this category?

Supporting Data

The PMI funding allocations are impacted by the fact that the country has a weak distribution system, but that several donors, PMI, Global Fund, UNFPA, World Bank, World Food Program and UNICEF, are committed to work together to improve the system. Critical activities that has to be supported are storage capacity and LMIS.

Conclusion

Because the availability and access to commodities is a crucial part to reach the PMI goals in Niger and due to the fact that the system is weak, it is crucial to keep or increase funding.

3.B. SURVEILLANCE, MONITORING & EVALUATION (SM&E)

NMCP objective

The overall objective of the NMCP's M&E Plan is to improve the malaria-related information system's ability to monitor outcomes and inform decisions. Specific objectives targeting all levels are to:

- Build M&E capacity of entities that implement malaria control and prevention activities
- Establish high-quality, integrated tools for data collection and monitoring and evaluation of
- malaria control interventions
- Establish a quality assurance system for malaria-related data
- Create a sound framework for strategic information on malaria
- Evaluate program performance at the end of the 2017-2021 Strategic Plan

NMCP approach

DHIS2 was officially launched in April 2017 and is now available in the majority of CSI. The NMCP's parallel malaria information system was discontinued in January 2019, in line with the decision of the MOH to remove all parallel data collection tools. Data collection starts with the Case de Santé (CS), and CHW who are submitting reports to the CSI. CSI are equipped and trained to enter routine HIS data into the DHIS 2 platform. The district, the regional office for planning and health information (*Service de Planification et de l'Information Sanitaire*, SPIS) and the NMCP analyze the data.

The priorities for the NMCP are to update the DHIS2 indicators, improve the quality of data collection, conduct analysis at all levels of the health system, and to regularly publish a malaria bulletin.

PMI objective, in support of NMCP

PMI seeks to improve the use of the data on national level through effective management of information and through strengthening of the NMCP's capacity in the areas of data analysis and results dissemination. In the 2 focus regions of Dosso and Tahoua, PMI will continue its support of the implementation of the DHIS2 platform, data analyses and use of data for decision making on regional and district level through technical assistance and the support of quarterly coordination meetings at each of the districts and bi-annual meetings on regional level.

An M&E technical advisor will be placed at the NMCP to provide technical assistance in close collaboration with other partners (PMI implementing partners, Global fund and WHO). Depending on the needs, PMI will also support the update of guidelines, materials and equipment at the national level and in its two focus regions.

PMI-supported recent progress (past ~12-18 months)

- Embedded an M&E resident advisor at the NMCP office (starting in April 2019) to provide direct technical assistance and implement priority activities approved in the FY18 work plan
- Developed a two-page HMIS country profile
- Conducted an assessment of the NMCP's SM&E institutional capacity assessment using the project's Monitoring and Evaluation Capacity Assessment Tool (MECAT)
- Assist the NMCP with creating the malaria surveillance, monitoring, and evaluation technical working group
- Supported the NMCP to conduct monthly analysis of malaria routine and surveillance data
- Reviewed and updated the existing data quality review manuals

PMI-supported planned activities (next ~12-18 months, supported by currently available funds)

- Provide continued technical support to the NMCP and DS
- Support the NMCP to convene quarterly malaria SM&E Technical Working Group meetings
- Train and support, in collaboration with the DS, the NCMP, regional and district health staff to use DHIS2 for data analysis and to assess data quality using the routine data quality assessment tool
- Assist the NMCP to conduct monthly analysis of malaria surveillance data for monitoring key indicators and data quality
- Support the NMCP to develop and disseminate a quarterly malaria bulletin

- Support monthly data review and quarterly coordination meetings at district and regional level in Dosso and Tahoua
- Provide technical support to other relevant malaria SME activities, as needed

PMI Goal

To support the NMCP to build their capacity to conduct surveillance as a core malaria intervention using high quality data from both surveys and routine health information systems.

Do you propose expanding, contracting, or changing any [insert intervention, e.g. LLIN] activities? If so, why and what data did you use to arrive at that conclusion?

The funding level will be maintained based on the fact that the surveillance, monitoring and evaluation systems are still weak and nascent in Niger. PMI main support is through an embedded technical advisor so there was no need to increase the funds at this point. Support for activities is decided in close collaboration with other donors, mainly Global Fund.

Please see Table 2 for a detailed list of proposed activities with FY 2020 funding.

Key Question 1

Which sources of data are available to inform estimates of intervention coverage, service availability and readiness, and morbidity and mortality?

Supporting Data

Figure A56. Data Sources and Data Collection Activities 2015 - 2023

Data Source	Data Collection Activities	Year								
		2015	2016	2017	2018	2019	2020	2021	2022	2023
Household Surveys	Demographic Health Survey (DHS)									
	Malaria Indicator Survey (MIS)						(x)			
	Multiple Indicator Cluster Survey (MICS)									
	EPI survey									
Health Facility Surveys	Service Provision Assessment (SPA)									

Data Source	Data Collection Activities	Year								
		2015	2016	2017	2018	2019	2020	2021	2022	2023
	Service Availability Readiness Assessment (SARA) survey	x*				x*				
	Other Health Facility Survey (Service Delivery Indicators (SDI) Survey)	x*								
Other Surveys	EUV					x	(x)	(x)	(x)	(x)
	School-based Malaria Survey									
	Other (Knowledge, Attitudes and Practices Survey, Malaria Behavior Survey)		x*		x*					
	Other (Malaria Impact Evaluation)						(x*)			
Malaria Surveillance and Routine System Support	Support to Parallel Malaria Surveillance System			x*	x					
	Support to HMIS			x*	x	x	(x)	(x)	(x)	(x)
	Support to Integrated Disease Surveillance and Response (IDSR)					x	(x)	(x)	(x)	(x)
	Other (Electronic Logistics Management Information System (eLMIS)							(x)	(x)	(x)
	Other (Malaria Rapid Reporting System)									

*Asterisk denotes non-PMI funded activities, x denotes completed activities and (x) denotes planned activities.

Conclusion

There is a limited availability of survey data partly due to limited local survey capacity and lack implementing partners. The data that are available are not widely available. The data from the DHS conducted in 2017 may not be used due to lack of reliability. PMI will support with FY 2020 funding a commonplace to store all the reports and data.

Key Question 2

What HMIS activities have been supported in your country? What current priorities will be supported with this MOP funding?

Supporting Data

Figure A57. HMIS-Supported Activities

Intervention	PMI-Funded? (X)			Does Global Fund plan to fund this? (X)	Does another donor plan to fund this? (X)
	FY 18	FY 19	FY 20		
Central Level					
Register, tools (e.g. checklists, indicator glossary), job aids (design, indicators, definition of data elements, data dictionary, system support)				X	X
Data quality assessments (separate from supervision – funding for travel to lower levels)		X	X	X	X
Program monitoring and technical assistance (funding for travel to lower levels)		X	X	X	
Training (funding for central level to conduct training at lower levels, capacity building, i.e. on the job training for central level staff)		X	X		
Human Resources (secondment of person in NMCP for SM&E, office/team for SM&E)		X	X	X	
Data Use (analysis, interpretation, visualization (dashboards, bulletins, dissemination/feedback to lower levels, decision-making)		X	X		
Policy guidelines and coordination (updating policies, guidelines, supporting sub-committee meetings, supporting participation in sub-committee meetings)		X	X	X	X
External relations/Communications/Outreach (support travel to international meetings and publications)		x	X	X	
Support to annual operational plans for national malaria program		X	X	X	X
Desk review to catch “logic errors system” (provide TA to catch logic errors)					
Admin 1 Level (Region/e). PMI supports activities in [2] regions while Global Fund supports activities in all regions.					
Registers (warehousing, printing, distribution)		X	X	X	X
Data quality assessments (separate from supervision – funding for travel to lower levels)		X	X	X	

Intervention	PMI-Funded? (X)			Does Global Fund plan to fund this? (X)	Does another donor plan to fund this? (X)
	FY 18	FY 19	FY 20		
Program monitoring and technical assistance (funding for travel to lower levels)		X	X	X	
Training (funding for district staff to conduct training at lower levels, capacity building (i.e. on the job training for district level staff)		X	X	X	
Human Resources (secondment of person for malaria SM&E, office/team for SM&E)		X	X	X	
Data Use (analysis, interpretation, visualization (dashboards, bulletins), dissemination/feedback to lower levels, decision-making)		X	X	X	
Adaptation of national policy guidelines and coordination (adapting policies, guidelines, supporting sub-committee meetings, supporting participation in sub-committee meetings)		X	X	X	
Adaptation of checklists and job-aides				X	
Participation in national meetings (support for travel costs)		X	X		X
Support to Annual Operational Plans for regional Malaria Program			X	X	X
Admin 2 Level (District)					
Data entry, summary, and transmission (training, re-training, computers, internet, tools)				X	X
Supervision (training, traveling, supervision tools/checklists, create/design system for organized/methodical supervision)			X	X	
Data validation (data validation activities before monthly data submission - organize health facilities)			X	X	
Monthly/Quarterly data quality review meetings (venue, meeting support)			X	X	
Data Use (analysis, interpretation, visualization (i.e. dashboards), dissemination/feedback to facilities, decision-making)			X		
Human Resources (secondment of person for malaria SM&E, office/team for SM&E)					
Annual planning with region (support travel)			X	X	X

Intervention	PMI-Funded? (X)			Does Global Fund plan to fund this? (X)	Does another donor plan to fund this? (X)
	FY 18	FY 19	FY 20		
Facility Level					
Data collection/entry, summary, and transmission (training, re-training, computers, internet, tools)				X	X
Supervision of CHWs (training, traveling, administering supervision tools/checklists of community health workers)			X	X	
Data use (analysis, interpretation, visualization (dashboards), dissemination/feedback to CHWs, decision-making)					
Monthly/Quarterly data quality review meetings(support for travel)			X	X	
Community Level					
Data collection/entry and transmission (training, re-training, tools					
Data use (analysis, interpretation, decision-making)					
Monthly/quarterly data quality review meetings (support for travel)			X	X	X

Conclusion

PMI will continue to improve data collection, quality and analyses.

Key Question 3

What are the outcomes of HMIS strengthening efforts?

Supporting Data

Figure A58. HMIS Strengthening Efforts, 2017-2018

		2017 [47]	2018 [48]
Timeliness	% of reports received on time	70.5%	81.9%
Completeness	"Confirmed malaria cases for children under 5 years of age" was reported in X% of facility[49]-months	100%	100%

[47] NMCP quarterly report, 2017

[48] NMCP quarterly report, 2018

[49] Facility data not available, so replaced by district data

		2017 47	2018 48
Accuracy	Populate with most recent DQA data		0.91

Conclusion

PMI only started the HMIS strengthening efforts in 2019, so no there are no measurable outcomes yet to be noted. Timeliness of reporting is only presented by health facilities in the annual reports of 2017 and 2018 (not needed after the introduction of DHIS2).

Key Question 4

What are the in-country considerations that impact your funding allocation in this category?

Supporting Data

The funding level depends on the available funding, the low in-country capacity and the support from Global Fund for DHIS2.

Conclusion

The health information system is weak and need resources (e.g., time, human resources and internet) to be able to produce reliable data.

3.C. SOCIAL AND BEHAVIORAL CHANGE (SBC)

NMCP Objective

The NMCP's SBC and communication objectives as outlined in the NMSP:

- At least 80 percent of the population are aware of the major signs and interventions to prevent malaria
- At least 80 percent practicing correct malaria prevention and treatment measures
- The harmonization and coordination of information, education, and communication (IEC) and behavior change communication (BCC) activities at all level
- The development and execution of an integrated communication plan

NMCP Approach

To achieve the above objectives, the NMSP calls for:

- Formative research on the determinants of health behaviors, the profile of target groups, and the most important channels of communication
- Integrated communication campaigns which combine promotion, social mobilization, interpersonal messaging, and behavior change
- Special events especially during the high transmission seasons (e.g., World Malaria Day)

- National and rural radio programs, television spots, and print materials that are adapted to the local context
- Community participation and leadership of communication activities, the training of community health agents in BCC/IEC, and the sensitization of local leaders
- Sensitization of school children about malaria and using them to disseminate key messages

With support from Global Fund, the NMCP supported advocacy, individual and community-focused behavior change, partner coordination, and capacity building activities such as organizing Malaria Control Weeks and National Malaria Day activities, promotion spots on local radios in different languages, information dissemination by community health worker for LLIN and SMC campaigns.

The NMCP with support from PMI - validated in 2019 an updated strategy, behavior, and communication plan. The new strategy promotes:

- Use of LLINs
- Prompt treatment seeking for fevers
- Early and regular attendance by pregnant women of ANC services
- Compliance with the second and third doses for all four rounds of SMC

PMI Objective in Support of NMCP

Under the guidance of the NMCP and in coordination with the Global Fund and other donors, PMI provides technical assistance and other support at the central level for the national rollout of the new Malaria SBC strategy. The design of SBC interventions and messages will be informed by data and will include messages on uptake of IPTp, promoting distribution of LLINs during first ANC and EPI visits, use of LLIN, encouraging communities to participate in SMC, promoting early initiative of ANC through community-level activities, and promoting health seeking behavior. PMI will also support the NMCP to coordinate a national SBC stakeholder committee, to engage globally with the RBM SBCC working group, and will support Niger's National Week for Malaria Social Mobilization, and World Malaria Day. PMI does not support the environmental objectives of the SBC strategy.

PMI-Supported Recent Progress *(Past 12-18 Months)*

PMI provided support to the NMCP for the following activities

- Training of 105 individuals from 23 organizations in coordination with other USAID funded mechanism. These capacity-building trainings focused on leadership in strategic communication strategy development, qualitative network analysis, and knowledge management.
- Supported the national SBC coordination committee
- Supported the revision and validation of the national malaria SBC strategy
- Facilitating a message harmonization workshop
- Train and motivate NMCP officials to contribute updates to the newly created NMCP website

PMI-Supported Planned Activities *(Next 12-18 Months Supported by Currently Available Funds)*

- Disseminate the new national malaria SBC strategy
- Produce and disseminate the messages resulting from the message harmonization workshop
- Update the NMCP website
- Develop five-day curriculum to inform school children on malaria prevention
- Partner with community radio stations to write, produce, and plan broadcast of radio programming for malaria prevention and control.
- Support NMCP activities for World Malaria Day

PMI Goal

Through the use of social and behavior change interventions and in alignment with a country's national malaria control communication strategy, PMI supports the uptake and correct and consistent use of malaria interventions, thereby improving the overall quality of malaria control efforts that will contribute to reductions in malaria morbidity and mortality.

Do you propose expanding, contracting, or changing any [insert intervention, e.g. LLIN] activities? If so, why and what data did you use to arrive at that conclusion?

We do not propose any change in the level of funding.

Please see Table 2 for a detailed list of proposed activities with FY 2020 funding.

Key Question 1

What behaviors is PMI proposing to prioritize through its SBC programming? Will support be geographically targeted or at national scale? What data support this prioritization?

Supporting Data

PMI will prioritize national scale capacity building that ensures the NMCP and partners are able to better address behaviors related to LLIN use and care, prompt-care seeking for fever, and early and regular ANC care attendance. The recently completed Net-Map analysis revealed a number of ways Niger's malaria communication network could be streamlined, strengthened, and less centrally focused. PMI will work to connect central-level malaria communication actors with their regional and community-level colleagues. This will involve working with different levels of the ministry of health, as well as international and local non-government organizations to ensure that all are following the guidance and processes included in the newly revised malaria SBC strategy, that regional, district, and community-level actors are increasingly engaged and enabled to become stronger malaria advocates at each level, and encouraging non-government

partners to work more closely with government and local community structures when planning, implementing, and evaluating malaria communication activities.

Figure A59. SBC Programming to Support PMI Priority Behaviors

Behavior	Target Population	Geographic Focus	Justification
LLIN use and care	Heads of household	National	The LLIN Use:Access Ratio is very poor, ranging from 0.23 in Tahoua to 0.66 in Niamey[50]
Prompt care-seeking for fever	Caregivers of children under 5 years of age	National	Mortality rate among children still high and parents need to be encouraged to seek care at a health facility, where available
Early and frequent antenatal attendance	Women of reproductive age	National	• The percentage of women attending ANC during their first trimester is low • IPTp 3 and 4 rates remain suboptimal, suggesting that while women in Niger are willing to attend ANC, they do not present early enough to receive maximum coverage.

Conclusion

Given the poor ITN Use to Access Ratio, SBC for nets is a high priority as well as addressing the suboptimal ANC attendance and IPTP3 and 4 rates. While many barriers to care seeking exist and are being addressed through case management and supply chain interventions, SBC efforts will help with demand generation and counter negative perceptions of CSIs.

Key Question 2

Given the priority behaviors identified, what data are available to better understand the factors influencing low uptake? What are the behavioral determinants of the prioritized behaviors? Are there gaps in understanding the barriers to uptake?

Supporting Data

Currently, there is a lack of data to identify the behavioral determinants of low uptake -- noting that the main reasons for the low uptake are related to access and availability of services. In collaboration with NMCP, it is decided to not use the FY 2020 funds for research on this topic, but to prioritize first the availability of services and commodities, including the distribution of SBC messages.

[50] DHS, 2012

Figure A60. Key Barriers and Facilitators to Uptake

Behavior	Key Facilitators	Key Barriers	Knowledge Gaps
Prompt care-seeking for fever	Positive attitudes among community members and caregivers towards *relais*	• Poor access to care among febrile individuals due to lack of transportation • Negative perceptions of CSIs	What social norms exist around seeking care for young children?
LLIN use and care	Nets are made available through EPI and ANC	Negative attitudes toward nets	• Why only 55% of women are receiving nets at first ANC visit • Lack of data to describe ITN use during the high transmission season
Early and frequent antenatal attendance	Social support from husbands	Availability of services	• Reasons for the gap between ANC attendance and IPTp • How to encourage first trimester visits when cultural beliefs encourage keeping pregnancies secret • Why women do not attend ANC more frequently

Key Question 3

What activities are needed to bolster the country's capacity for SBC? Are these activities needed at the national or sub-national level?

Supporting Data

The national level the NMCP's IEC unit would benefit from organizational capacity building and at the sub-national level regional, communicators should be more involved in the design, implementation, monitoring, and evaluation of SBC activities. To achieve this, establishing stronger links and mechanisms of support for sub-national government and non-government partners working in malaria SBC will be necessary.

Conclusion

PMI will continue to support building the capacity of the IEC unit and the strengthening of coordination of SBC and communications at the national and regional level. PMI also support the national MOH SBC working group.

Key Question 4

What are the in-country considerations that impact your funding allocation in this category?

Supporting Data

The PMI funding allocations are impacted by the fact that the needs and demand for funding are higher than the available funds.

Conclusion

The need in Niger to provide services and commodities is so high that the priority is first to provide the services demanded by the population and local authorities, and ensuring that the population is aware of the free services provided by the health facilities through basic SBC messaging.

3.D. PROGRAM EVALUATION AND OPERATIONAL RESEARCH

NMCP objective
The Niger MSP's goal for operational research is to support the documentation of good practices and successful experiences. The MSP states strategic information on malaria will be obtained from the analysis of routine HMIS data, sentinel surveillance and/or annual or periodic assessments. Studies will be carried out in collaboration with research centers and institutes in the framework of a partnership with the NMCP on priority areas of research related to entomological and epidemiological aspects, case management, use of measures preventive measures (ITNs, IRS, IPTs, and SMC), population behavior and efficacy of insecticides and antimalarials.
NMCP approach
The NMCP has very specific request for program evaluations such as the evaluation of the iImpact of the SMC campaign, increasing the age of SMC, coverage and KAP survey for LLIN, define the parasite load and species in Agadez (low transmission area) and actualization of the malaria risk map. The NMCP is very engaged in 'zero palu' and for this reason, want to show proof of concept in one village through implementing all control and prevention measures in one village to showcase that 'no death due to malaria' is possible in Niger. NMCP also would like to implement quality control of the commodities at arrival in the country and after several months in the field.
PMI objective, in support of NMCP
PMI will not support research with FY2020 funding as this is not a priority at this time. Through the residents from Niger that are currently enrolled in the West African Field Epidemiology training program, certain projects will be conducted such as the evaluation of malaria surveillance system and the transmission in Agadez. Global Fund will support the updating of the risk mapping by January 2020.
PMI-supported recent progress (past ~12-18 months)
No activities until this date.

PMI-supported planned activities (next ~12-18 months, supported by currently available funds)
No activities planned.

PMI Goal
If funding is available, PMI will conduct OR/PE that helps: to evaluate coverage of population at-risk, quality of intervention(s), and efficiency in intervention delivery, or study reducing remaining malaria transmission and disease burden, test effectiveness of new or evolved priority interventions and strategies, or explore new metrics and mechanisms to assess the impact of interventions. Please see Table 2 for a detailed list of proposed activities with FY 2020 funding.

Do you propose expanding, contracting, or changing any [insert intervention, e.g. LLIN] activities? If so, why and what data did you use to arrive at that conclusion?
No interventions are planned for FY2020 funds due to prioritization in collaboration with NMCP and partners of the PMI FY2020 funds.

Key Question 1

Have technical challenges or operational bottlenecks that require operations research or program evaluation been identified in consultation with the NMCP? How have they been prioritized?

Supporting Data

Figure A61. PE/OR Currently Conducted in Country with USG, Global Fund, Multilaterals or Other Major Donors.

Source of Funding	Implementing institution	Research Question/Topic	Current status/ timeline
International Innovation Fund	*Médecins Sans Frontières*, and Ministry of Health of Niger	Efficacy of ACTs for the treatment of uncomplicated malaria in Maradi, Niger	Completed

Conclusion

No OR is proposed

3.E. OTHER HEALTH SYSTEMS STRENGTHENING

NMCP objective
The MOH calls for the universal and equitable access of quality health services by the population, including an integrated community health system. The government of Niger has endorsed a compact

with development partners, which outlines a process for working collaboratively in the health sector. In addition, the MOH has designed a National Health Development Plan supported by a sector-wide approach to harmonize and align donor funds with national budget allocations.

NMCP approach

The National Malaria Strategy calls for case management of malaria at the household level delivered by community health volunteers. Ideally, this approach would be part of an integrated iCCM intervention package focused on malaria, pneumonia, diarrhea, and malnutrition, and supported by SBC communication interventions. The community health approach is a key strategy to reach the 50 percent of the population without ready access to health facilities in the country. The MOH's emphasis on SBC will also help address the low perceived demand for mother and child health services.

PMI objective, in support of NMCP Infrastructure

With FY 2020 funding, PMI will continue its support of

- Strengthening quantification methods and supply chains for essential malaria
- commodities
- Expanding the availability of key health services by building networks of trained
- community health workers to implement ICCM
- Improving the quality of facility-based health services, including capacity for effective
- malaria diagnosis and treatment
- Building skilled capacity for entomological monitoring
- Support the implementation of DHIS2 and LMIS
- Strengthening the capacity of NMCP staff, regional malaria focus person and district level staff that collect the malaria data and coordinate the malaria activities in the 2 PMI focus area to collect quality data, to use data for decision making, to make reports among other useful skills through 3-month Field Epidemiology Training Program
- Since 2015, USAID has supported a long-term technical advisor embedded in the NMCP to help build capacity in management, leadership and governance. The advisor has helped the NMCP improve its capability across a range of areas, including program management, training, quantification, monitoring and evaluation, and donor coordination. In 2018, PMI assessed the organizational capacity of the NMCP to coordinate the implementation, oversight, and monitoring of their strategic plan to achieve set objectives and goals for malaria control. In 2019, a consultant implement the conclusions over a period of five months.

PMI-supported recent progress (past ~12-18 months)
All the progress made is already reported in the sections above.
PMI-supported planned activities (next ~12-18 months, supported by currently available funds)
Launch the frontline FETP program in collaboration with Global Fund and WHO. The frontline FETP will be implemented by the epidemiology and surveillance division of the MOH (DSRE). This division is currently engaged in the regional advanced FETP program. The frontline FETP program will be managed by FETP graduates. PMI will support the development of chronogram, adaptation of the training materials, training of trainers and the implementation of the first 2 cohorts of 50 MOH staff from the NMCP and the 2 PMI focus regions (e.g. data managers, district medical doctors .The training materials developed by CDC will be adapted to the context and will include malaria examples. PMI is working with GF to support a long time consultant who would support the FETP program which will be endorsed by WHO Niger. Over a period of five months, a consultant will implement part of the recommendations of the organizational assessment of the NMCP, supported by PMI. The other recommendations will be addressed by a Global Fund supported consultant.

PMI Goal
PMI/Niger seeks to continue to strengthen the human and institutional capacity of the NMCP and other key malaria stakeholders in Niger.

Key Question 1

N.B. As there is not a specific pre-defined goal and objective for this section on program infrastructure, this can be an open question that is included by the MOP team. One possible example is to consider infrastructure support that would address emergencies or infrastructure support that engages FETP or Peace Corps programs.

Supporting Data

See above.

Conclusion

No additional infrastructural issues to report.

Key Question 2

What are the in-country considerations that impact your funding allocation in this category?

Supporting Data

The PMI funding allocations are impacted by the fact that needs and demand for funding are higher than the available funds.

Conclusion

PMI will continue to collaborate with other donors such as Global Fund for better coordination of our jointly effort to strengthen malaria program capacity, in country supply chain system, and data management.

ANNEX B: COUNTRY PROGRAM INVENTORY

The MOP seeks to facilitate a consultative, collaborative process between PMI, the NMCP, and other partners, where relevant. This section outlines a high-level program inventory along key intervention areas, and is intended to structure discussions around the relative strengths and challenges facing a program, as well as prioritization and opportunities to drive catalytic impact with specific investments.

Key:

Example score

Figure B1. Category: Vector Control

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
Entomological Monitoring	Insecticide Resistance monitoring	No insecticide resistance monitoring conducted	Limited insecticide resistance monitoring conducted on an ad-hoc basis	Insecticide Resistance monitoring conducted on an annual basis in a limited number of sites, not covering all administrative units. Occasional monitoring of molecular mechanisms	Insecticide resistance monitoring conducted in a greater number of sites on an annual basis with some collaboration with other partners, routine monitoring of some resistance mechanisms	Regular high quality insecticide resistance monitoring done in multiple sites per administrative division, consideration of molecular mechanisms and bioassay data, collaboration with other partners and NMCP
	Insectary	No functioning insectaries in country	Insectary present, but frequent ruptures in rearing and contamination of strains, frequent challenges in meeting needs	Insectary present, full-time staff present, some capacity for strain verification, sometimes challenges to get enough mosquitoes, occasional contamination	One or more insectary present, regular verification, rare challenges in getting sufficient mosquitoes, some capacity for strain verification	Highly functioning insectaries with verification of strains, capacity for rearing wild strains, quality controls in place
	Data-based vector control decision making	No consideration of entomological data when making decisions	Limited review of data, reliance on outdated data, uncoordinated analysis of data with limited collaboration with partners	Irregular and incomplete review of data from multiple partners, sometimes in collaboration with research and funding partners	Collaborative but irregular review of entomological data, sometimes providing timely evidence for decisions	Collaborative regular review of entomological data from multiple sources when making decisions about vector control
	Vector bionomics monitoring or research	No research or longitudinal monitoring done in country	Limited longitudinal monitoring and research done in country	Regular vector bionomics monitoring and vector control research done in country, but generally not having an important role in decision making	Regular vector bionomics and vector control research conducted in country but not sufficient to respond to all major needs of the national program	Regular monitoring driven by program priorities conducted alongside research done in country to provide timely data on the best malaria vector control

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
	Institutionalization of funding	No resources	Only supported by external partners, no host government funding	Some host country government funding	>50% funded by host country government	Fully funded by host country government
ITNs	Consistent distribution channels, in accordance with national strategy	Infrequent campaigns with no continuous distribution	Regular (e.g., every 3 years) campaigns, no continuous distribution	Regular campaigns, inconsistent continuous distribution	Regular campaigns, plus at least 1 well- managed continuous distribution channel	Regular, well- executed campaigns and well-managed continuous distribution channels
	Regular supervision of routine ITN distribution (e.g. HFs)	No HFs regularly supervised in ITN distribution	0-25% of HFs regularly supervised in ITN distribution	25-50% of HFs regularly supervised in ITN distribution	50-75% of HFs regularly supervised in ITN distribution	75-100% of HFs regularly supervised in ITN distribution
	ITN distribution reporting capabilities	Quantities of ITNs distributed not reported at all into LMIS (or other system)	Some quantities of ITNs distributed reported routinely	Some quantities of ITNs distributed reported routinely but cannot be disaggregated by channel	Quantities of ITNs distributed reported routinely and disaggregated by channel	All ITNs distributed captured routinely, disaggregated, and reported electronically
	Capacity to use data to appropriately target and rotate new types of nets	N/A	No capacity	Limited capacity	Some capacity	Good capacity
IRS	Host country government's IRS implementation capacity	N/A, no host country government implemented spray campaign	Host country government has very limited capacity to implement minor aspects of spray campaign	Host country government has capacity to implement some aspects of spray campaign	Host country government has capacity to implement most aspects of spray campaign	Host country government implements independent spray campaign
	Institutionalization of funding	N/A, no IRS conducted in country	No host country government funding, only supported by external sources (e.g. PMI, GF, mining companies)	Limited host country government funding in addition to external sources	>50% funded by host country government in addition to external sources	Fully funded by host country government, no external sources

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
	Coverage of Government-Implemented Spray Campaign	N/A, no government-implemented spray campaign	Spray coverage not reported	85+% coverage in some government-sprayed areas	85+% coverage in most government-sprayed areas	85+% coverage in all government-sprayed areas

Figure B2. Category: Case Management

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
Community-based CM, if in national strategy	Coverage of CHWs trained in and providing CM (geographic or numerical target)	No CHWs conducting CM	0-25% of national target met	25-50% of national target met	50-75% of national target met	75-100% of national target met
	Regular supervision of CHWs in CM (regular defined as per national QA/QC guidelines)	No CHWs regularly supervised in CM	0-25% of CHWs regularly supervised in CM	25-50% of CHWs regularly supervised in CM	50-75% of CHWs regularly supervised in CM	75-100% of CHWs regularly supervised in CM
	CHW reporting capabilities	CHW-managed cases not reported into HMIS	Some CHW-managed cases routinely reported into HMIS	Cases routinely reported into HMIS but cannot be disaggregated from HF-reported cases	Cases routinely reported into HMIS and can be disaggregated from HF-reported cases	All CHW case data routinely captured and reported electronically
	Institutionalization of funding (salaries and/or other support)	No resources	Only supported by external partners, no host government funding	Some host country government funding	>50% funded by host country government	Fully funded by host country government
Facility based CM	Access to HF-based care (within 5 km of a health facility or as per national definition)	0-20% of population has access to HF	20-40% of population has access to HF	40-60% of population has access to HF	60-80% of population has access to HF	>80% of population has access to HF
	Regular* supervision of public HFs in CM	No HFs regularly supervised in CM	0-25% of HFs regularly supervised in CM	25-50% of HFs regularly supervised in CM	50-75% of HFs regularly supervised in CM	75-100% of HFs regularly supervised in CM
	Drug resistance monitoring	No TES performed in last 3 years	TES performed in last 3 years but results not available	Recent TES results available (within last 3 years) but no training in molecular testing	Recent TES results available (within last 3 years) and in-country staff trained in molecular testing	Recent TES results available (within last 3 years) and in-country capability for molecular testing

Figure B3. Category: Drug-Based Prevention

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
SMC (where applicable)	Geographic scope	No eligible districts receiving SMC		50% eligible districts receiving SMC		All eligible districts receiving SMC
	Coverage in targeted areas (% of eligible children 3-59 months who received complete SMC courses for all 4 rounds)	<60%	60-69%	70-79%	80-89%	90%+
	Institutionalization of funding	No resources	Only supported by external partners, no host government funding	Some host country government funding	>50% funded by host country government	Fully funded by host country government
MIP	National policy exists for malaria prevention in pregnancy	No policy	Policy exists but is not comprehensive (does not cover all aspects of MIP: ITN, IPTp and case management)	Comprehensive policy exists for prevention (ITNs, IPTp) and case management but not all WHO recommendations are included	Policy meets current WHO recommended MIP prevention	Comprehensive, WHO-aligned policy is actively implemented
	Country policy adoption/adaptation of ANC guidelines with at least 4 recommended contacts	No policy	Country has started discussions and consultations for adopting the new ANC guidelines and recommendations	Country has policy specifying ANC contacts but no provision for early delivery of IPTp and is not able to systematically track ANC visits in HMIS	Country policy specifies ANC contacts and has provision for delivery of IPTp at 13-16 weeks but can not track all ANC visits in HMIS	Country policy specifies the number of contacts be delivered during pregnancy and has a provision for delivery of IPTp at 13-16 weeks and is able to track ANC visits in HMIS.

	National MIP working group established and coordinating effectively	No working group established	Working group formed and meets on an ad hoc basis, TORs are established	Working group engages in regular coordination but does not have mechanisms to ensure programmatic integration across technical areas	Working group coordinates at the national level only with Malaria and Maternal Health and has limited mechanisms for ensuring programmatic integration across technical areas	Working group engages in regular coordination at national and sub-national level with Malaria and Maternal Health and has mechanisms to ensure programmatic integration across technical areas.
	Supportive MIP supervision conducted	No HFs regularly supervised in MIP	0-25% of HFs regularly supervised in MIP	25-50% of HFs regularly supervised in MIP	50-75% of HFs regularly supervised in MIP	75-100% of HFs regularly supervised in MIP
	Routine SP resistance monitoring via biomarkers conducted	No SP resistance monitoring conducted	SP resistance monitoring conducted in the last 6-10 years	SP resistance monitoring conducted in the last year 4-5 years	SP resistance monitoring conducted in the last year 3 years	SP resistance monitoring conducted in the last 3 years and results published or being published.

Figure B4. Category: Supply Chain

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
Supply Chain	Forecasting and Procurement Planning	Ad hoc forecasting based on poor, inadequate, or inaccessible data Insufficient skills for selecting and implementing appropriate forecasting methodologies. Procurement plans are not developed from forecasts No coordination among procurers	Annual forecasting and supply planning done but is based on poor, inadequate, or inaccessible data Locally based skills in quantification are developing Review of procurement plans is irregular. Coordination among procurers is limited	Annual forecasts incorporate service and/or/consumption data Supply plans updated semi-annually and incorporate review/revisions of available funding Coordinated procurement planning done at the national level (and regional level, if the health system is decentralized) and among procurers	Semi-annual forecasts incorporate service and/or/consumption data, account for seasonality Supply plans updated quarterly and incorporate review/revisions of available funding Coordinated procurement planning done at the national level (and regional level, if the health system is decentralized). Identified commodity gaps effectively communicated to stakeholders for purposes of resource mobilization	Near real-time demand/consumption, enhanced with additional programmatic contributions, drives monthly forecasting Forecasting and supply planning-specific software used and outputs visible across networks. Supply plans updated monthly and incorporate review/revisions of available funding Coordinated procurement planning done at the national level (and regional level, if the health system is decentralized). Identified commodity gaps effectively communicated to stakeholders for purposes of resource mobilization. Outputs shared through global platforms

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
	Warehousing/ Storage	Quality of infrastructure and operations at all stock holding levels (Central, Sub-central/facility) compromises ability to ensure commodities are adequately protected from damage, deterioration and loss. Unable to locate stock by batch in central/mid-level stores/warehouses.	Quality of infrastructure and operations in at least one stock holding level (Central, Sub-central/facility) ensures that commodities are adequately protected from damage, deterioration and loss. Paper-based inventory management system. No SOPs.	Quality of infrastructure and operations in at least two stock holding levels (Central, Sub-central/SDP) ensures that commodities are adequately protected from damage, deterioration and loss. Warehousing SOPs exist. Able to track inventory level with central level WMS but information is not routinely shared across warehouses. Some maintenance occurring Limited ability to scale storage capacity	Quality of infrastructure and operations at all stock holding levels (Central, Sub-central/SDP) ensures that commodities are adequately protected from damage, deterioration and loss Stock data is digitized in at least two stock holding levels Some routine maintenance occurring Storage capacity scaled through contracting of third party logistics providers (3PLs)	Quality of infrastructure and operations at all stock holding levels (Central, Sub-central/SDP) ensures that commodities are adequately protected from damage, deterioration and loss. Storage infrastructure and operations adhere to Good Warehousing Practices an/ or meet in-country compliance standards Stock data is digitized at all stock holding levels and near real-time stock visibility available across networks Routine and predictive maintenance budgeted for and institutionalized Storage capacity is logically located and can be effectively scaled with 3PLs

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
	Routine distribution/ resupply between stock holding levels	No routine requisition and resupply schedule between stock holding levels No resources routinely available and allocated for transportation from higher to lower stock holding levels	Routine requisition and resupply between at least two stock holding levels according to a schedule Resources for transportation from higher to lower stock holding levels provided on ad hoc basis	Routine resupply between all stock holding levels according to a schedule Allocated resources for transportation from higher to lower stock holding levels provided on an irregular basis and resupply often achieved through unplanned means Resupply performance monitored post-activity	Routine resupply between all stock holding levels according to a schedule shared with all levels and informed by accurate demand signals Allocated resources for transportation provided on a regular basis and augmented with 3PLs Resupply performance monitored real-time	Routine resupply between all stock holding levels according to a schedule shared with all levels and informed by accurate, timely, demand signals Robust emergency and inter-facility resupply mechanisms are in place Allocated resources for transportation available internally or outsourced with 3PLs. Resupply transaction data is digitized for all stock transfers Near real-time visibility into upstream and downstream activities Resupply operations adhere to GDP and or meet in-country compliance standards for maintaining quality during distribution

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
	Logistics Management Information System	System to aggregate, analyze, validate and display data (from all levels of the logistics system) that can be used to make logistics decisions and manage the supply chain not institutionalized or followed No facility level records or not maintained. Low reporting rates. No visibility into CHW supplies. No visibility by central level on facilities and none by facility level on central level.	Stand-alone, program specific LMIS processes and structures defined but no formal or ongoing monitoring or measurement protocol exists. Some visibility of facility level inventory and consumption, low reporting rates, mostly paper-based	The country has documented LMIS processes and structures. The structures are functional. Metrics for performance monitoring, quality improvement, and evaluation are systematically used. Migration of data collection and reporting from a paper system to an electronic system at the district level and above. A documented mechanism is in place for maintaining data quality throughout the data supply chain.	Government and stakeholders use the national LMIS systems for key performance monitoring and follow standard practices. Facility inventory and consumption data is digital at facility level, upstream data available to facilities, System alerts for low stock/expiry, use of master product list and master facility list Interoperability with other information systems (e.g., warehouse management, medical records, laboratory management, enterprise resource planning systems, and health information management systems)	Near real time visibility into inventory and consumption data at all levels, data from multiple systems feed into common platform/control tower (automated process), predictive analytics. The government and stakeholders routinely review interoperability activities and modify them to adapt to changing conditions. Compliance with standards for data exchange, messaging, and security is regularly reviewed. The regulatory framework is reviewed and updated to reflect best practices for data exchange, messaging, and systems security.
	Regulatory, Policy and Governance	Legal basis to enable a medicines (and related health commodities - e.g., devices, vaccines, etc.) regulatory agency to function is absent or inappropriate	Medicines framework exists and is sufficient to support basic regulatory functions including clinical dossier review (licensing) and	All SDP levels have in place policies that address STG, quality assurance and HR. Management policies for the supply chain system are in place at the MOH level.	Strong policy and strategic leadership by government, with firm grasp of budgets and financial sustainability Robust implementation plans, and supportive supervision, capacity building and guidance	The MOH leads strategic functions such as, policy formulation, quality assurance and overseeing the funds required for policy implementation. Ability to ensure product quality, automated drug

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
		Formal organizational structure regarding in-country stakeholders and relevant agencies to whom authority is delegated, is absent or inadequate (e.g., up-to-date organogram of MOH). Human and financial capacity to enable regulatory functionality, weak or absent No approved supply chain strategic plan	marketing authorization with registration. Documented domestic financial support to enable regulatory activities - including human resources Approved supply chain strategic plan but not updated recently. Poorly implemented strategic plan	Policy and strategic leadership is not always translated into robust implementation plans, and supportive supervision, capacity building and guidance to managers within the system. No consistent approach to pharmacovigilance or a standard reporting structure for pharmacovigilance events Overall quality management system in place to support interface of product licensing, registration, manufacturing, post-marketing surveillance. Approved (and up to date) supply chain strategic plan. Partially implemented	to managers within the system. Regulatory and policy bodies in alignment to support quality product availability National and standardized Pharmacovigilance or a standard reporting structure for pharmacovigilance events in place, not fully functional. Approved (and up to date) supply chain strategic plan (contains clear roles and responsibilities, stakeholder mapping, costs).	registration process, clear/transparent importation process, robust post-market surveillance system and, track and trace regulations developed and/or in the process of implementation. Approved (and up to date) supply chain strategic plan (contains clear roles and responsibilities, stakeholder mapping, costs). Includes risk mitigation plan.

Figure B5. Category: Strategic Information

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
Data, Surveillance, Monitoring & Evaluation	Overall HMIS reporting rate (CY 2018)	<60%	60-69%	70-79%	80-89%	90%+
	Element specific reporting rate: "Confirmed malaria cases among children under 5" (CY 2018)	<60%	60-69%	70-79%	80-89%	90%+
	HMIS data quality assurance and quality control	Few standards exist for data collection, assembly, & analysis. Data quality reviews and audits are ad hoc for specific data needs. No data-quality assurance plan and national coordinating body exist.	Standards used for data collection, assembly & analysis in limited settings. Some electronic tools used for data quality review and audit. Data-quality assurance plan is available.	Standards defined and implemented for data collection, assembly, analysis, and used nationally. Data quality reviews and audits scheduled and include a remediation process to address identified issues. SM&E staff are seconded to NMCP	Data reviews and audits are integrated in strategic plans, conducted on a regular schedule. Regular meetings held by national data-quality governing body; issues identified are addressed through an established remediation process.	Continuous review and auditing through automated and manual processes, to ensure defined levels of data quality. Data quality metrics are used for continuous improvement. The data-quality assurance plan is reviewed periodically by a national coordinating body and appropriate stakeholders.

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
	Reporting Systems	Data collection tools are not standard and procedures are not consistently followed; data are collected and stored in an unstructured format. NMCP does not have access to malaria data from HMIS.	Data systems support longitudinal health data (clinical, surveillance, M&E) in limited settings. The data are available for centrally mandated reporting. A parallel malaria reporting system may exist.	Most data platforms/applications ensure data availability at all levels for decision support and M&E for authorized users. No parallel malaria reporting system exists. NMCP has access to malaria data from HMIS.	The data systems in use ensure reliable and appropriate access to data at all levels for authorized users. Changes in reporting requirements are accommodated with minimal disruption to data availability. Data systems support secondary use of data and NMCP has access.	Data availability is monitored for continuous improvements and to meet emerging health sector needs. Reporting is available from private facilities and community-level providers and can be disaggregated.
	Data collection	Data collection is not done at the most peripheral level (CHWs) and is irregular and inaccurate at rural and more central health facilities. System is entirely paper based, but registers may be absent	Data collection is well managed at HF level, but incomplete at community level (CHWs); most collection is paper based and aggregation is paper based; registers generally available; timeliness and completeness remain challenges	Data collection is well managed at HF level and at community level (CHWs); most collection is paper based, aggregation is electronic; registers available; timeliness and completeness >80%, feedback to collectors limited	Data collection at all levels); collection is electronic and sometimes paper based, aggregation is electronic; registers include all program-critical data; timeliness and completeness >80%, feedback to collectors is standardized	Data collection occurs at all levels, is transmitted in real time with timely feedback to those collecting and those using the data; data checks exist at point of collection; electronic transmission is the norm, including to data collectors

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
	Data use	Activities (analysis, interpretation, visualization) to ensure data use are rarely implemented	Limited data use activities are implemented (bulletin has been developed but analysis and interpretation for decision- making needs to be strengthened)	Country conducts regular data use activities (review meetings, bulletin at least quarterly, at least at the central level).	Country conducts regular data use activities at all levels (review meetings, bulletins, dashboard at least quarterly).	Country has developed their own high- quality dashboard to facilitate data use, and data-informed decision making is evident at all levels, on a frequent basis.
OR/PE	PMI in-country OR experience	No previous PMI OR experience in country	PMI team has prepared concept notes (CNs) but has not completed protocols or conducted OR	PMI team has completed protocols and received approval for OR; studies in planning, underway, or recently completed	PMI team and/or other country partners have completed a OR study and prepared and shared reports	Multiple OR studies completed in country that address malaria program implementation bottlenecks with publication and sharing of results, with involvement from MOH co-investigators
	Country mechanisms for OR/PE review	No in-country process for research review, determination or IRB processes	Limited in-country processes for research review, determination and IRB oversight	Processes in place for research and IRB review with federal-wide assurance approval; no previous PMI in-country OR experience	Processes in place for research and IRB review with federal-wide assurance approval; previous PMI in-country OR experience	Full complement of research review, approval, oversight processes including data safety and monitoring boards and systems for results sharing
	In-country partnerships for OR	No in-country partners (academic, NGO, or other) with OR experience	1-2 in-country partners with OR experience, but no malaria specific experience	3+ in-country partners with OR experience; 1+ with some malaria expertise; no current PMI-linked OR work	3+ in-country partners with OR experience; 1+ with malaria expertise; current or recent work with PMI OR	Multiple in-country partners with specific malaria experience in PMI OR, including completed past work and reporting on malaria OR

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
	Conceptualization of problems needing scientific evaluation	No experience	Some but limited experience in identifying programmatic problems and prioritization	Experience with identifying program problems and prioritizing PE and OR	Experience with identifying problems needing PE or OR and developing study approaches with partners	Extensive experience with problem identification, prioritization, proposal development and conducting PE or OR

Figure B6. Category: Support Systems

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
SBC	National Malaria SBCC Strategy used to guide design and implementation of malaria SBC activities	No strategy exists.	Strategy exists but there is no evidence that it has been used to guide design or implementation.	Strategy exists and is used from time-to-time to guide design and implementation, but is of poor quality and does not include any of the key elements identified in the RBM SBCC Working Group National Malaria SBCC Strategy Template.	Strategy is used from time-to-time to guide design and implementation, but lacks alignment with the broader National Malaria Strategy and only incorporates a couple of the key elements identified in the RBM SBCC Working Group National Malaria SBCC Strategy Template.	Strategy is well aligned with the broader National Malaria Strategy, includes the key elements identified in the RBM SBCC Working Group National Malaria SBCC Strategy Template, and is used to guide design and implementation.
	SBC Technical Working Group coordinates effectively	No technical working group exists.	The SBC Technical Working Group exists on paper, but has not been operationalized.	The SBC Technical Working Group has significant resource and staffing gaps and does not have clear pathways for coordination.	The SBC Technical Working Group lacks some needed resources/staff and generally only coordinates at the national level only.	The SBC Technical Working Group is well resourced and staffed and engages in regular coordination at both the national and sub-national level.
	High-quality formative assessments used to inform intervention design	No high-quality, formative assessment conducted in the last five years.	Formative assessment conducted, but significant quality issues in the design and no evidence that data was used to inform intervention design.	High-quality, formative assessment conducted, but no evidence that data was used to inform intervention design.	Data from prior projects used exclusively to guide intervention design; no new data collected.	High-quality, formative assessment conducted, and data used to inform intervention design.

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
Elim (relevant only for countries actively pursuing elimination	Elimination planning to implementation	No elimination or pre-elimination targets in the national strategic plan	Risk stratification conducted using latest incidence data and interventions targeted	Readiness assessment/ capacity inventory conducted	Capacity built and systems in place to initiate elimination activities	Elimination activities implemented fully in targeted areas
	Surveillance system readiness to track all cases	Monthly, aggregate data from public sector only	At least monthly, aggregate data from public, private, and community levels	Case-based reporting initiated	Real-time, case-based surveillance inclusive of all sectors and levels in targeted areas	Real-time, case-based reporting and response activities implemented
Additional Health Systems Strengthening	Staffing	No staff	Manager and a few technical staff; not all intervention areas are covered	Manager and technical staff for each intervention area; many staff have limited training and experience ; limited program support staff	Full staffing of program areas and support systems but some staff need further training to optimize their effectiveness; limited plans and opportunities for such training	Fully staffed with personnel with relevant training and experience; complete plan for professional development
	Office space, transport	No office space or transport	Office space exists but is insufficient for staff; Transport available at intervals but limited for program needs	Office space adequate for current staff but no growth possible; office not well positioned for access to MOH leadership. Transport available but not covering all needs and not well managed/maintained	Office space adequate for current staff and some technical areas (e.g., lab) but not fully adequate for growth and all technical services. Transport covers most needs.	Office space is fully adequate for current staff and technical needs (lab, insectary, meeting space, etc.) and some growth and well positioned in the MOH; Transport is fully available for needed purposes -- trucks and 4-wheel drive vehicles where needed - all maintained and managed.

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
	Internet connectivity	No Internet connectivity	Intermittent connectivity; poor bandwidth; challenging maintenance; very little budget	Mostly connected with some outages; ok but not ideal bandwidth; irregular maintenance; modest budget	Generally stable connections, adequate bandwidth for most work, fair to good maintenance and sufficient budget	Fully connected, maintained, good bandwidth for all needs, and sufficient budget including all needed hardware and software
	NMCP placement within Ministry of Health	NMCP exists but is barely visible in the MOH structure	NMCP is visible in the MOH structure but NMCP manager reports to supervisor who is still low in the MOH system	NMCP is visible and manager reports to high level leader in MOH (e.g., Director of Public Health or Permanent Secretary for Health)	NMCP (or NMEP) is highly visible and reports at a high level in MOH and has some access to other ministry leadership (e.g., education, agriculture, community development)	NMCP (or NMEP) is highly visible within MOH and with all other relevant ministries and has ready access to country leadership (e.g., the president/prime minister; and parliament)