

PMI

U.S. PRESIDENT'S MALARIA INITIATIVE

LED BY



USAID
FROM THE AMERICAN PEOPLE



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

COTE D'IVOIRE

Malaria Operational Plan FY 2020

Suggested Citation:

U.S. President's Malaria Initiative Côte d'Ivoire Malaria Operational Plan FY 2020

Retrieved from www.pmi.gov

TABLE OF CONTENTS

ABBREVIATIONS	4
I. INTRODUCTION	6
II. MALARIA SITUATION AND MALARIA CONTROL PROGRESS IN COTE D’IVOIRE	9
III. OVERVIEW OF PMI’S SUPPORT OF COTE D’IVOIRE’S MALARIA CONTROL STRATEGY	12
IV. PARTNER FUNDING LANDSCAPE	14
V. ACTIVITIES TO BE SUPPORTED WITH FY 2020 FUNDING	19
ANNEX A: INTERVENTION-SPECIFIC DATA	20
1. VECTOR CONTROL	20
1.A. ENTOMOLOGICAL MONITORING	22
1.B. INSECTICIDE-TREATED NETS (ITNs)	28
1.C. INDOOR RESIDUAL SPRAYING (IRS)	35
VI. 2. HUMAN HEALTH	39
2.A CASE MANAGEMENT in health facilities and communities	39
2.B. DRUG-BASED PREVENTION	53
2.B.i MALARIA PREVENTION IN PREGNANCY (MIP)	55
VII. 3. CROSS-CUTTING AND OTHER HEALTH SYSTEMS	61
3.A. SUPPLY CHAIN	61
3.B. SURVEILLANCE, MONITORING & EVALUATION (SM&E)	69
3.C. SOCIAL AND BEHAVIORAL CHANGE (SBC)	77
3.D. PROGRAM EVALUATION AND OPERATIONAL RESEARCH	82
3.E. OTHER HEALTH SYSTEMS STRENGTHENING	85
ANNEX B: COUNTRY PROGRAM INVENTORY	87

ABBREVIATIONS

ACPCI	<i>Association des cliniques privées de Côte d'Ivoire</i> (Association of Private Health Clinics in Côte d'Ivoire)
ACT	Artemisinin-based combination therapy
AL	Artemether-lumefantrine
ANC	Antenatal care
AS/AQ	Artesunate-amodiaquine
BMGF	Bill and Melinda Gates Foundation
CDC	Centers for Disease Control and Prevention
CNCAM	National Commission for Coordination and Management of Pharmaceuticals and Health Commodities
CY	Calendar year
DHS	Demographic and Health Survey
DIIS	<i>Direction de l'Informatique et de l'Information Sanitaire</i> (Directorate of IT and Health Information)
EPI	Expanded program of immunization
FY	Fiscal year
GHI	Global Health Initiative
Global Fund	Global Fund to Fight AIDS, Tuberculosis and Malaria
GOCI	Government of Côte d'Ivoire
GSA	<i>Groupe Scientifique d'appui</i> (Scientific Advisory Council)
HMIS	Health Management Information System
iCCM	Integrated community case management
IPTp	Intermittent preventive treatment for pregnant women
IRS	Indoor residual spraying
ITN	Insecticide-treated mosquito net
LMIS	Logistics management information system
LNSP	<i>Laboratoire National de la Santé Publique</i> (National Public Health Laboratory)
MSHP	<i>Ministère de la Santé et de l'Hygiène Publique</i> (Department of Health and Public Hygiene)
MICS	Multiple Indicator Cluster Survey
MIP	Malaria in pregnancy
MBS	Malaria Behavior Survey
MIS	Malaria Indicator Survey
MOH	Ministry of Health
MOP	Malaria Operational Plan
NMCP	National Malaria Control Program
NMSP	National Malaria Strategic Plan
NPSP	<i>Nouvelle Pharmacie de Santé Publique</i> (Central Medical Store)
PMI	U.S. President's Malaria Initiative

PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PNDAP	<i>Programme National de Développement de l'activité pharmaceutique</i> (National Pharmaceutical Agency)
RASS	<i>Rapport Annuel sur la Situation Santé</i> (Annual Health Situation Report)
RDT	Rapid diagnostic test
SBC	Social and behavior change
SM&E	Surveillance, monitoring, and evaluation
SP	Sulfadoxine/pyrimethamine
SYNMEPCI	<i>Syndicat National des Médecins Privés de Côte d'Ivoire</i>
TES	Therapeutic efficacy study
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 Côte d'Ivoire to end malaria. PMI has been a proud partner of Côte d'Ivoire since fiscal year (FY) 2017, providing investments totaling almost \$75 million through FY 2019.

The proposed PMI FY 2020 budget for Côte d'Ivoire is \$25 million. This Malaria Operational Plan (MOP) outlines planned PMI activities in Côte d'Ivoire 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 of Côte d'Ivoire as well as other donors and partners.

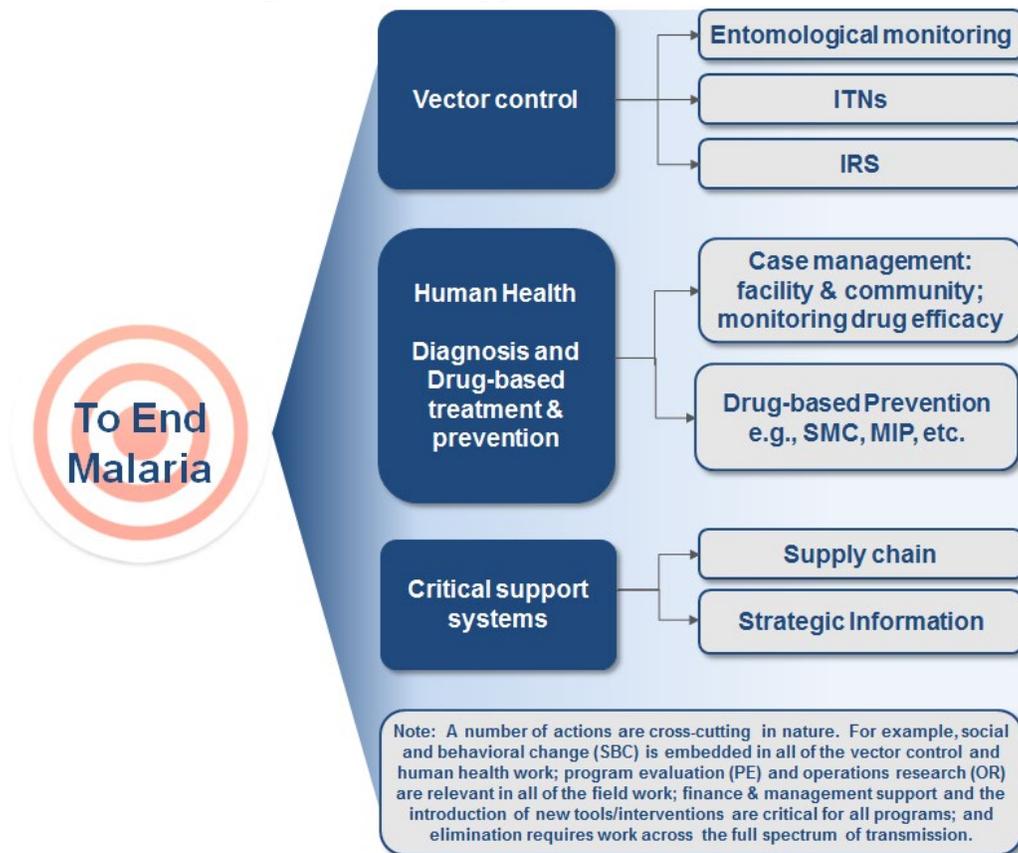
Côte d'Ivoire at a glance

- **Geography:** Côte d'Ivoire is located in West Africa on the Gulf of Guinea (Atlantic Ocean). Its surface area is 322,463 km². The country borders Ghana to the east, Burkina Faso and Mali to the north, and Guinea and Liberia to the west.
- **Climate:** Côte d'Ivoire has a tropical climate with four seasons in the coastal and central regions and two seasons in the northern savannah region. The northern region has a long dry season from November to May and a wet season from June to October. The coastal and central regions have:
 - a long dry season from December to May
 - a long rainy season from May to July
 - a short dry season from July to October, and
 - a short rainy season from October to November.
- **Population in 2019:** The total population of Côte d'Ivoire is 22,671,331 inhabitants according to the 2014 General Population and Housing Census (RGPH) and was estimated at 24,571,046 inhabitants in 2017. The annual population growth was 2.6% in 2014 (RGPH 2014).
- **Population at risk of malaria:** 100% (RASS 2017)
- **Malaria incidence per 1000 population:** The incidence of malaria increased from 154.6 in 2016 to 164.1 in 2017 (RASS 2017)
- **Under-five mortality rate (per 1000 live births):** 96 (RASS 2017)

- **World Bank Income Classification & GDP:** Côte d'Ivoire is a lower middle income country with a GDP per capita of \$1,715.53 (WB 2018)
- **Political system:** Côte d'Ivoire is a constitutional republic and boasts a stable government and multi-partisan political system. However, the country has been dealing with conflict surrounding the 2010 presidential election, and partners are monitoring for signs of tension as the October 2020 election approaches.
- **Trafficking in Persons designations, 2016-2018:** According to the 2019 Trafficking in Persons Report, Côte d'Ivoire is considered a Tier 2 country
- **Malaria funding and program support partners include (but are not limited to):**
 - Global Fund to Fight AIDS, Tuberculosis and Malaria (GF)
 - U.S. President's Malaria Initiative (PMI)
 - World Health Organization (WHO)
 - United Nations Children's Fund (UNICEF)
- **PMI Support of National Malaria Control Strategy:** PMI will support the NMCP to implement their national strategic plan aimed at reducing the burden of malaria in Côte d'Ivoire. PMI will prioritize investments across key proven interventions including vector control, malaria in pregnancy, and case management, and will provide support to strengthen key aspects of the health system including supply chain logistics, drug quality monitoring and regulation, surveillance, monitoring and evaluation, and social and behavior change. Consistent with PMI guidance, PMI will not provide support for larviciding or epidemiologic sentinel surveillance, both components of the NMCP's current strategy. (See III. Overview of PMI's support of Côte d'Ivoire's Malaria Control Strategy for additional details)
- **PMI Investments:** Côte d'Ivoire began implementation as a PMI focus country in FY 2018. The proposed FY 2020 PMI budget for Côte d'Ivoire is \$25 million; that brings the total PMI investment to nearly \$100 million [total including FY 2020 \$25 million investment]

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



PMI’s approach is both consistent with and contributes to USAID’s Journey to Self-Reliance framework. Building and strengthening the capacity of Côte d’Ivoire’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. PMI/Côte d’Ivoire will continue to rely on and engage with partners such as local NGOs and local governmental institutions and is expanding its local partner base to include community health care providers and women’s groups. Finally, PMI/Côte d’Ivoire will continue to rely on private sector partnerships such as associations of private service providers and faith-based clinics such as ACPCI (*Association des Cliniques Privées de Côte d’Ivoire*) and SYNMEPCI (*Syndicat National des Médecins Privés de Côte d’Ivoire*).

To accelerate the journey to self-reliance, PMI developed a programmatic inventory to assess the strengths and persistent challenges of Côte d’Ivoire’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 Côte d’Ivoire is capable of fully financing its

development priorities, PMI will work with other partners (e.g., the Global Fund) to jointly track the country's funding commitments across the malaria portfolio.

II. MALARIA SITUATION AND MALARIA CONTROL PROGRESS IN COTE D'IVOIRE

Malaria is endemic in Côte d'Ivoire and the entire population is at risk of contracting the disease. Pregnant women and children under the age of five have the greatest risk of developing severe malaria. Transmission occurs in all regions of the country and throughout the year with peak incidence in April to July. Progress in malaria prevention and control has stagnated in recent years with the overall incidence in the general population increasing from 154.6 per 1000 in 2016 to 164.1 in 2017. For 2017, the incidence in children under five years of age was 281.4 per 1000, which represented a slight decrease from 286.9 in 2016. In 2017, there were 3,886 malaria related deaths reported. *Plasmodium falciparum* accounts for 98 to 99 percent of malaria cases in Côte d'Ivoire. The main vectors are *Anopheles gambiae* s.s., *An. coluzzii*, and *An. funestus* s.s. The resistance level of the major vector, *Anopheles gambiae* s.l., to the insecticides used to impregnate mosquito nets is significant throughout the country and ranges from 39 to 95 percent for permethrin, 75 to 100 percent for deltamethrin, and 50 to 100 percent for alpha-cypermethrin in study areas.

Figure 2. Trends in Malaria Prevalence, Percent of Children Age 6-59 Months who Tested Positive for Malaria by Microscopy and RDT

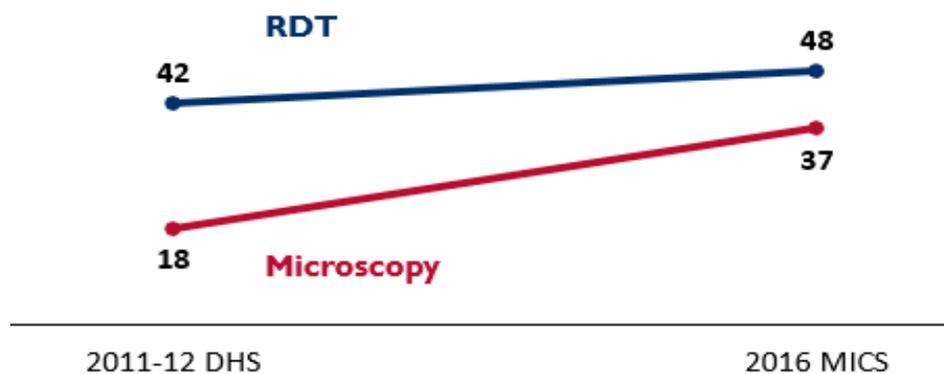


Figure 3. Trends in Prevalence of Low Hemoglobin, *Percent of Children Age 6-59 Months with Moderate-to-Severe Anemia (Hemoglobin <8.0 g/dl)*

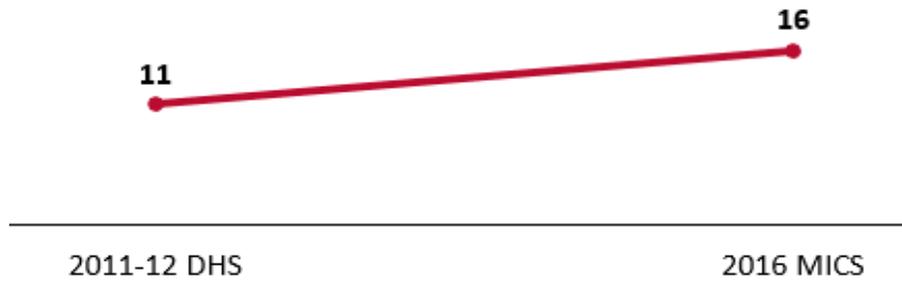


Figure 4. Malaria Parasite Prevalence among Children Under Five Years of Age by Region, *Percent of Children Age 6-59 Months who Tested Positive for Malaria by Microscopy (2016 MICS)*

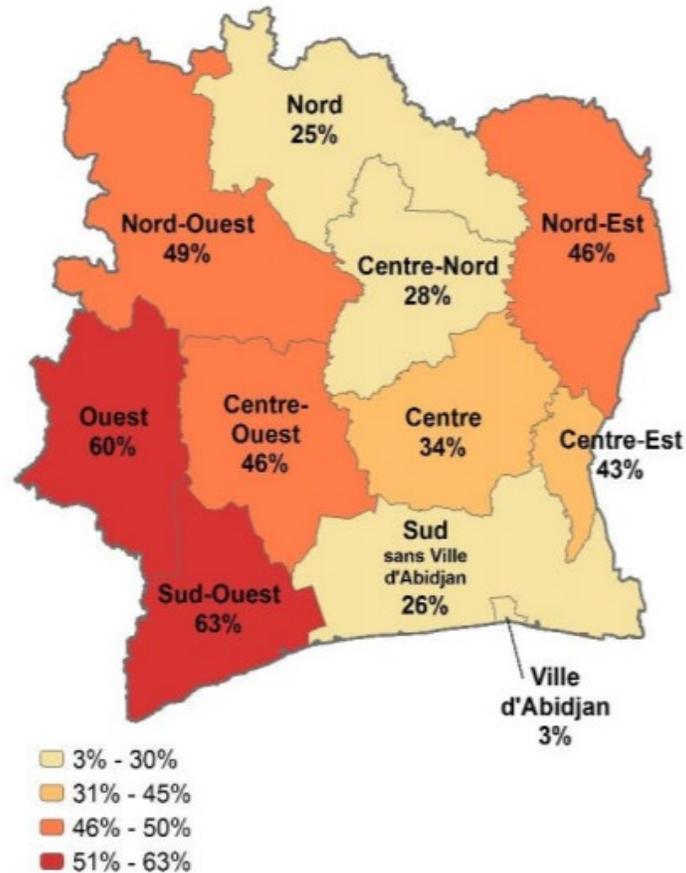


Figure 5. Key Indicators for Malaria Prevention and Treatment Coverage and Impact Indicators from Demographic Health Surveys (DHS) and Malaria Indicator Surveys (MIS) from 2011/12-2018.

Indicator	2011-12 DHS	2016 MICS
% Households with at least one ITN	67	76
% Households with at least one ITN for every two people		47
% Population with access to an ITN	49	64
% Population that slept under an ITN the previous night	33	51
% Children under five years old who slept under an ITN the previous night	37	60
% Pregnant women who slept under an ITN the previous night	40	53
% Children under five years old with fever in the last two weeks for whom advice or treatment was sought ¹	43	45
% Children under five years old with fever in the last two weeks who had a finger or heel stick	11	26
% Children receiving an ACT among children under five years old with fever in the last two weeks who received any antimalarial drugs	26	64
% Women who received two or more doses of IPTp during their last pregnancy in the last two years ²	20	47
% Women who received three or more doses of IPTp during their last pregnancy in the last two years ²	7	23
Under-five mortality rate per 1,000 live births	108	96
% Children under five years old with parasitemia (by microscopy , if done)	18	37*
% Children under five years old with parasitemia (by RDT , if done)	42	48*
% Children under five years old with severe anemia (Hb<8gm/dl)	11	16*

¹Note that this indicator has been recalculated according to the newest definition, care or treatment from any source excluding traditional practitioners wherever possible

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

*Indicator taken from anemia and malaria prevalence supplement to the 2016 MICS. Note that the fieldwork for this supplement was conducted during the high transmission season, unlike the 2011-12 DHS.

Figure 6. Evolution of Key Malaria Indicators Reported through Routine Surveillance Systems

Indicator	2014	2015	2016	2017	2018
# Suspect malaria cases ¹	6,465,161	6,479,785	6,697, 983	7,738,590	7,132,456
# Patients receiving diagnostic test for malaria ²	5,474,165	5,713,981	5,938,366	6,791, 674	6,189,431
Total # malaria cases³ (confirmed and presumed)	3,712,831	3,375,904	3,471,024	5,153,387	4,777,299
# Confirmed cases ⁴	3,712,831	3,375,904	3,471,024	4,596,689	4,571,344
# Presumed cases ⁵	N/A	N/A	N/A	556,689	205,955
% Malaria cases confirmed ⁶	100%	100%	100%	89%	96%
Test positivity rate (TPR) ⁷	68%	59%	58%	68%	74%
Total # <5 malaria cases⁸	1,643,869	1,035,682	894,982	2,128,047	2,126, 440
% Cases under 5 ⁹	44%	31%	26%	46%	47%
Total # severe cases¹⁰	N/A	N/A	N/A	6,112	75 540
Total # malaria deaths¹¹	4,069	4,413	3,340	3,222	3,013
# Facilities reporting ¹²	2,091	2,100	2,216	2,243	2,337
Data form completeness (%) ¹³	98%	99%	99%	100%	99%

Data sources and comments: DHS2 data provided by NMCP

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 (TPR): 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)

¹⁰ As there may not be a standard definition across countries, please specify if there is such a variable available and the definition that is used; if “severe malaria” is not used or collected but “hospitalized for malaria” is a standard in the country, please insert that label and the relevant data by year.

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 COTE D’IVOIRE’S MALARIA CONTROL STRATEGY

The National Malaria Control Program (NMCP) in Côte d’Ivoire was established in 1996. The current national strategic plan, *Plan Strategique National de Lutte Contre le Paludisme 2016-2020 (NMSP)* was adopted in 2016. The main objectives of the NMSP 2016-2020 are to:

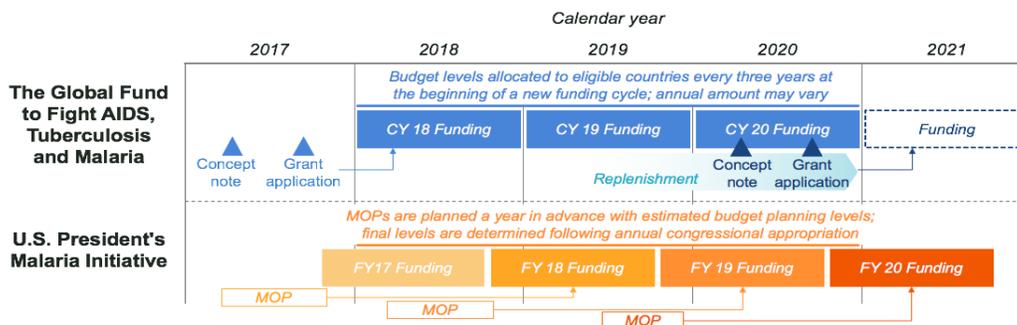
- Reduce malaria incidence by 40 percent by 2020 compared to 2015 baseline;
- Reduce malaria-related mortality by 40 percent by 2020 compared to 2015 baseline.

This FY 2020 Malaria Operational Plan presents a detailed implementation plan for Côte d'Ivoire, based on the strategies of PMI and the NMCP. It was developed in consultation with the NMCP and with the participation of national and international partners involved in malaria prevention and control in the country. This document briefly reviews the current status of malaria control policies and interventions in Côte d'Ivoire, describes progress to date, identifies challenges to achieving the targets of the NMCP and PMI, and provides a description of activities that are planned with FY 2020 funding.

Previously, Côte d'Ivoire was divided into 20 health regions and 86 health districts. In the ramp up to the next presidential election the country has reorganized and will have a new administrative breakdown. The new structure calls for 33 health regions and 112 health districts. PMI will continue to support national-level malaria interventions, but will focus technical assistance and service delivery in the same geographic area covering 45 percent of the population. However, due to the reorganization, the number of PMI supported regions will increase from 7 to 12 and the districts supported will increase from 34 to 45. The 12 regions are: Boukani, Gontougo, N'Zi, Ifou, Indenie-Djuablin, Sud-Comoe, Agneby-Tiassa, Me, Abidjan 1-Grands Ponts, Moronou, and Abidjan 2. PMI will continue working collaboratively with the Government of Côte d'Ivoire (GOCI), the Global Fund, UNICEF, and other donors to ensure there is support of malaria interventions in the remaining 21 regions and 68 health districts.

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 7: 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 the host country government in calendar years 2018-20, with the goal of highlighting total country investments. For Côte d’Ivoire, data is available from PMI (FY 2017) and the Global Fund (CY 2018-20). As the Global Fund 2021-23 grant funding cycle was not yet underway at the time this PMI FY 2020 MOP was developed, Global Fund country investments for the 2021 implementation period and beyond were not included. Note that the Government of Côte d’Ivoire 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 was not possible in the FY 2020 MOP cycle to attribute funding from the host country government.

Figure 8. Annual Budget by Level 1 Category

Year ¹	Funder	Vector Control	Case Management	Drug-Based prevention ²	Supply Chain ³	Monitoring, Evaluation & Research	Other Cross-Cutting and Health Systems Strengthening	Total
FY17/ CY18	PMI	\$11.4M	\$6.0M	\$0.7M	\$1.2M	\$1.0M	\$4.7M	\$25.0M
	Global Fund	\$4.0M	\$11.1M	\$0.1M	\$1.3M	\$2.2M	\$11.8M	\$30.4M
	Total	\$15.3M	\$17.1M	\$0.7M	\$2.5M	\$3.2M	\$16.5M	\$55.4M

Year ¹	Funder	Vector Control	Case Management	Drug-Based prevention ²	Supply Chain ³	Monitoring, Evaluation & Research	Other Cross-Cutting and Health Systems Strengthening	Total
FY18/ CY19	PMI	\$9.2M	\$6.2M	\$0.9M	\$1.6M	\$1.0M	\$6.1M	\$25.0M
	Global Fund	\$43.2M	\$9.0M	\$0.0M	\$1.3M	\$3.0M	\$10.0M	\$66.5M
	Total	\$52.4M	\$15.2M	\$1.0M	\$2.8M	\$4.0M	\$16.1M	\$91.5M
FY19/ CY20	PMI	\$10.9M	\$6.0M	\$0.9M	\$0.8M	\$0.9M	\$5.6M	\$25.0M
	Global Fund	\$9.1M	\$9.0M	\$0.1M	\$1.2M	\$2.4M	\$9.1M	\$30.9M
	Total	\$20.0M	\$15.0M	\$1.0M	\$2.0M	\$3.3M	\$14.6M	\$55.9M

¹ Each year's figures represent the FY for PMI and CY for GFATM 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"

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 same categories.

Figure 9. 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 ITNs for Continuous Distribution	\$5.1M	\$1.2M	\$3.6M	\$4.1M	-	\$4.3M
	Distribute ITNs via Continuous Distribution	\$1.8M	\$0.02M	\$2.6M	\$0.1M	-	\$0.1M
	Procure ITNs for Mass Campaigns	-	-	-	\$32.8M	\$9.6M	-
	Distribute ITNs via Mass Campaigns	\$1.7M	-	-	-	-	\$2.0M
	Other ITN Implementation*	-	-	-	-	-	-
	IRS Implementation ⁴	\$2.5M	-	\$2.0M	-	\$1.0M	-
	Procure IRS Insecticide ⁴	-	-	-	-	-	-
	Other IRS*	-	-	-	-	-	-
	Entomological Monitoring	\$0.4M	\$0.1M	\$1.0M	-	\$0.4M	-
	SBC for Vector Control ⁵	-	\$2.2M	-	\$2.3M	-	\$2.2M
	Other vector control measures	-	-	-	-	-	-
Removing human rights- and gender-related barriers to vector control programs**	-	\$0.4M	-	-	-	-	

Level 1 Category	Level 3 Category	FY17/CY18 ¹		FY18/CY19 ¹		FY19/CY20 ¹	
		PMI	Global Fund	PMI	Global Fund	PMI	Global Fund
Case Management	Active Case Detection**	-	-	-	-	-	-
	Community-based case management	-	\$4.5M	-	\$3.2M	-	\$3.0M
	Facility-based case management	-	\$0.7M	-	\$0.6M	-	\$0.5M
	Private-sector case management	-	\$0.03M	-	\$0.03M	-	\$0.01M
	Procure ACTs	\$1.8M	\$1.9M	\$0.8M	\$1.8M	\$1.6M	\$1.9M
	Procure Drugs for Severe Malaria	\$0.3M	-	\$0.02M	-	\$0.02M	-
	Procure Other Diagnosis-Related Commodities	\$0.1M	\$0.8M	-	\$0.2M	-	\$0.2M
	Procure Other Treatment-Related Commodities	-	\$0.1M	-	\$0.1M	-	\$0.1M
	Procure RDTs	\$1.7M	\$0.8M	\$1.0M	\$0.8M	\$1.2M	\$0.9M
	Therapeutic Efficacy	\$0.2M	-	\$0.2M	-	\$0.2M	-
	SBC for Case Management ⁵	-	\$0.01M	-	-	-	-
	Other Case Management	\$2.1M	\$1.6M	\$4.2M	\$1.6M	\$3.0M	\$1.6M
Drug-Based Prevention²	Procure SMC-Related Commodities	-	-	-	-	-	-
	SMC Implementation	-	-	-	-	-	-
	Prevention of Malaria in Pregnancy Implementation	\$0.3M	-	\$0.5M	-	\$0.4M	-
	Procure IPTp-Related Commodities	\$0.4M	-	\$0.5M	\$0.03M	\$0.5M	\$0.1M
	IPTi**	-	-	-	-	-	-
	SBC for Drug-Based Prevention ⁵	-	\$0.1M	-	-	-	-
Other Prevention**	-	-	-	-	-	-	
Supply Chain³	In-Country Supply Chain ³	\$0.1M	-	\$0.1M	-	\$0.1M	-
	Supply Chain Infrastructure	-	\$1.3M	-	\$1.3M	-	\$1.2M
	Ensuring Quality	-	-	-	-	-	-
	Pharmaceutical Management Systems Strengthening	\$1.1M	-	\$1.5M	-	\$0.7M	-
	Supply Chain System Strengthening	-	-	-	-	-	-

Level 1 Category	Level 3 Category	FY17/CY18 ¹		FY18/CY19 ¹		FY19/CY20 ¹	
		PMI	Global Fund	PMI	Global Fund	PMI	Global Fund
Monitoring, Evaluation & Research	Reporting, Monitoring, and Evaluation	\$0.5M	\$0.8M	\$1.0M	\$0.6M	\$0.8M	\$0.6M
	Program and data quality, analysis and operations research	-	\$1.3M	-	\$2.1M	-	\$0.5M
	Surveys	\$0.5M	-	-	\$0.3M	\$0.1M	\$1.3M
	Other Data Sources**	-	-	-	-	-	-
	Support for FETP*	-	-	-	-	-	-
Other Cross-Cutting and Health Systems Strengthening	Integrated service delivery, quality improvement, and national health strategies**	-	\$3.8M	-	\$3.0M	-	\$1.8M
	Financial management systems**	-	\$0.2M	-	\$0.2M	-	-
	Community responses and systems**	-	-	-	-	-	-
	Support for PCV and SPAs*	-	-	-	-	-	-
	Cross-Cutting Human Resources for Health**	-	-	-	-	-	-
	Central and Regional Program management ⁶	\$1.7M	\$2.2M	\$2.8M	\$2.3M	\$1.9M	\$2.4M
	In-Country Staffing and Administration*	\$2.1M	-	\$2.0M	-	\$2.4M	-
	Other Program Management**	-	\$5.5M	-	\$4.5M	-	\$4.8M
	SBC Unspecified ⁵	\$1.0M	-	\$1.3M	-	\$1.3M	-
Total		\$25.0M	\$30.4M	\$25.0M	\$66.5M	\$25.0M	\$30.9M

Footnotes:

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 the 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 same categories.

* Category currently funded by PMI only

** Category currently funded by Global Fund only

Figure 10. Annual Budget, Breakdown by Commodity

Year ¹	Funder	ITNs for Continuous Distribution	ITNs for Mass Distribution	IRS Insecticide ⁴	ACTs	RDTs	Severe Malaria	SMC-Related	IPTp-Related	Total
FY17/CY18	PMI ²	\$5.1M	-	-	\$1.8M	\$1.7M	\$0.3M	-	\$0.4M	\$8.8M
	Global Fund ³	\$1.2M	-	-	\$1.9M	\$0.8M	-	-	-	\$3.8M
	Total	\$6.2M	-	-	\$3.6M	\$2.5M	\$0.3M	-	-	\$12.6M
FY18/CY19	PMI ²	\$3.6M	-	-	\$0.8M	\$1.0M	\$0.02M	-	\$0.5M	\$5.4M
	Global Fund ³	\$4.1M	\$32.8M	-	\$1.8M	\$0.8M	-	-	\$0.03M	\$39.6M
	Total	\$7.7M	\$32.8M	-	\$2.6M	\$1.8M	\$0.02M	-	-	\$44.9M
FY19/CY20	PMI ²	-	\$9.6M	-	\$1.6M	\$1.2M	\$0.02M	-	\$0.5M	\$12.4M
	Global Fund ³	\$4.3M	-	-	\$1.9M	\$0.9M	-	-	\$0.1M	\$7.1M
	Total	\$4.3M	\$9.6M	-	\$3.5M	\$2.2M	\$0.02M	-	-	\$19.5M

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 the table above only include ex-works commodity value in a given year.

⁴ IRS 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 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 Cote d'Ivoire 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
<p>The NMCP's current objective is 90 percent universal coverage of the population at risk of malaria (one ITN for two people), with 80 percent utilization among those with nets. The strategy for reaching this objective includes mass distribution campaigns and routine distribution for pregnant women through antenatal care (ANC) services, children less than one year old through the expanded program on immunization (EPI), and children between one and five years of age during periodic visits. The next universal coverage campaign, planned for 2021, will be the fourth such campaign in Côte d'Ivoire, after a first campaign in 2011, a second in 2014-2015, and a third in 2017-2018. During the 2017-2018 mass distribution campaign, the NMCP switched to an approach of providing one ITN for each sleeping space. The 2021 net campaign will be conducted based on a district-level stratification using insecticide susceptibility data. The NMSP 2016-2020 also recommends IRS and larval control activities in the areas with the highest levels of malaria transmission, but due to a lack of funding, neither activity has been implemented at scale to date. PMI will support the first IRS campaign in two selected districts in mid-2020.</p>
NMCP approach
<p>The current NMCP policy in Côte d'Ivoire is to support the scale-up of ITNs through mass campaigns and distribution during ANC and EPI visits. Mass distribution of ITNs is based on the WHO's guideline of one net for 1.8 people. As of January 2018, and following discussions between the NMCP and PMI, the distribution of routine ITNs has been expanded to children between one and five years of age, while previously it covered only children less than one year of age. The distribution of ITNs through these activities helps ensure vulnerable populations maintain access to ITNs between mass campaigns, and provides opportunities to promote ITN use and care practices. Given that 30% of the population lives more than five kilometers from a health facility, the NMCP plans to start continuous distribution of nets at the community level. Distribution of nets from their arrival in-country to the distribution point is assured by the Central Medical Store (<i>Nouvelle Pharmacie de Santé Publique</i> or NPSP). The NPSP has a central warehouse in Abidjan, and is constructing a regional warehouse in Bouaké, which will facilitate pre-positioning of ITNs for the campaign.</p> <p>In the FY 2017 MOP, PMI agreed to support IRS implementation in Côte d'Ivoire. However, due to lack of appropriate entomological and insecticide susceptibility data to guide the selection of sites, IRS operations have been rescheduled. PMI is currently supporting insecticide susceptibility tests and bionomic studies to collect data to guide insecticide selection and lay the groundwork for IRS operations now scheduled for mid-2020 in two selected districts (Sakassou and Nassian).</p>

PMI objective, in support of NMCP

PMI began supporting entomological monitoring in three districts (Abidjan, Korhogo, and Bouaké) and insecticide resistance management activities in June 2018. The primary activities in the first year workplan included monitoring of insecticide susceptibility of *Anopheles gambiae* s.l. in six sites throughout the country, providing technical assistance for six other sites (funded by the Global Fund), and conducting entomological surveillance (including susceptibility tests) in four potential sites for IRS. In addition to these activities, PMI supported capacity building through entomological training, as well as logistical and environmental assessments prior to starting IRS. PMI also supports the NMCP to implement SBC activities aimed at increasing correct and consistent usage of ITNs throughout the country. Targeted SBC for IRS will be implemented in the selected IRS districts.

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

During the past 12-18 months:

- PMI conducted longitudinal entomological surveillance in four sites selected by the National Malaria Control Program (NMCP) including two sites targeted to receive IRS in 2020 (Nassian and Sakassou) and two control sites (Beoumi and Dabakala).
- Insecticide resistance monitoring was also conducted in those four sites and an additional 11 sites (Abengourou, Aboisso, Adzopé, Bettié, Bouaké, Bouna, Daloa, Gagnoa, Odienné, San Pedro and Yamoussoukro). Insecticide resistance will also be tested in three additional sites with Global Fund support later in 2019.
- Pyrethroid susceptibility was very low in all four sites, and resistance to insecticides used for IRS (such as pirimiphos methyl and bendiocarb) was also noted in all sites, except Gagnoa, where mosquitoes were susceptible to pirimiphos methyl.
- In addition, two insecticides recently recommended for public health use were also tested. Clothianidin is a neonicotinoid insecticide used in IRS, and chlorfenapyr is a pyrrole insecticide used on ITNs. While *An. gambiae* s.l. was susceptible to clothianidin, chlorfenapyr did not result in greater than 98 percent mortality in either site tested. However, the mortality after exposure to chlorfenapyr was considerably higher than pyrethroids tested alone or with PBO in all sites.
- To build the NMCP's capacity in vector control, PMI supported the recruitment of a Vector Control Specialist to be seconded to the NMCP for the next two years.

PMI's contribution to the NMCP to gather entomological data from the twelve sites for timely decision making was slowed down because the Global Fund was supporting six sites among the twelve through a different mechanism that was significantly delayed. Faced with this challenge, PMI and the NMCP agreed that PMI will take over all the twelve sites in 2020.

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

- PMI will support a short-term training of two mid-level entomology technicians for the NMCP in a West Africa entomological training center (Senegal, Burkina Faso or Benin).

- PMI will also support the implementation of the first IRS campaign in Sakassou and Nassian, two high malaria incidence districts in the Center of Côte d'Ivoire.
- PMI will continue to support insecticide susceptibility testing and entomological surveillance.
- PMI will support the creation of an Entomology Division within the NMCP, as well as the Entomology Specialist seconded to the NMCP.
- PMI and the NMCP are discussing a pilot community-based distribution of nets in target districts
- Currently PMI is supporting the planning and field work for the IRS operations scheduled for May-July 2020. Activities planned for the next six months include enumeration of houses, training of trainers, procurement of spraying materials and insecticide, and support for the vector control steering committee.
- Also, bionomic studies will continue in four districts, two of which (Nassian and Sakassou) are targeted for IRS operations and the two others (Dabakala and Beoumi) which are considered to be control sites.
- IRS-specific activities will be conducted before, during and after the campaign to sustain the gains
- PMI's partner will continue SBC activities related to ITN use after the communication materials have been produced based on the findings of the recent MBS.
- PMI will also support IRS-specific SBC activities in the two districts targeted for IRS operations

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?

The funding level for this activity has been slightly reduced due to budgetary constraints and the uncertainty of the continuation of this activity. Some of the current sites might drop, in FY 2019 particularly Gagnoa and Jacqueville, given they are no longer potential IRS sites. Funding for entomological monitoring and insecticide susceptibility testing will remain at FY 2019 levels. 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

Entomological monitoring activities are taking place in 19 sites throughout the country. Activities include insecticide resistance monitoring and susceptibility testing. Bionomic studies (evaluating seasonality, host-seeking behavior, etc.) are conducted in two districts (Nassian and Sakassou) and two control districts (Beoumi and Dabakala). These activities are funded by PMI. Until 2019, six of 19 sites were supported by the Global Fund. Moving forward, only PMI will support entomological monitoring in all the target districts in Côte d'Ivoire.

Figure A1. 2019 Entomological Monitoring Activities in Cote d'Ivoire

Districts	Activities	Supported by
Abengourou	Insecticide Resistance Monitoring	PMI
	Seasonal Bionomic ¹	GF
Abidjan (Yopougon)	Insecticide Resistance Monitoring	GF
	Seasonal Bionomic	GF
Aboisso	Insecticide Resistance Monitoring	PMI
	Seasonal Bionomic	GF
Adzope	Insecticide Resistance Monitoring	PMI
	Seasonal Bionomic	GF
Beoumi	Insecticide Resistance Monitoring	PMI
	Monthly Bionomic in Control site	PMI
Bettie	Insecticide Resistance Monitoring	PMI
Bouake	Insecticide Resistance Monitoring	PMI
	Seasonal Bionomic	GF
Bouna	Insecticide Resistance Monitoring	PMI
	Seasonal Bionomic	GF
Dabakala	Insecticide Resistance Monitoring	PMI
	Monthly Bionomic in Control site	PMI
Daloa	Insecticide Resistance Monitoring	PMI
	Seasonal Bionomic	GF
Gagnoa	Insecticide Resistance Monitoring	PMI
Jacqueville	Insecticide Resistance Monitoring	PMI
Korhogo	Insecticide Resistance Monitoring	GF
	Seasonal Bionomic	GF
Odienne	Insecticide Resistance Monitoring	PMI
	Seasonal Bionomic	GF
Man	Insecticide Resistance Monitoring	GF
	Seasonal Bionomic	GF
Nassian	Insecticide Resistance Monitoring	PMI
	Monthly Bionomic in IRS site	PMI
Sakassou	Insecticide Resistance Monitoring	PMI

¹ Seasonal Bionomic: bionomic studies are conducted in rainy season as well as in dry season

Districts	Activities	Supported by
	Monthly Bionomic in IRS site	PMI
San Pedro	Insecticide Resistance Monitoring	PMI
	Seasonal Bionomic	GF
Yamoussoukro	Insecticide Resistance Monitoring	PMI
	Seasonal Bionomic	GF

Figure A2. Map of Major Malaria Vector (*Anopheles gambiae*, *An. funestus* *An. nili*) Distribution in Longitudinal Monitoring 2019

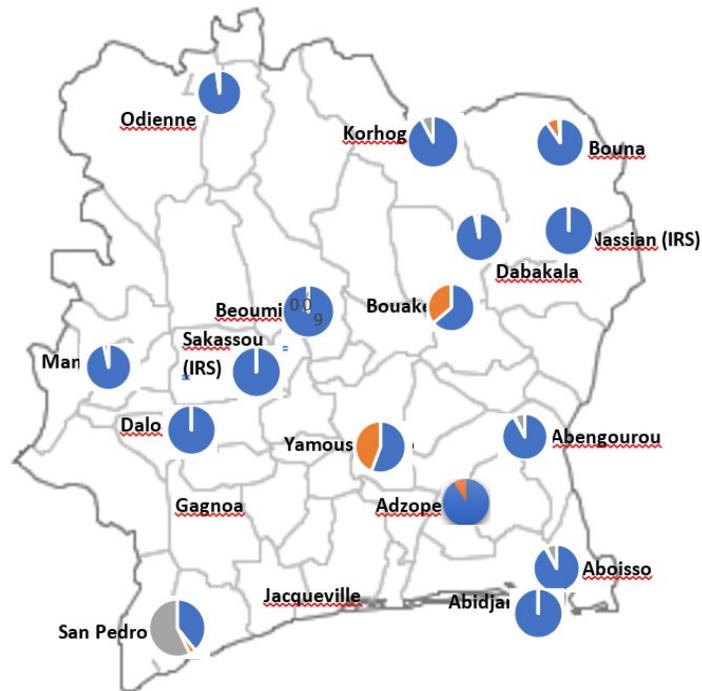


Figure A3. Proportion of *An. Gambiae* Complex Species Across 8 Districts

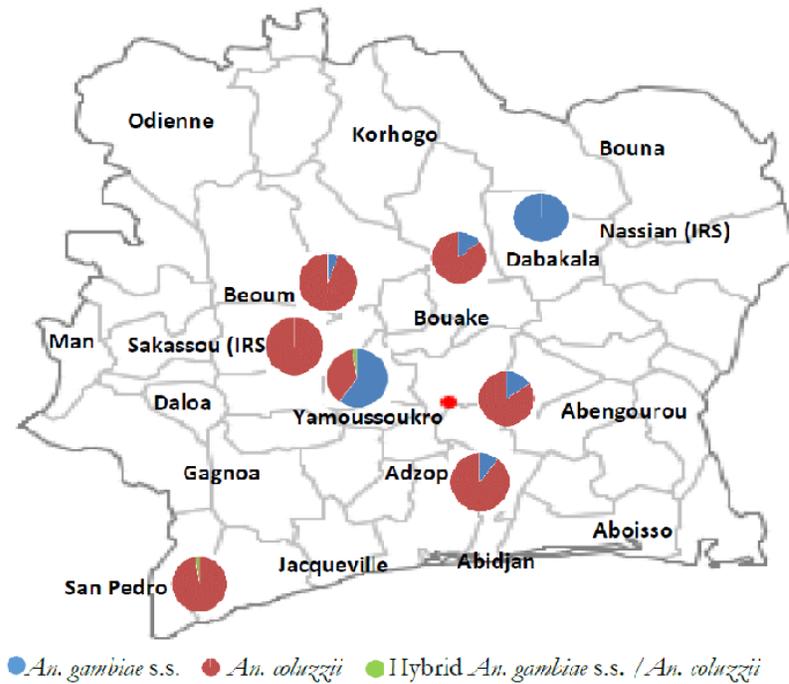


Figure A4. Characteristics of Malaria Vectors in Cote d'Ivoire

Site	Major Vector	Minor Vector	Peak Abundance	Preferred Biting Location	Preferred Resting Location	Preferred Host	Peak Sporozoite Rate	Annual* EIR
Bocanda	<i>An. gambiae</i> s.l.	<i>An. funestus</i>	3:00 outdoor, 1:00am indoor	Outdoor	Not assessed	Human	6.1%	Monthly EIR (during transmission season):0.06 infectious bites per month
Gagnoa	<i>An. coluzzii</i>		1:00-3:00 both indoor and outdoor	Outdoor	Not assessed	Human	2.2%	Monthly EIR (during transmission season):0.63 infectious bites per month
Jacqueville	<i>An. coluzzii</i>		22:00-5:00 (variable) both indoor and outdoor	Indoor	Not assessed	Human	2.5%	Monthly EIR (during transmission season):0.2 infectious bites per month

Site	Major Vector	Minor Vector	Peak Abundance	Preferred Biting Location	Preferred Resting Location	Preferred Host	Peak Sporozoite Rate	Annual* EIR
Sakassou	<i>An. coluzzii</i>		1:00-3:00 both indoor and outdoor	Outdoor	Not assessed	Human	1.1%	Monthly EIR (during transmission season): 1.5 infectious bites per month

* The transmission season denoted here is November-March

* PMI started insecticide susceptibility tests in 2018 in these four sites initially anticipated as IRS sites

Conclusion

Resistance monitoring will continue to guide the NMCP's efforts to identify the most appropriate interventions (ITNs and IRS). Increased understanding of molecular mechanisms may be especially informative for vector control decision-making.

Key Question 2

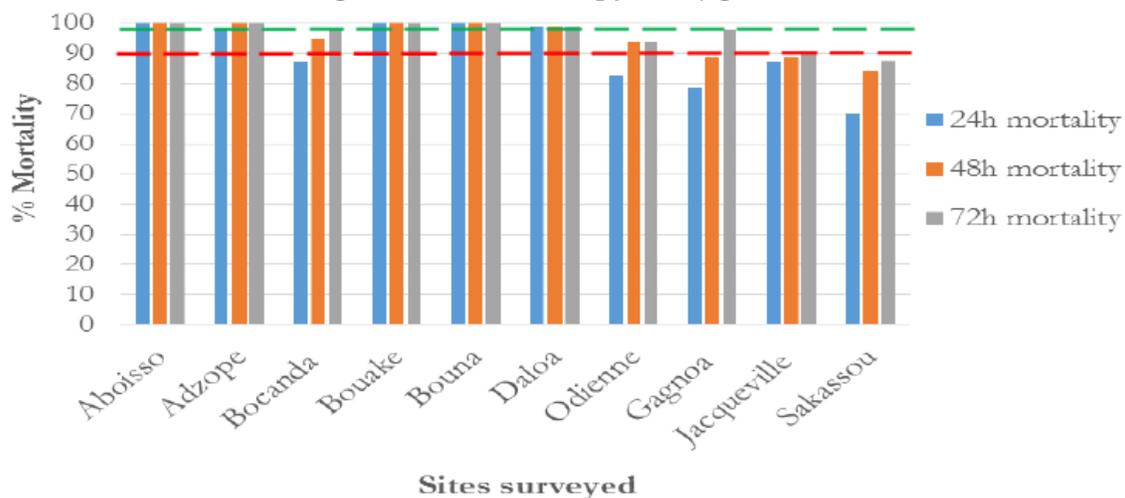
What is the current insecticide resistance profile of the primary malaria vectors?

Supporting Data

Larval collections were made between November 2018 and March 2019. *Anopheles gambiae* s.l. mosquitoes were reared and used for tests. The insecticide susceptibility test data are presented below.

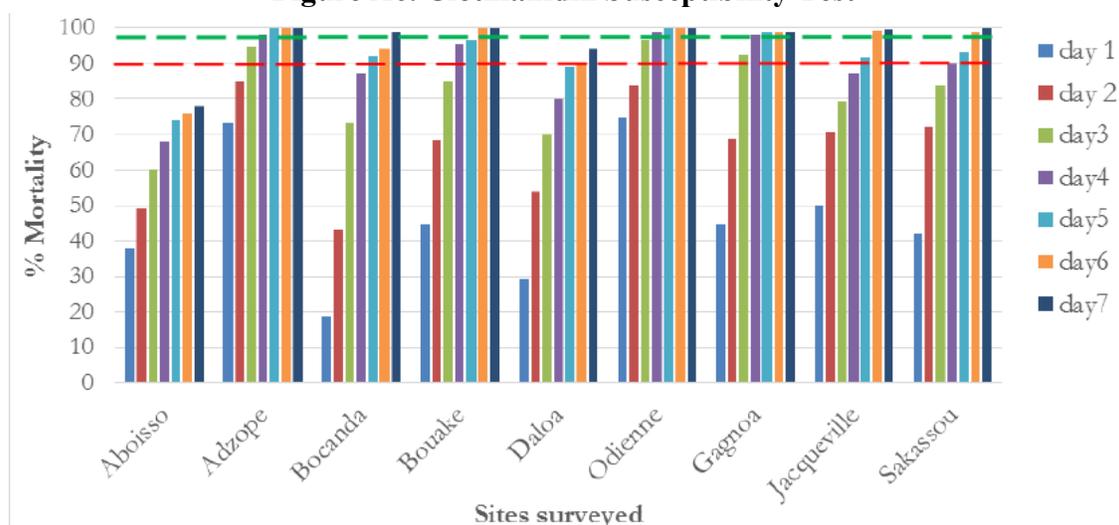
In addition to the insecticides presented above, chlorfenapyr was also tested in CDC bottle bioassays (green and red dashed lines show 98% threshold for susceptibility and 90% threshold for potential resistance, respectively).

Figure A5. Chlorfenapyr 200µg/Bottle



Clothianidin, a neonicotinoid insecticide used for IRS was also evaluated using WHO tube tests and papers treated with SumiShield.

Figure A6. Clothianidin Susceptibility Test



Conclusion

Based on the above data, the NMCP in collaboration with PMI has selected the districts of Sakassou and Nassian as IRS operations sites. Other selection criteria included the size of the population and the associated budget. PMI will conduct pre and post epidemiological evaluations to guide future IRS programming.

The pyrethroid resistance is of concern and must be considered when choosing ITNs. *An. gambiae* s.l. were susceptible to pirimiphos methyl and clothianidin in the two sites where IRS will be done.

Key Question 3

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

Supporting Data

None.

Conclusion

Although the presidential election is scheduled for October 2020, PMI and the NMCP agreed to conduct the first IRS campaign in April and July 2020 as this will happen before the election.

PMI and the NMCP will review post-IRS epidemiological data to collaboratively determine with the NMCP whether IRS will be continued or discontinued, on a cost-efficiency basis. While waiting for this decision to be made, PMI has programmed funds in FY 2020 to continue support for IRS operations.

1.B. INSECTICIDE-TREATED NETS (ITNs)

PMI Goal

Achieve high ITN 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 ITN 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 ITN distribution and SBC activities? Why? What data did you use to arrive at that conclusion?

PMI has decided to maintain funding allocation levels for ITN distribution. Given the objective set forth by the NMCP to achieve 90 percent coverage and usage of nets in the general population, PMI plans to support continuous community distribution of nets to reach the estimated 30 percent of the population that lives more than five kilometers away from a health facility.

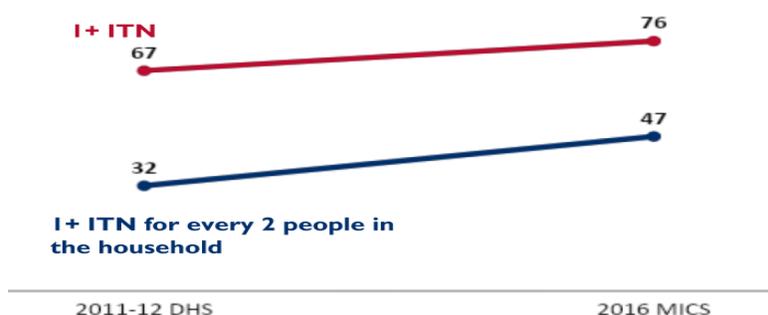
Please see Table 2 for a detailed list of proposed activities with FY 2020 funding.

Key Question 1

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

Supporting Data

Figure A7. Trends in ITN Ownership, *Percent of Households*



Conclusion

PMI started in FY 2018 therefore no data have been collected since then to show bed net coverage and use. Data related to bed net coverage and use will be included in the FY 2021 MOP as the country will have completed and published both the 2018 national statistics bulletin and DHS 2020 preliminary results.

Although updated data are not currently available to assess PMI impact on net ownership and use, PMI and the NMCP have programmed more resources than previous years for social and behavior change (SBC) activities such as community leader mobilization and door to door communication with community workers and women’s groups in order to increase awareness of the importance of nets in malaria prevention and to better promote the use of nets.

Key Question 2

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

Supporting Data

Figure A8. Trends in ITN Access and Use, Percent of Household Population with Access to an ITN and Who Slept Under an ITN the Night Before the Survey

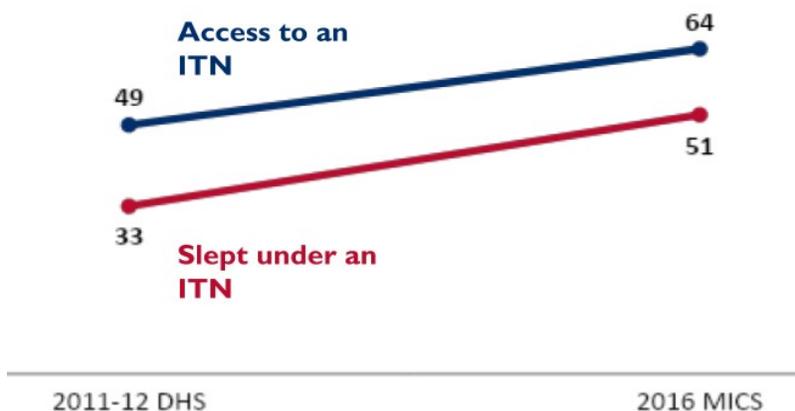
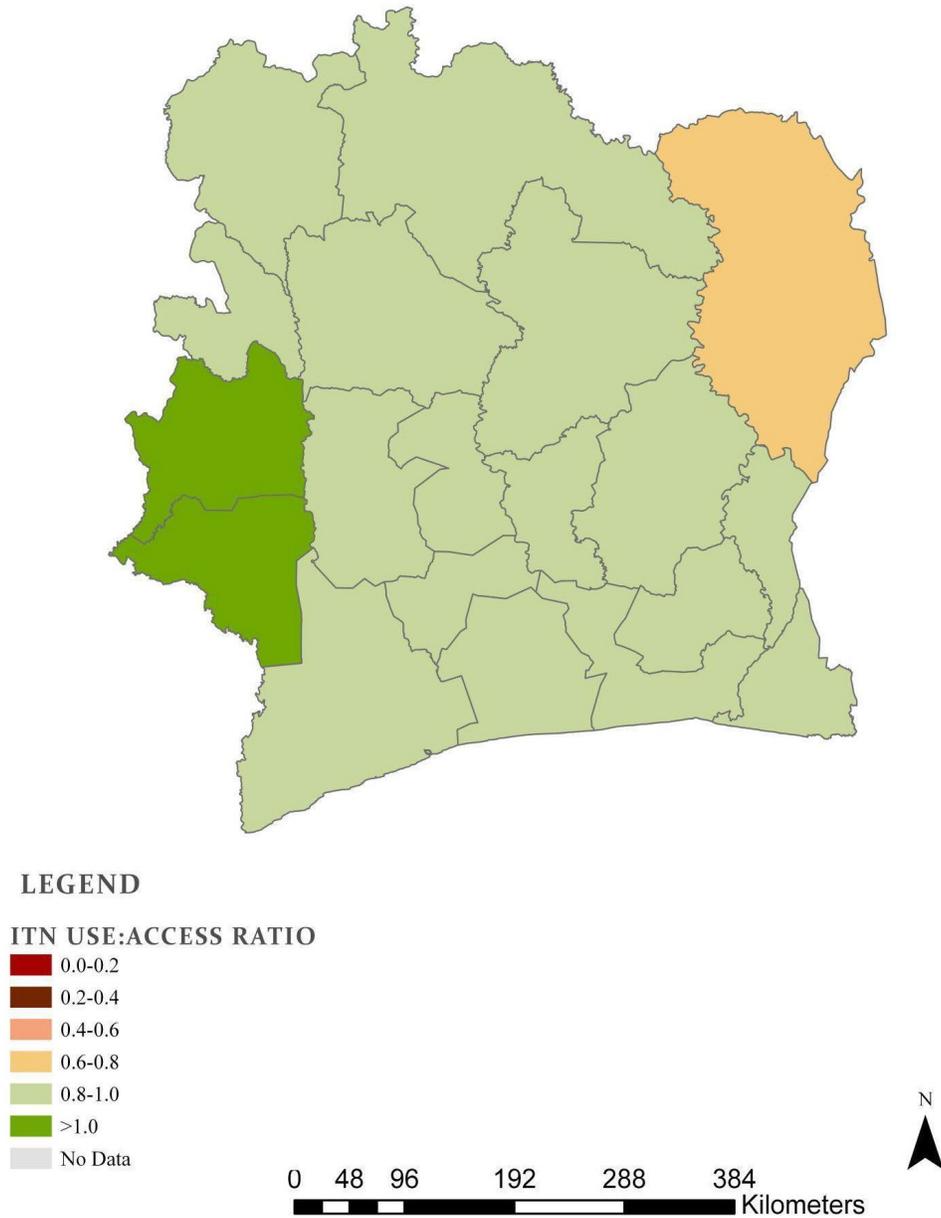


Figure A9. ITN Use: Access Ratio, from MICS 2016



Conclusion

The use: access ratio is between 0.8 and 1.0 in most of the country, indicating that if sufficient nets are available, people will generally use them. In the northeastern part of the country and in Abidjan, this ratio is lower, meaning that additional SBC activities may be necessary to encourage use.

Key Question 3

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

Supporting Data

Figure A10. Barriers and Facilitators to ITN Use

Facilitator	Type of Factor	Data Source	Evidence
Favorable Attitudes Towards Use of ITNs	Internal	MBS - 2019	Women have generally favorable attitudes towards the use of ITNs. The majority of women believe that sleeping under a mosquito net allows a good night's sleep (82.6%), that mosquito nets are easy to use (85.7%), and that sleeping under an insecticide-treated net does not pose a health hazard (85.5%). Men also have similar attitudes. Most men agree that mosquito nets are very useful (97.0%), are generally easy to use (89.5%), allow for a good night's sleep (85.1%), and sleeping under a mosquito net is not a health risk (87.8%).
Barrier	Type of Factor	Data Source	Evidence
Lack of Knowledge on Malaria Transmission	Internal	MBS - 2019	Outside of Abidjan, misinformation about the causes of malaria was found to reduce the likelihood of sleeping under ITN every night by 20%. Almost 64% of respondents reported an incorrect cause of malaria.

Conclusion

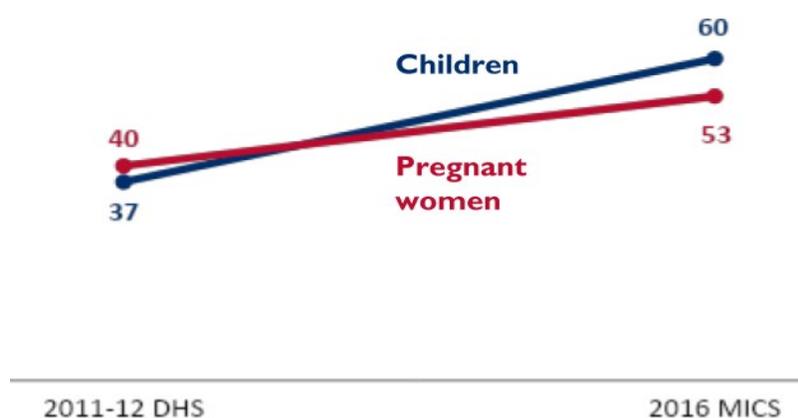
PMI conducted a Malaria Behavior Survey (MBS) in early 2019. Based on the results of the MBS, PMI plans to work with the NMCP to revise the current SBC strategy and design appropriate messages to address social norms and other factors influencing the use of ITNs and other malaria services. In the FY 2020 MOP, SBC resources have been increased to reflect that programmatic need.

Key Question 4

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

Supporting Data

Figure A11. Trends in ITN Use among Children and Pregnant Women, Percent of Children under 5 and Pregnant Women Age 15-49 who Slept under an ITN the Night Before the Survey



Conclusion

PMI has allocated increased resources to support SBC activities to increase awareness of the importance and effectiveness of malaria prevention and control. The revised SBC strategy will be implemented nationwide with a special focus on areas with high incidence.

Furthermore, these differences level out in households that do have enough ITNs. This would suggest that in addition to the activities listed in the previous question, access to ITNs needs to be improved. The CY2021 net campaign should address this issue.

Key Question 5

What channels are used to distribute ITNs?

Supporting Data

Figure A12. ITN Distribution Channels

ITN	DISTRIBUTED					PLANNED		
	2015	2016	2017	2018	Q1 2019	2019	2020	2021
SOURCE	NMCP Report	NMCP Report	NMCP Report	DHIS2	DHIS2	Quantification	Quantification	Quantification
EPI	469,815	1,171,028	1,064,879	955,194		2,229,197	2,306,132	1,321,479
ANC					680,618	1,051,290	1,0082,351	911,264
Schools	X	X	X	X	X	X	X	X
Community	X	X	X	X	X	X	X	X
Specific sites						251,000		

	DISTRIBUTED					PLANNED		
ITN	2015	2016	2017	2018	Q1 2019	2019	2020	2021
SOURCE	NMCP Report	NMCP Report	NMCP Report	DHIS2	DHIS2	Quantification	Quantification	Quantification
Mass Campaign 2014/15: 82 HDs 2017/18: 83 HDs	14,667,718		15,667,718				17,015,047	

Côte d'Ivoire typically implements only routine distribution (EPI and ANC) of nets and campaign distribution to achieve universal coverage. However, during the FY 2020 MOP visit, PMI, the Directorate of Community Health, and the NMCP agreed to start implementation of community-based distribution, to reach the estimated 30 percent of the population living more than 5 km from a health facility and not receiving nets via routine distribution.

Conclusion

Based on the above data, PMI will work with the NMCP and the Global Fund to support net distribution at the community level moving forward. PMI is currently in discussion with the NMCP and the Directorate of Health Information Systems to collect data from the community level for services being offered including distribution of nets.

Key Question 6

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

Supporting Data

Figure A13. Project ITN Need, 2019 - 2021

Calendar Year	2019	2020	2021
Total Targeted Population ¹	26,914,742	27,614,525	28,332,503
Continuous Distribution Needs			
Channel #1: ANC ²	1,051,290	1,082,351	911,264
Channel #2: EPI ³	2,229,197	2,306,132	1,321,479
Channel #3: Specific sites (prisons, IDPs)		161,565	0
<i>Estimated Total Need for Continuous Channels</i>	3,280,487	3,550,048	2,232,743
Mass Campaign Distribution Needs			
2020 mass distribution campaign ⁴	0	17,015,047	0
<i>Estimated Total Need for Campaigns</i>	0	17,015,047	0
Total ITN Need: Routine and Campaign	3,280,487	20,565,095	2,232,743
Partner Contributions			

Calendar Year	2019	2020	2021
ITNs carried over from previous year	0	185,754	0
Stock available and usable at the end of the previous year	269,210	1,273,121	0
ITNs from MOH	280,000	840,000	280,000
ITNs from Global Fund ⁵	2,190,109	15,687,525	389,226
ITNs from other donors	0	0	0
ITNs planned with PMI funding ⁶	726,922	2,531,474	766,123
Total ITNs Available	3,466,241	20,517,874	1,435,349
Total ITN Surplus (Gap)	185,754	-47,221	-797,394

Footnotes

¹ Population used is from EPI unit. This differs from the population used in the 2018 MOP that had been estimated based on the 2014 general census. The annual population growth rate is 2.6%.

² Population *% pregnant women (5% in 2019, 2020; 4% in 2021)* ANC1 attendance rate *NMSP objective for coverage rate (90%)

³ Population*percentage of children <1 year (3.24%)*EPI attendance (X%)*NMSP objective for coverage rate (90%) PLUS Population*percentage of children 1-5 years (12.03%)*OPD attendance rate (X%)*NMSP objective for coverage rate (90%)

⁴ Based on historic need of ITNs from previous campaign. There has been a historical increase of approximately 10% between campaigns.

⁵ In 2020, GF will finance 15,687,525 LLINs (945,550 routine distribution, 11,885,963 standard, and 2,856,012 G2). In 2021, the "New Nets Project" will acquire 389, 226 for routine distribution.

⁶ Anticipate the purchase of 2020 routine LLINs from the 2018 MOP by purchasing them in the last quarter of fiscal year 2018.

Please see above table for ITN volume planned for the next three years. The country will implement a nationwide mass distribution campaign of nets. Campaign nets are quantified based on the stratification exercise conducted in February 2019, based on entomological and insecticide susceptibility data. A table of net availability by donor partner for the campaign is provided below.

Figure A14. ITN Quantification for the 2021 Mass Distribution Campaign

Quantification/Needs	Standard ITN	PBO ITN	G2 ITN
	11,885,963	2,815,534	2,856,012
Global Fund	11,732,107	284,060	2,856,012
PMI		2,531,474	
Government of Côte d'Ivoire	153,856		
TOTAL	11,885,963	2,815,534	2,856,012
	17,557,509		

Conclusion

Côte d'Ivoire will implement its first mass distribution campaign of nets based on stratification, using insecticide susceptibility data. PMI will procure PBO nets while the Global Fund will procure G2 nets and standard nets. Ultimately, the country will only rely on PBO and G2 nets to meet the challenge of insecticide resistance.

Key Question 7

What is the current status of durability monitoring?

Supporting Data

Durability monitoring has not yet started. It will occur with the upcoming mass distribution campaign in 2021.

Conclusion

Monitoring will take place with the 2021 mass distribution campaign; 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

The NMCP currently does not have a vector control or entomological division. All prevention activities, including vector control, fall under one division which also comprises the service delivery activities related to proper care and treatment and malaria in pregnancy. There are also no trained or dedicated staff to monitor vector control or entomological activities such as IRS implementation. To address this need, PMI, with FY 2018 MOP resources, has recently recruited an entomologist to be seconded to the NMCP for a two-year period with the mandates of providing hands-on technical support to the NMCP and facilitating the creation of a distinct Vector Control/Entomology Division.

Côte d'Ivoire's next presidential election is scheduled for October 2020. Given the heavy logistics and security involved in a net distribution campaign, and the fact that bed nets purchased by the Global Fund were stolen during the political turmoil of the previous election, the mass campaign will be postponed until after the 2020 election. The operations cost of distributing 2.8 million nets procured by PMI to support a mass distribution campaign in the first quarter of 2021, with repositioning of ITNs to take place in the last quarter of 2020 after the election, is included in this MOP.

Conclusion

PMI has programmed resources in the FY 2019 MOP to procure 2.5 million PBO nets to contribute to the campaign. Operations costs for the campaign will be programmed in FY 2020 MOP.

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

The amount programmed for the FY 2020 MOP to support IRS operations was reduced compared to FY 2018 MOP to reflect the current pipeline of the entomological monitoring and IRS support activities.

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

Key Question 1

What areas are targeted for IRS and why?

Supporting Data

The NMCP has not yet implemented IRS in Côte d'Ivoire (the first PMI-funded NMCP spraying season will be in CY2020). However, in the 2012 DHS survey, 1.5% of respondents stated that their house had been sprayed in the past 12 months. This is likely to have been done by non-governmental organizations or private operators. The areas for IRS were chosen after an analysis of malaria prevalence, population density, and insecticide resistance. This allowed the selection of four potential sites for IRS. These sites were further assessed through entomological monitoring, including insecticide resistance. In this period, the budget and expected costs of IRS were assessed. The numbers of households that it would be possible to spray were smaller than expected. Rather than partially spraying a second district, two feasible districts (with appropriate populations) were selected using the initial criteria and were further assessed in 2019. This allowed for the selection of Sakassou (identified in the first round) and Nassian (identified in the second round). The planning for IRS is underway and malaria case data and rainfall data were used to determine the time of spraying.

Conclusion

The NMCP has not yet implemented IRS in Côte d'Ivoire (the first PMI-funded NMCP spraying season will be in CY2020). An IRS-specific SBC and mobilization campaign will be supported by PMI prior, during and after the operations to increase adherence to directives and guidelines and thus, satisfaction of the beneficiary households.

Key Question 2

In PMI-supported areas, what spray coverage rates have been achieved in the past 5 years?

Supporting Data

Figure A15. Spray Coverage Rates 2016 - 2020

Calendar Year	Number of Districts Sprayed	District Names**	Number of Structures Sprayed	Coverage Rate	Population Protected
2016					
2017					
2018					
2019					
2020*	2	Nassian & Sakassou	TBD	TBD	TBD

*Denotes targets **If more than 15 districts, list regions/provinces.

Conclusion

Not yet sprayed.

Key Question 3

What is the residual efficacy of the insecticides used for IRS in PMI-supported areas?

Supporting Data

Not yet available.

Conclusion

Not yet available.

Key Question 4

What is the plan for insecticide rotation? What insecticide will be used next in PMI-supported areas?

Supporting Data

Figure A16. Insecticide Rotation Plan in PMI-Supported Areas

Year	Nassian	Sakassou
2017	No IRS	No IRS
2018	No IRS	No IRS
2019	No IRS	No IRS
2020*	Clothianidin	Clothianidin

*Denotes planned insecticide choices

Conclusion

CY 2020 is the first year of PMI-funded IRS (and the first year that NMCP is undertaking IRS). Insecticide rotation (resistance management) will be addressed as and when subsequent spraying campaigns are held.

Key Question 5

Are any PMI-supported areas considering withdrawing IRS? If so, what programs are in place to cover anticipated increases in malaria cases and promote consistent net use and care-seeking behaviors?

Supporting Data

Côte d'Ivoire will implement IRS for the first time in 2020, and the impact will be carefully monitored to see whether this intervention should be continued. As of yet, there is no plan to withdraw IRS.

Conclusion

The first IRS campaign will be implemented in April-May 2020. No plan to withdraw IRS at this time.

Key Question 6

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

Supporting Data

None.

Conclusion

None.

VI. 2. HUMAN HEALTH

2.A CASE MANAGEMENT in health facilities and communities

NMCP objective
<ul style="list-style-type: none">• As per the <i>Plan Strategique National de Lutte Contre de Paludisme (2016-2020)</i>, the NMCP has prioritized achieving universal coverage for diagnostic confirmation of suspected cases of malaria within public health facilities. Likewise, achieving universal coverage for diagnostic confirmation of suspected cases of malaria among children under five years of age at the community level has also been prioritized. The country has committed to implementing integrated community case management (iCCM) throughout the country for all villages located greater than five kilometers from a health facility.• The main objectives of the NMSP 2016-2020 are to:<ul style="list-style-type: none">○ Reduce malaria incidence by 40% by 2020 compared to 2015 baseline○ Reduce malaria-related mortality by 40% by 2020 compared to 2015 baseline.
NMCP approach
<ul style="list-style-type: none">• Côte d'Ivoire's malaria diagnostic guidelines are in line with WHO recommendations that require every suspected malaria case to be confirmed before administering ACTs.• Per national guidelines, microscopy is used to confirm malaria diagnosis in the public and private-not-for-profit (faith-based) sectors at all regional and district reference hospitals while RDTs are used to confirm malaria diagnosis at health centers and at the community level, or in any health care facility whenever microscopy is unavailable, which includes during off hours and/or on weekends when there is no lab technician available.• As per national directive, there is no fee for RDTs or ACTs in public and private not-for-profit health facilities for children under five years of age and pregnant women. Emergency diagnosis and treatment (which includes severe malaria) is free of charge for patients of all ages. For older children and adults, all RDTs and ACTs are provided free of charge in public health facilities. Per national guidelines, RDTs and ACTs are to be provided free of charge in private for-profit facilities for children under five years of age and pregnant women, although this may not always occur. PMI does not provide commodities to private facilities.• In 2017, the Division of Community Health within the Ministry of Health drafted the <i>Plan Stratégique de la Santé Communautaire</i> (Strategic Plan for Community Health). Côte d'Ivoire's community health policy and implementation framework continues to evolve. The strategy was not accompanied by an operational plan and as such, the NMCP, with the assistance of UNICEF, the Global Fund, and PMI is one of the first national programs to try to follow the strategy during program implementation. The plan calls for 12,600 community health workers (CHWs) who come from villages that are located more than 5 km from the

nearest health center. They are given supplies and supervised by the health care provider, usually a nurse, at the facility. CHWs are trained in integrated community case management, including RDT testing and treatment

- The country, with partner assistance, has standardized the job description and trainings for CHWs. The training materials are based on integrated case management of malaria, pneumonia, and diarrhea (iCCM).
- The country requests that each CHW receive a monthly stipend of 20,000 CFA (about \$33). PMI does not provide a stipend to CHWs working in PMI areas. Instead, PMI has provided supplies such as vests, raincoats, identification cards, and some bicycles. PMI covers expenses for travel-related supervision meetings at the health facility/district.
- In Côte d’Ivoire, a significant proportion of the population seeks care in the private sector. According to the 2016 MICS, 13.5 percent of children under five years of age with fever presented to private facilities for care, while another 38.5 percent did not seek treatment at all.
- According to the *Rapport Annuel sur la Situation Santé* (Annual Health Situation Report) the utilization rate of services in the public sector in 2016 was only 45 percent compared to 43 percent in 2015. This means that about 55 percent of cases seek care outside of public facilities which can include community, private health facilities, pharmacies, traditional healers, or not at all. Although the NMCP does provide RDTs and ITNs to some private facilities and the national guidelines are distributed, it is not known which antimalarials are most commonly available in the private sector
- The NMCP has developed guidelines for quality control, however currently there is no laboratory supervision checklist in Côte d’Ivoire that is used systematically.
- The public sector consists of 3,215 doctors, 7,989 nurses and 2,814 midwives. The NMCP recommends that staff at each facility receive at least a refresher training in case management guidelines.

Figure A17. Status of Case Management Policy and Implementation in Côte d’Ivoire

Status of Case Management Policy in Côte d’Ivoire according to Arrete no. 109/CAB/MSLS, July 14, 2014		Currently being implemented? Are there plans to modify the recommendations?
What is the first-line treatment for uncomplicated <i>P. falciparum</i> malaria?	AS/AQ or AL or DH/P	AS/AQ or AL currently; plan to add DH/P soon. Artesunate/pyronaridine and artesunate/mefloquine are considered alternate treatment.
What is the second-line treatment for uncomplicated <i>P. falciparum</i> malaria?	Oral quinine	Yes

What is the first-line treatment for severe malaria?	IV/IM artesunate	Yes
In pregnancy, what is the first-line treatment for uncomplicated <i>P. falciparum</i> malaria in the first trimester?	Oral quinine	Yes
In pregnancy, what is the first-line treatment for uncomplicated <i>P. falciparum</i> malaria in the second and third trimesters?	AS/AQ or AL or DH/P	AS/AQ and AL current policy; plan to add DH/P
In pregnancy, what is the first-line treatment for severe malaria?	IV quinine	Yes
Is pre-referral treatment of severe disease recommended at peripheral health facilities? If so, with what drug(s)?	IM artesunate or IM artemether	Yes
Is pre-referral treatment of severe disease recommended for community health workers? If so, with what drug(s)?	Rectal artesunate 50 mg	Yes
If pre-referral rectal artesunate is recommended, for what age group? (note: current international guidelines do not recommend administering to those ≥ 6 years)	< 5 years	Yes

PMI objective, in support of NMCP

- PMI has worked with the NMCP to put into practice its National Strategic Plan by ensuring that activities in PMI zones are harmonized with those in Global Fund and UNICEF covered areas so that there is “one program” in-country.
- PMI adheres to the National Community Health Worker Strategy developed in 2018 in implementing integrated community case management (iCCM) in PMI-covered areas.
- PMI continues to support the NMCP in its efforts to introduce pre-referral community-based treatment for severe malaria in children under five years of age. The current national guidelines call for rectal artesunate at 50 mg, although there are plans underway to revise this dosage to 100 mg.

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

- PMI has procured 1,869,009 RDTs and 1,146,000 ACTs, in addition to materials to support direct observed therapy of IPTp-SP.

- In addition to the procurement of supplies, PMI supported the redeployment of RDTs and ACTs in response to local stockouts.
- In support of improving case management, PMI partners reviewed and helped standardize the training materials for CHWs and health care providers. They have worked with the NMCP and the *Direction du Santé Communautaire* to identify and train a pool of trainers at national and district levels.
- In support of ramping up iCCM, PMI has held CHW mobilization events in 22 districts, trained 1,838 CHWs in iCCM, and trained 960 facility-based health care providers.
- As part of the strategy, PMI has targeted 121 local women’s groups and established five community action groups to conduct local sensitization activities on the risk of malaria and timely health seeking at the district and sub-district level.
- PMI supported a rapid microscopy needs assessment, conducted in 105 laboratories and reference hospitals, along with the development of a capacity building plan which described the availability of microscopes and numbers of trained technicians across all regions.
- To reinforce the capacity of the National Malaria Control Program, PMI has supported an external capacity assessment of the national program with an accompanying reinforcement plan focusing on NMCP capacity needs, NMCP re-organization and its relationship to national research institutions.
- PMI has supported the recruitment of 10 Regional Technical Advisors to serve as an extension of the NMCP at the regional and district level providing support for training, supervision, and data quality.
- PMI and its partners have identified and selected five NGOs to work in PMI districts and contract them directly to conduct the training and supervision activities with CHWs. The NGOs are planning to work closely with the regional and district offices. The NGOs have been oriented and introduced to the regional and district health directors, explaining their missions and activities.
- Regarding malaria service delivery, the delay in the startup of our implementing partner contributed to a significant holdup in program activities – leading to delayed local staffing and recruitment of five local NGOs to support iCCM in the PMI districts.
- The delay in local NGO recruitment impacted the performance of the CHWs. Although most of the people identified had worked as CHWs previously, their training in iCCM was limited due to a lack of supplies at the time of training. In addition, supervisory activities were not able to start until September 2019.

- Due to the amount of work needed in the public health facilities, direct technical assistance and support to strengthen malaria case management in private not-for-profit health facilities was not able to start.

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

- PMI is currently supporting the training of health care providers at multiple levels within the health care system on the country's national guidelines for case management. This activity will be followed up with regular on-site supervision and coaching.
- 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.
- Based on the microscopy needs assessment, PMI will identify laboratory technicians and laboratory supervisors who demonstrate competency gaps and will support them to go through a five-day malaria diagnostic refresher training (MDRT) course.
- PMI plans to work with the NMCP and the *Groupe Scientifique d'Appui* (Scientific Advisory Group) to develop a relevant laboratory supervision checklist and tool for Côte d'Ivoire. This supervisory tool may be an electronic supervision checklist using the outreach training and supportive supervision (OTSS) laboratory supervision checklist within the Health Network Quality Improvement System (HNQIS) platform.
- PMI has developed a coaching/supportive supervision schedule with districts and NGOs to supervise CHWs. NGOs have been trained on using supervision data for decision making and are expected to hold quarterly meetings with health facility staff, districts, NGOs, and PMI implementing partner staff to identify any bottlenecks in coaching/supervision and to plan solutions.
- PMI will support the implementation of community-based pre-referral treatment of rectal artesunate for children less than five with signs or symptoms of severe malaria.
- PMI with WHO, UNICEF, and Save the Children, will provide support to the *Direction de la Santé Communautaire* for the development of the national community health policy document. This document will support the 2017-2021 National Strategic Plan for Community Health, currently being implemented.
- PMI will support the NMCP and the *Programme National de Santé de la Mère et de l'Enfant* (PNSME) for the initial organization of the new technical working group (TWG) including drafting terms of reference and other key documents with the goal of bringing national guidelines up to WHO standards.
- In addition to supporting supervision activities, a pilot activity focusing on health care provider behavior will target 5 health facilities. Lessons from the pilot activity and the

Outreach Training and Support Supervision (OTSS) activities will be integrated into a mentorship program to improve the quality of malaria service delivery for malaria in pregnancy, and case management at facility level. Mentoring visits will employ both on-the-job training and coaching. Sample topics include delivery of IPTp through ANC, case management and data use.

- In addition to the community mobilization efforts currently supported by PMI targeting women’s groups and community leaders, PMI will work with healthcare providers to also engage/coordinate with CHWs, midwives and women’s groups to find women who are lost to follow up and to sensitize all women in their communities to attend ANC for IPTp.
- During the malaria-specific health facility survey, facilities that provide ANC services will be included in the representative sample of health facilities to evaluate malaria case management including and identify barriers IPTp provision in pregnant women. The survey will include exit-interviews with randomly selected outpatients which will inform future healthcare provider training and supervision
- In 2019, the NMCP conducted therapeutic efficacy studies at 12 sites with support from the Global Fund. In 2020, PMI will support a therapeutic efficacy study in 4 sites including monitoring for molecular markers of resistance to ACTs through the PARMA network , to monitor the efficacy of first-line ACTs used in Côte d’Ivoire

PMI Goal

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

The funding levels for Case Management reflect the need to continue to provide services at the facility and community level. However, the overall level will be decreased for FY 2020 since it is only now that all activities are fully in-progress. Given the delay in project implementation there is a significant pipeline available for implementation.

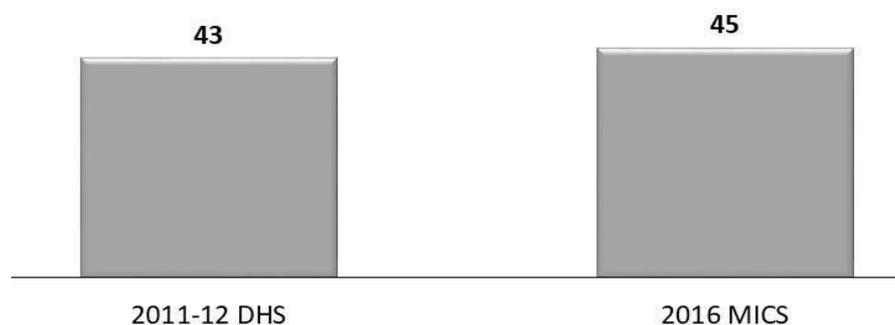
Please see Table 2 for a detailed list of proposed activities with FY 2020 funding.

Key Question 1

What is the status of care-seeking?

Supporting Data

Figure A18. 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 that this indicator has been recalculated according to the newest definition, care or treatment from any source, excluding traditional practitioners.

Conclusion

Although malaria is the number one reason people are seen in health facilities, immediate health seeking for children is still delayed. The MBS shows that while care was sought at some point during a child's illness in almost 90 percent of cases of fever in children under five years of age, only about 63 percent were brought to a health facility or community health worker as a first recourse within 24 hours. Furthermore, according to the 2016 MICS half of all respondents either sought treatment for their child under 5 years of age with a fever at a place other than a health center (12 percent) or did not seek treatment at all (39 percent). PMI will assist the NMCP to use the results of the MBS to propose messaging and activities to address care seeking at the community and facility levels within the revised SBC strategy and adapt messaging for those seeking care at the community level.

Key Question 2

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

Supporting Data

The MBS, which was recently conducted in Côte d'Ivoire, identified the ideational determinants most strongly correlated with immediate and appropriate care seeking.

Figure A19. Major Barriers and Facilitators to Care-Seeking

Facilitator	Type of Factor	Data Source	Evidence
Favorable attitudes toward prompt care seeking	Internal	MBS - 2019	Over 90% feel that a person should take a child to a health worker the same day the child has a fever and over 95% think that the health worker is always the best person to talk to when you think your child has malaria.

Perception that immediate treatment is the norm	Social	MBS - 2019	More than two-thirds of respondents believed that the norm in their community is to take a sick child to the health center on the same day or the day after fever begins
Perception that community health workers are good at treating malaria in children	Internal	MBS - 2019	More than 80% of respondents agree that CHWs in their community know how to treat malaria in children
Barrier	Type of Factor	Data Source	Evidence
Belief in self-medication	Internal	MBS - 2019	Although over 90% agree that a health worker is always the best person to talk to when you think your child has malaria, almost 60% agree that it is better to start treatment of your sick child by giving him the antimalarial medications you have at home
Perception of quality of service at health facilities	Social	MBS - 2019, Site Visits, NMCP Supervision	Only 66% of respondents believe that people who seek treatment for fever in a health center are well looked after, thereby questioning the quality of services they receive.
Lack of accessibility (by zone)	Environmental	MBS - 2019	Prompt care seeking at a health facility varied by zonal area and was more widespread in Abidjan (71.1%) than in the North (61.5%), the Central zone (64.1%) and the South (54.8%).
Lack of accessibility (by wealth)	Environmental	MBS - 2019	Variations by household wealth quintile: women from higher quintile households were more likely than those from lower quintiles to immediately seek appropriate care and 74% of respondents believed that health workers charge parents for anti-malaria medications for children

Conclusion

Overall, a large proportion of women feel that it is important to take a sick child to a health worker the same day a child has fever; almost two-thirds feel that it is okay to begin treatment at home. Women who had a favorable attitude towards prompt care seeking or who felt that it was the norm were significantly more likely to bring their sick child to a health facility within 24 hours. However, barriers to care-seeking behavior include some facility-related factors including uncertainty about being charged, long wait times, and poor quality of service from staff. SBC activities for care seeking need to be targeted in areas other than Abidjan (which has relatively higher levels of prompt care seeking) and towards poorer populations (which tend to have lower

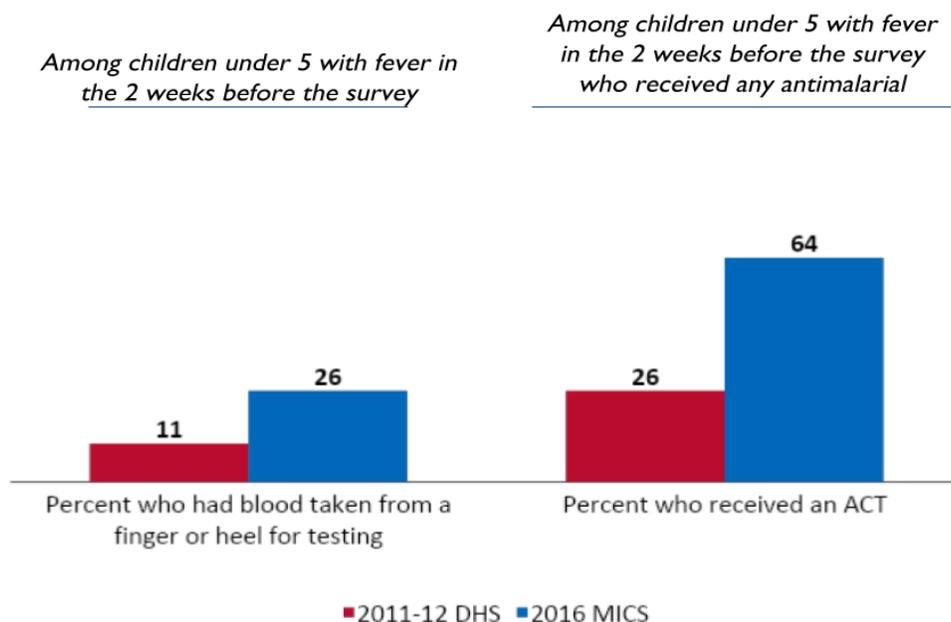
levels of prompt care seeking). PMI will assist the NMCP to use the results of the MBS to propose messaging and activities to address prompt care seeking at the community and facility levels within the revised SBC strategy.

Key Question 3

How have malaria testing and treatment practices evolved over time?

Supporting Data

Figure A20. Trends in Diagnosis and Treatment of Children with Fever



Conclusion

Malaria testing has increased over time. A change in policy was instituted in 2016 requiring all malaria cases to have a documented diagnostic test before receiving treatment. Those persons who did not have a documented positive test would not be considered a confirmed malaria case. In the most recent Annual Health Situation Report (*Rapport Annuel sur la Situation Sanitaire or RASS*), 2017 the proportion of reported malaria cases with a documented test was at 96 percent. The RASS figure does not include a significant portion of the population who may present to traditional healers or local pharmacies for direct treatment, or those persons treated presumptively due to stockouts of RDTs.

Key Question 4

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

Supporting Data

Figure A21. Major Barriers and Facilitators to Provider Testing and Treatment

Facilitator	Type of Factor	Data Source	Evidence
Existence of treatment guidelines	Environmental	Policy Documents and Guidelines	NMCP has distributed guidelines to all health facilities
Barrier	Type of Factor	Data Source	Evidence
Lack of adherence to national guidelines	Internal	Site Visits / Supervision	Per NMCP, sample review of registers showed a negative RDT result, but a treatment prescribed

Conclusion

In general, most providers are aware of the guidelines for testing and treatment of children with fever. However, per the NMCP, during site/supervisory visits there is evidence to suggest that providers may default to the older strategy of treating fever cases as presumptive malaria even when there is no documented positive diagnostic test. In addition, an End User Verification study conducted in June showed that 17 percent of malaria cases were treated without a positive test, although some of this may have been due to local stockouts. Data on provider behavior is lacking; PMI is therefore proposing to implement a malaria-specific health facility survey in a nationally-representative sample of health facilities to evaluate malaria case management.

Overall supervision for providers is a challenge since there are not enough staff at the district level to provide regular supervision to the number of providers and facilities within a given district.

Key Question 5

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

Supporting Data

NOTE: These maps reflect the “old” districts. By CY2020, PMI will be implementing in the same geographic area, but it will comprise 45 districts.

Figure A22. Support for Facility-Based Activities by Donor

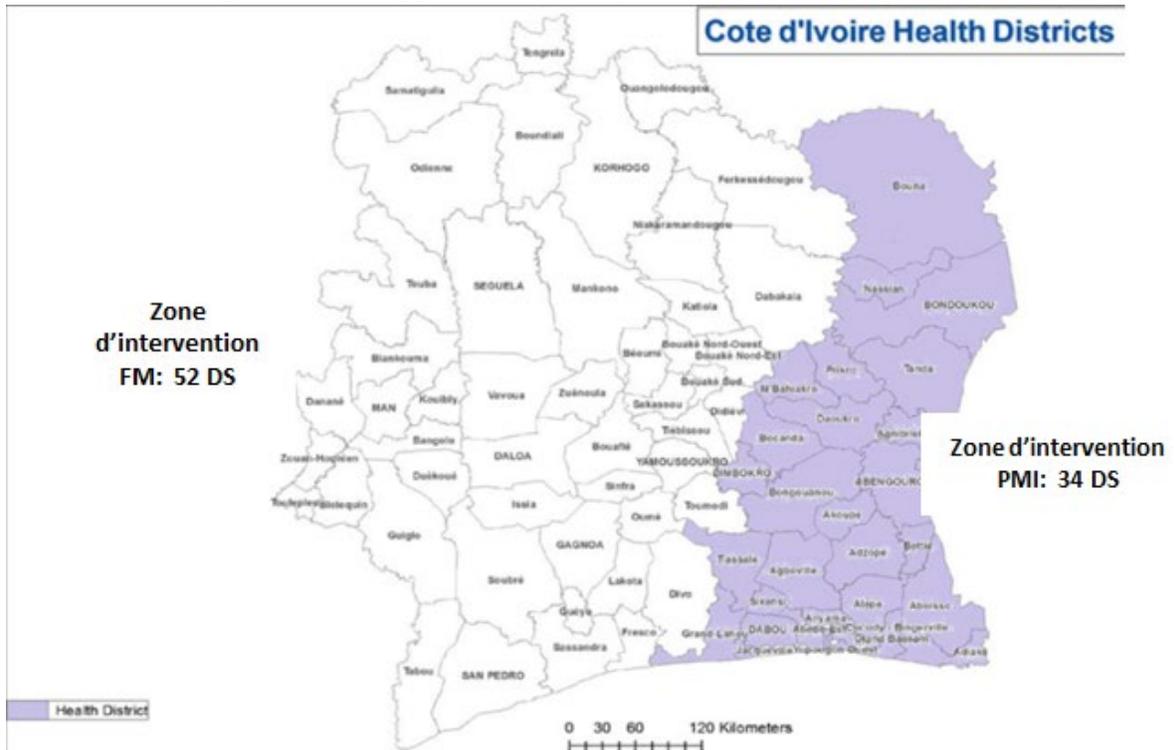
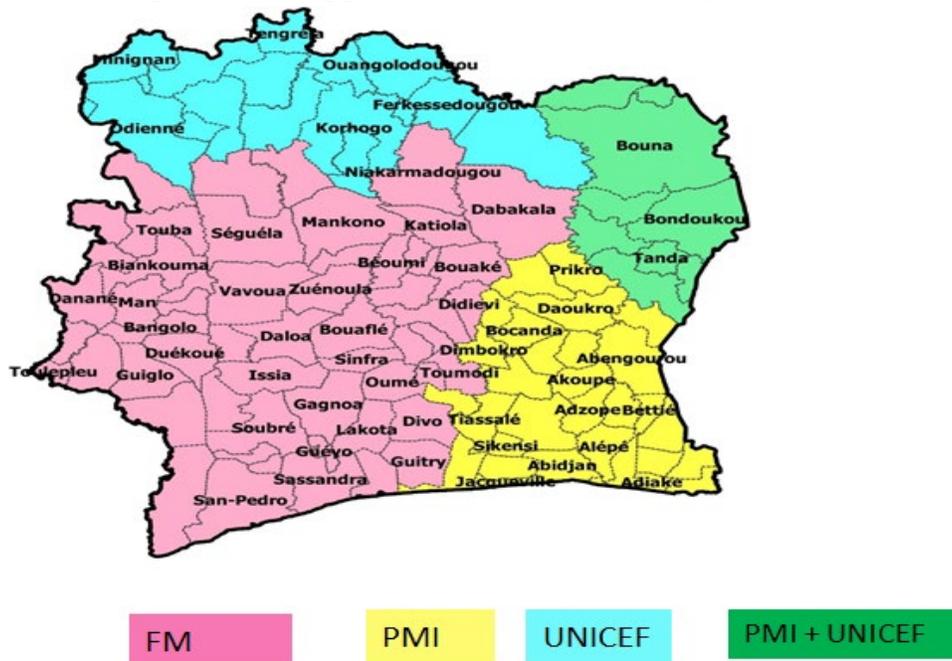


Figure A23. Support for iCCM Activities by Donor



Conclusion

- PMI currently supports iCCM and health facility training in 34 districts. This number will increase to 45 districts with the new administrative units.
- PMI is currently supporting the training of health care providers at multiple levels with the health care system on the country's national guidelines for case management. This activity will be followed up with regular on-site supervision and coaching; including using local NGOs to work with CHWs.
- 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.

Key Question 6

What is the estimated need for RDTs for FY 2020?

Supporting Data

Figure A24. Gap Analysis of RDTs for FY 2020

Calendar Year	2019	2020	2021
RDT Needs			
Total country population ¹	26,914,742	27,614,525	28,332,503
Population at risk for malaria ²	26,914,742	27,614,525	28,332,503
PMI-targeted at-risk population			
Total number of projected fever cases ³	8,169,278	8,738,347	9,075,326
Percent of fever cases tested with an RDT ⁴	6,098,105	6,522,897	6,774,441
Total RDT Needs	6,098,105	6,522,897	6,774,441
Partner Contributions (to PMI target population if not entire area at risk)*			
RDTs carried over from previous year	0	247,195	354,474
Stock available and usable at the end of the previous year	1,285,825	0	0
RDTs from Government	0	0	0
RDTs from Global Fund	3,190,475	4,206,475	0
RDTs from other donors	0	0	0
RDTs planned with PMI funding	1,869,000	2,423,701	2,772,406
Total RDTs Available	6,345,300	6,877,371	3,126,880
Total RDT Surplus (Gap)	247,195	354,474	-3,647,561

Footnotes

¹ Population used is from EPI unit. This differs from the population used in the 2018 MOP that had been estimated based on the 2014 general census. The annual population growth rate is 2.6%.

² Geographic coverage: 100% of the country is at risk

³ Fever cases estimated based on predicted average number of fevers by age group: <1 (3.2), 1-5 (1.5), 6-13 (0.6), >13 (0.33)

Conclusion

Based on the gap analysis, the expected carry over will provide only 933,641 RDTs. Reviewing the procurements of PMI and the Global Fund in the last two years, PMI can expect to procure

about 2 million RDTs. Also, the NMCP is considering expanding the use of RDTs to reference hospitals which stay open 24 hours and on weekends to expedite testing for emergency cases.

Key Question 7

What is the estimated need for ACTs for FY 2020?

Supporting Data

Figure A25. Gap Analysis of ACTs for FY 2020

Calendar Year	2019	2020	2021
ACT Needs			
Total country population ¹	26,914,742	27,614,525	28,332,503
Population at risk for malaria ²	26,914,742	27,614,525	28,332,503
PMI-targeted at-risk population			
Total projected number of malaria cases ³	4,786,212	4,954,469	4,974,012
Total ACT Needs⁴	4,451,177	4,607,656	4,625,831
Partner Contributions (to PMI target population if not entire area at risk)			
ACTs carried over from previous year	0	1,547,138	2,630,192
Stock available to use at the end of the previous year	1,679,510	0	0
ACTs from Government	0	0	0
ACTs from Global Fund	3,172,805	4,463,210	0
ACTs from other donors			0
ACTs planned with PMI funding	1,146,000	1,227,500	977,864
Total ACTs Available	5,998,315	7,237,848	3,608,056
Total ACT Surplus (Gap)	1,547,138	2,630,192	-1,017,775

Footnotes

¹ Population used is from EPI unit. This differs from the population used in the 2018 MOP that had been estimated based on the 2014 general census. The annual population growth rate is 2.6%.

² Geographic coverage: 100% of the country is at risk

³ #malaria cases=# tested*estimated % positive test

⁴ #malaria cases*NMSP coverage objective (100%)*% uncomplicated malaria (93%)

Conclusion

The majority of stock expected for the year 2019 was delivered between October and December 2019 leaving a large carryover at the start of 2020. The quantification of needs takes into account the maximum levels defined in the logistics management information system (LMIS), to be considered at the end of the year.

Key Question 8

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

Supporting Data

See Gap Analyses in Figures A24 and A25.

Conclusion

Treatment for severe malaria will be purchased entirely by The Ivorian Government through the NPSP.

Key Question 9

Are the first-line ACTs effective and monitored regularly?

Supporting Data

Figure A26. Recently Completed and Ongoing Antimalarial Therapeutic Efficacy Studies

Year	Sites	Treatment arms	PCR-corrected ACPR>90%?	Where molecular resistance work was completed or the plan, if any, for molecular resistance work
2017	Abengourou, Abidjan, Korhogo, Man, San Pedro, Yamoussoukro	AL, ASAQ	Yes	Global Fund funded
2019	Abidjan, Bouna, Bouake, Daloa, Odienne, Aboisso, San Pedro, Man, Korhogo, Yamoussoukro, Abengourou, Adzope	AL, ASAQ	Not available	Global Fund funded

Source: *Étude de l'efficacité et de la tolérance des associations Artésunate/Amodiaquine et Artémèther/Luméfántrine dans le traitement du paludisme simple à Plasmodium*

falciparum dans six sites sentinelles en Côte d'Ivoire (Abengourou, Abidjan, Korhogo, Man, San Pedro, Yamoussoukro)

Footnotes - ACPR: adequate clinical and parasitological response; AL: artemether-lumefantrine; ASAQ: amodiaquine-artesunate; PARMA: PMI-supported Antimalarial Resistance Monitoring in Africa

Conclusion

To date, PMI has not funded a therapeutic efficacy study (TES) in Côte d'Ivoire. As of 2017, AL and ASAQ remain efficacious in Côte d'Ivoire. Studies were last conducted in 2017 in six of Côte d'Ivoire's epidemiologic and entomological sentinel sites carried out with Global Fund support. Both first-line ACTs were evaluated, and preliminary results of clinical and parasitological response were adequate.

- There were no TES done in 2018.
- In 2019, TES were conducted in 12 sites throughout the country wholly supported by the Global Fund. A draft report has been produced and a final report is expected in February 2020.
- The program will plan to support studies at two sites for each of the next two years starting in 2020.

Key Question 10

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

Supporting Data

Data quality continues to be a major issue. There are challenges at each level starting with the integration of community-level data at the sub-district level up to the consolidation and reporting at the national level. In addition, facility-based data is plagued by incomplete documentation and record keeping. Per the NMCP, this is due to a lack of support for supervision.

Conclusion

- Currently, international partners have supported efforts to review and harmonize data. PMI will collaborate with other donors to improve data quality closer to the source of data collection instead of quarterly national level meetings.
- PMI also will work to redefine the current support it provides for the national task force meetings to introduce more accountability for data quality to the district and sub-district level.

Key Question 11

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

Supporting Data

- The major in-country concern that impacts the funding allocation for this category is the delay in starting activities at the community and facility level. Given the large financial cushion for these activities, the funding for this MOP 2020 may decrease to address other priorities.
- The country does have a need for supervision activities, especially when it comes to data quality. Thus, money from this area may need to focus on enhancing data quality.

Conclusion

The overall funding level may decrease but it does not reflect a limitation in programmatic activities. It is due to the significant financial resources currently available which can be used to target other activities such as data quality and improved supervision.

2.B. DRUG-BASED PREVENTION

NMCP objective
<ul style="list-style-type: none">• The country does not currently have a seasonal malaria chemoprevention program.• Malaria prevention in pregnancy is a key intervention in the NMSP 2016-2020. The main objectives outlined in the NMCP strategy are:

- At least 80 percent of pregnant women sleep under insecticide-treated mosquito nets;
- At least 80 percent of pregnant women receive at least three doses of SP according to national guidelines

NMCP approach

- The NMSP 2016-2020 reflects the old WHO policy of providing IPTp with SP at every antenatal care visit after the first trimester (after the 16th week of pregnancy or at first signs of fetal movement) with four weeks between doses, providing an ITN during the first ANC visit, and prompt appropriate management of malaria illness during pregnancy.
- In November 2017, the NMCP revised the previous guidelines regarding intermittent preventive therapy to reflect the updated 2016 WHO antenatal care guidelines recommending eight ANC contacts, including an additional visit at 13-16 weeks to ensure early initiation of IPTp1.
- Outreach activities from health centers are conducted to improve IPTp coverage. The country wants to eventually have CHWs provide IPTp in some cases as stated in the NMSP.
- The NMCP is also implementing a small-scale SMS project to send reminders to pregnant women about their ANC appointments.

PMI objective, in support of NMCP

PMI continues to support the national strategy for MIP, which includes provision of ITNs at first ANC visit, IPTp to all pregnant women in malaria endemic area starting at 13 weeks gestational age, for a minimum of three doses, and effective case management of malaria, in accordance with WHO recommendations.

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

- With the support of PMI, the Minister of Health has established a Malaria in Pregnancy Technical Working Group led by the NMCP with participation of the *Progamme de la Santé des Mères et Enfants (PSME)*, the *Société de Gynécologie et Obstétrique de Côte d'Ivoire*, and the *Société Ivoirienne de Pédiatrie*.
- PMI-supported malaria in pregnancy activities at both facility and community levels were delayed due to the late start of the service delivery partner.
- PMI has supported IPTp by acquiring 1,973,200 doses of Sulfadoxine-pyrimethamine and monitoring of implementation in 10 districts.
- PMI has acquired materials to support direct observed therapy of IPTp-SP.

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

- At the outset, PMI will work with the NMCP and district level stakeholders to identify and understand current gaps in the existing integrated supportive supervision program and work to enhance the capacity to conduct effective on-site supervision.
- PMI will procure and distribute DOT materials (disposable cups and water containers) to district levels for all health facilities in PMI districts to assist in making DOT implementation possible.
- PMI will pilot a provider-targeted SBC activity in three health districts
- Based on the findings of MBS, women’s groups will utilize an Interpersonal Communication (IPC) approach to encourage early and regular ANC visits and increased IPTp uptake in areas within five km of a health facility.

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

PMI Goal

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

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?

PMI will continue to support malaria in pregnancy activities – IPTp in facilities, distribution of ITNs and community outreach. This money represents an increase from last year to account for the increased emphasis on DOT both at health facilities and in the community. PMI has also increased SBC funding from \$900,000 to \$1,600,000 to address ANC attendance and as well as IPTp uptake from both the patient and provider perspectives.

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

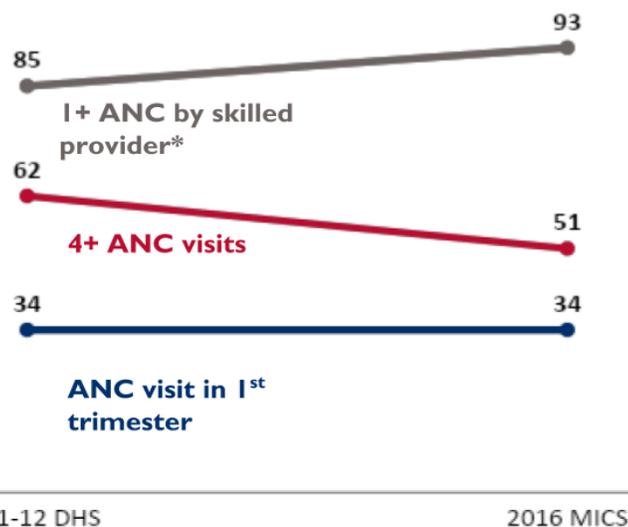
Key Question 1

What proportion of pregnant women are receiving ANC early and frequently (as recommended by national and/or WHO strategies) during their pregnancy?

Supporting Data

Figure A27. 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



*Skilled provider includes doctor, nurse, midwife or auxiliary nurses/midwives

Conclusion

- In November 2017, the NMCP revised the previous IPTp guidelines to reflect the updated 2016 WHO ANC guidelines. The new guidelines were drafted in conjunction with the National Program for Maternal and Child Health and the new policy has been validated by key stakeholders. However, the Maternal and Child Health Program has not yet rolled out the 2016 WHO ANC guidelines recommending eight ANC contacts, including an additional visit at 13-16 weeks to ensure early initiation of IPTp1.
- While Côte d'Ivoire did see an improvement in pregnant women attending at least one ANC visit from 85 to 91 percent, they saw a larger decline in women attending at least 4 ANC visits from 62 to 51. Per the NMCP, this is due to a delayed first ANC visit and poor patient experiences during visits. The NMCP has also corrected the mis-reporting of all visits by pregnant women (no matter the cause) as ANC related. Loss to follow up continues to be a major obstacle in delivering ANC services.
- The NMCP supports the implementation of intermittent preventive treatment of pregnant women (IPTp) with Sulfadoxine/pyrimethamine (SP) under direct observation and provided free of charge in both public and private health facilities. While the NMCP guidelines have been updated to reflect early initiation of IPTp this has not yet been fully adopted throughout the country.

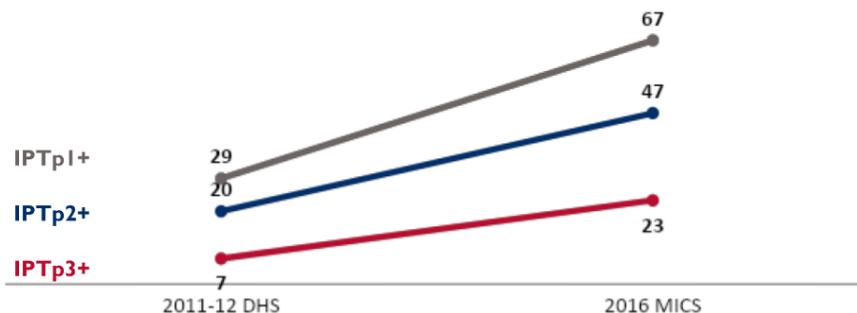
Key Question 2

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

Supporting Data

Figure A28. 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.

Conclusion

- The 2016 MICS showed an IPTp3 coverage of 2016 of 22.6 percent.
- Côte d'Ivoire continues to suffer from ANC attendance dropping off sharply after the first ANC visit. Coverage of pregnant women with IPTp2 has increased from 20 percent in 2012 (MICS 2012) to 46.7 percent in 2016 (MICS 2016). According to the 2016 MICS, only 22.6 percent of all women attending ANC received at least three doses of SP during their most recent pregnancy. The country had set a goal for IPTp3 coverage of 60 percent for 2017. Based on the 2017 RASS, IPTp3 coverage had only increased slightly to 35.6 percent with only three districts reaching the national target of 60 percent.
- According to the NMCP annual report derived from HMIS data, between 2015 and 2017, IPTp2 coverage increased from 54 percent to 57 percent, and IPTp3 coverage rose from 23 percent to 35 percent, with a total of 1.5 million women seen in 2017. Data from the 2018 annual report is pending.
- Based on the new national CHW strategy, efforts are being put in place to recapture women lost to follow up after their first ANC visit through outreach activities by health center providers. Also, an SMS pilot project is being implemented in 44 districts with support from the Global Fund. Reminders about their upcoming appointment are sent to pregnant women who have attended their first ANC visit. Coverage of pregnant women with routine ITN distribution has increased from 47 percent in 2015 to 61 percent in 2017.

Key Question 3

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

Supporting Data

Figure A29. Trends, Percent of Women Age 15-49

- With a live birth in the past 5 years who received 4+ ANC visits
- With a live birth in the past 2 years who received 3+ doses of IPTp

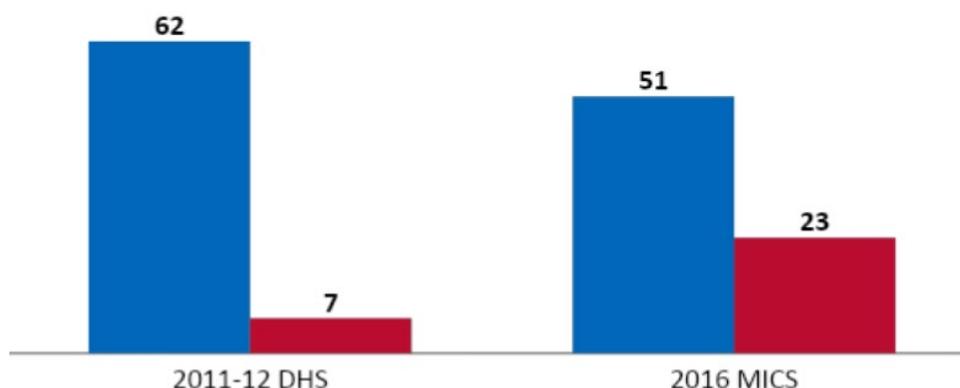


Figure A30. Key Barriers and Facilitators to IPTp Uptake

Facilitator	Type of Factor	Data Source	Evidence
Treatment and training manuals have been updated to reflect the new IPTp policy	Environmental	NMCP guidelines	Treatment and training manuals exist and have been distributed by the NMCP
High knowledge of timing and frequency of ANC	Internal	MBS - 2019	80.9% of men and women know the time of the first antenatal consultation while most (77.5%) know that a pregnant woman must go for at least four antenatal visits
High levels of perceived severity	Internal	MBS - 2019	96.0% of women and 96.4% of men know that pregnant women are more likely to die from malaria than non-pregnant women. Similarly, 93.1% of men and 93.4% of women believe that when a pregnant woman has malaria, the effect on herself and her unborn child can be very severe
High levels of perceived self-efficacy	Internal	MBS - 2019	75% of women believed they could take all six relevant actions related to self-efficacy to attend four ANC visits and get all of the IPTp doses.

Perception that at least 4 ANC visits and use of malaria-prevention drugs are the norm	Social	MBS - 2019	Most respondents (83.5%) believe that going for at least four ANC visits is the norm in their community while about two-thirds (70%) think the use of malaria-prevention drugs by pregnant women, is the norm in their community
Barrier	Type of Factor	Data Source	Evidence
Costs associated with use of IPTp	Environmental	MBS - 2019	Among women who received SP from a source other than a health center, 75.4% reported paying for the drug, while 24.3% of women who received their dose only from a health center reported paying for the drug
Insufficient knowledge about the importance of SP	Social	MBS - 2019	Less than a quarter (22.6%) of all respondents (including 25% of women) know that a woman should receive three doses of SP during pregnancy.
Relatively low positive attitude towards ANC/IPTp	Internal	MBS - 2019	Only 56.6% of women and 61.4% of men had positive attitudes towards ANC/IPT
Suboptimal Adherence to MIP (IPTp) Guidelines Among Health Workers	Internal/Environmental	MICS 2016	ANC 4 attendance is over 50 percent. Even if all of these women attended ANC 1 in their first trimester, IPTp 3 coverage should be around 50%. However, only 23% of women reported receiving at least 3 doses of IPTp.

Conclusion

- There is a good level of knowledge on the number of ANC visits a pregnant woman should make from the first consultation. However, the number of doses of SP that a pregnant woman must receive is not well known. Indeed, less than a quarter (22.6 percent) of respondents know that a pregnant woman should receive at least three doses of SP during pregnancy.
- Even when women attend the required number of ANC visits, they are still not getting all the recommended doses of SP; although 51% of women attend ANC4 according to the 2016 MICS data, only 23% of women reported receiving at least three doses of IPTp . This may be due to health service provider behavior and a lack of supervision at the facility level. The planned malaria-specific health facility survey, which will look also at facilities that provide ANC services, will evaluate malaria case management and identify barriers to IPTp provision in pregnant women. The survey will include exit-interviews with randomly selected outpatients which will inform future healthcare provider training and supervision. Data quality may also play a role in that providers do a poor job of documenting services.
- In addition to financial and distance barriers, a situational analysis conducted by our service delivery partner found that provider's failure to follow up with patients due to

high workload contributed to the low uptake of services. IPT delivery was also impacted by local stock outs of SP and the absence of potable water and disposable cups.

- SBC activities will capitalize on the relatively high ANC attendance and encourage women to request SP during ANC visits. Based on the results of the “client card” this activity will be expanded to ensure that providers dispense SP as per national guidelines.

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

Supporting Data not available.

Conclusion

More research is needed to answer this question. A planned malaria-specific health facility survey, which will look also at facilities that provide ANC services, will evaluate malaria case management and identify barriers to IPTp provision in pregnant women. The survey will include exit-interviews with randomly selected outpatients which will inform future healthcare provider training and supervision.

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 A31. IPTp Commodities Gap Analysis

Calendar Year	2019	2020	2021
Total Population ¹	26,914,742	27,614,525	28,332,503
SP Needs			
Number of pregnant women estimated²	1,345,737	1,380,726	1,133,300
Total number of pregnant women attending ANC 1 ³	1,168,100	1,202,613	990,504
Total number of pregnant women attending ANC 2 ⁴	1,051,290	1,010,195	832,024
Total number of pregnant women attending ANC 3 ⁵	946,161	848,563	698,900
Total number of pregnant women attending ANC	3,165,550	3,061,371	2,521,428
Total SP Need (in treatments)	2,532,440	2,449,096	2,017,142
Partner Contributions			
SP carried over from previous years	134,448	881,626	377,601
Stock available and usable at the end of the previous year	1,306,419	1,205,071	0
SP from Government	0	0	1,639,542

Calendar Year	2019	2020	2021
SP from Global Fund	0	0	0
SP from Other Donors	0	0	0
SP planned with PMI funding	1,973,200	740,000	0
Total SP Available	3,414,067	2,826,697	2,017,143
Total SP Surplus (Gap)	881,626	377,601	0

Footnotes

¹ Population used is from EPI unit. This differs from the population used in the 2018 MOP that had been estimated based on the 2014 general census

² Population*% of pregnant women (5% in 2019, 2020; 4% in 2021)

³ # pregnant women*ANC1 attendance rate

⁴ # pregnant women attending ANC1 - #pregnant women attending ANC1*dropout rate between ANC visits

⁵ # pregnant women attending ANC2 - #pregnant women attending ANC2*dropout rate between ANC visits

⁶ # pregnant women attending any ANC*NMSP IPTp coverage objective (80%)

Conclusion

Of note, the expected number of pregnant women in the population was reduced (from 5 percent of the population to 4 percent) for 2021 based on internal NMCP/MOH data. The amount of SP needed going forward was reduced accordingly.

Key Question 6

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

Supporting Data

There are no major issues that are impacting the amount of money allocated to this activity.

Conclusion

N/A

VII. 3. CROSS-CUTTING AND OTHER HEALTH SYSTEMS

3.A. SUPPLY CHAIN

NMCP objective
The overarching strategy for the management of the supply chain in Côte d’Ivoire is presented in the National Plan for Health Commodity Security, which was updated in 2015 and covers the 2016-2020 period. Its main objective is to improve the availability of and access to medicines, vaccines and other essential commodities at service delivery points. Although cost recovery is practiced at all levels of the health system, antimalarial products (ACTs, RDTs and SP) have been free of charge since 2010 to remove any financial barriers to access for treatment of malaria.

NMCP approach

To strengthen supply chain and stock management the NMSP 2016-2020 calls for:

- The development of stock management guidelines for health facilities and districts
- Training of health workers in stock management
- Contracting with the NPSP for commodity storage, management, and supply to health facilities.

The GOCI National Pharmaceutical Agency (*Programme National de Développement de l'activité Pharmaceutique* or *PNDAP*) develops and enforces health commodity policy and designs standard operating procedures (SOPs) for the health supply chain. The GOCI National Medicines Authority (*Direction de la Pharmacie, du Médicament et des Laboratoires*) is responsible for the registration of pharmaceuticals and for the approval of health commodities. The National Central Pharmacy (NPSP) is a nonprofit, nongovernmental organization (NGO) under contract with the GOCI to manage all implementation aspects of the national public health commodity supply chain system. In this regard, NPSP functions as the primary procurement agency for the GOCI health commodity supply chain. Other important agencies involved in the supply chain include the National Public Health Laboratory (*Laboratoire National de la Santé Publique* or *LNSP*), which is the main government entity responsible for quality assurance of pharmaceutical and other health commodities, and the National Commission to Coordinate Supply Chain Commodities (*Commission Nationale pour la Coordination des Approvisionnements en Médicaments* or *CNCAM*). The latter was created in 2015 by the Ministry of Health and Public Hygiene (*Ministère de la Santé et de l'Hygiène Publique* or *MSHP*) to act as a coordinating body for the supply planning and procurement of commodities for the different national health programs, including malaria. CNCAM is also charged with working with the programs to conduct commodity forecasts and quantifications, and to monitor stock levels and system performance.

PMI objective, in support of NMCP

PMI contributes to USAID's integrated supply chain technical assistance project, which is largely funded through the President's Emergency Plan for AIDS Relief (PEPFAR). PMI commodities are delivered to the NPSP which distributes them to the district-level pharmaceutical depot. Once commodities arrive at the districts, it is the government with the assistance of regional pharmacists which ensures that commodities reach the health facilities. The integrated supply chain technical assistance project ensures that unused commodities are redeployed to districts where they are needed. The project also supports forecasting, quantification, and electronic logistics management including data collection.

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

- Storage space rehabilitation work in 26 health district pharmacies out of 34 in the PMI zone have been completed
- mSupply (a mobile pharmaceutical supply chain software used for the management of pharmaceutical stores in warehouses and health facilities) deployed in all 51 sites in one

health district, including the large central hospital.

- Put in place a system to resolve alerts from the Early Warning System for district level stockouts in all 20 Health Regions.
- All redistribution needs for the 86 health districts were processed according to their needs
- Draft playbook available and training of the GTT-CAU (Groupe Technique de Travail – *Chaîne d'Approvisionnement d'Urgence*) on the methodology of its completion
- 10 regions (out of 20) held regional coordination meetings Last mile distribution performance of districts was introduced into the regional coordination meetings.
- 27 health districts (of 86) held their quarterly coordination meetings
- Preparations for the pilot of the eLearning Supply Chain Management training continued. Two of three planned tests (prior to the pilot) have been completed.
- Configuration update of the electronic Logistic management Information System (eLMIS) taking into account viral load inputs and anti-tuberculosis drugs completed
- Routine Data Quality Analysis of 61,7 percent of *La Nouvelle Pharmacie de la Santé Publique*'s (NPSP)'s direct clients and 78 percent of primary health facilities conducted
- Provided support to 30 (out of 86) health districts to carry out the physical inventory of their primary health facilities.
- Drafting, finalization, and national roll-out of Supply Chain Performance Monitoring Plan with the *Programme National de Développement de l'Activité Pharmaceutique* (PNDAP)
- Dashboards for supply chain decision makers at different tiers made available with 19 people trained
- End User Verification data collected in 40 districts
- Malaria commodities management control survey (ABC) conducted in 31 districts

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

With FY 2019 funds, PMI will continue its support to supply chain and pharmaceutical management. Activities will include:

- Support to nationwide distribution of SP, RDTs, ACTs and suppositories to health centers
- Strengthening of end-to-end supply chain system, including support to the computer-based inventory management system and contribution to the development of new strategies to improve health commodity distribution and transportation, especially to the

service delivery points

- Support to the annual survey on the malaria commodities management control survey ABC analysis ²in facilities that use large amounts of malaria drugs. This analysis allows for the identification of the 20% of health facilities which consume 80% of malaria commodities.
- Expand the capacity of the CNCAM to take the lead in commodity monitoring, forecasting, quantification and supply planning for malaria inputs, including annual quantification activities for malaria inputs
- Support semi-annual monitoring of the availability and utilization of key antimalarial commodities in 42 districts at the health facility level (End Use Verification)

PMI Goal

Ensure availability of quality products needed for malaria control and elimination (ACTs, RDTs, SP, Art. Inj., and ITNs) at health facilities and at the 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?

With the reduction of PEPFAR funding for Côte d'Ivoire in the FY 2019 budget, PMI resources are being targeted as a potential source of funding to continue supporting the supply chain and other technical assistance that USAID supports in Côte d'Ivoire. Despite this situation and due to other priorities including the operations cost for the 2.5 million ITNs being procured to support the 2021 mass distribution campaign, the FY 2020 MOP Team has only slightly increased the resources allocated to supporting technical assistance for the supply chain. Also, the PMI Team and the Health System Strengthening Team of USAID/Côte d'Ivoire are planning to conduct, in collaboration with the GOCI and other donors such as the World Bank, a quick assessment of capacity of the supply chain in order to identify future gaps and opportunities to adapt USG's investment to the current funding landscape.

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

² ABC methodology is a concept used in monitoring or an investigation which classifies health districts into 3 separate categories of consumption in order to target investigations and monitoring frequency

- "A" includes the 20% of districts consuming 80% of stocks. This group A must be monitored rigorously with accompanying investigations
- "B" includes the 30% of districts consuming 15% of stocks. This group B must be monitored regularly and investigated based on issues as they arise.

- "C" includes the 50% of districts consuming 5% of stocks. This group C should be monitored only periodically.

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 A32. Central Stock Levels for AL

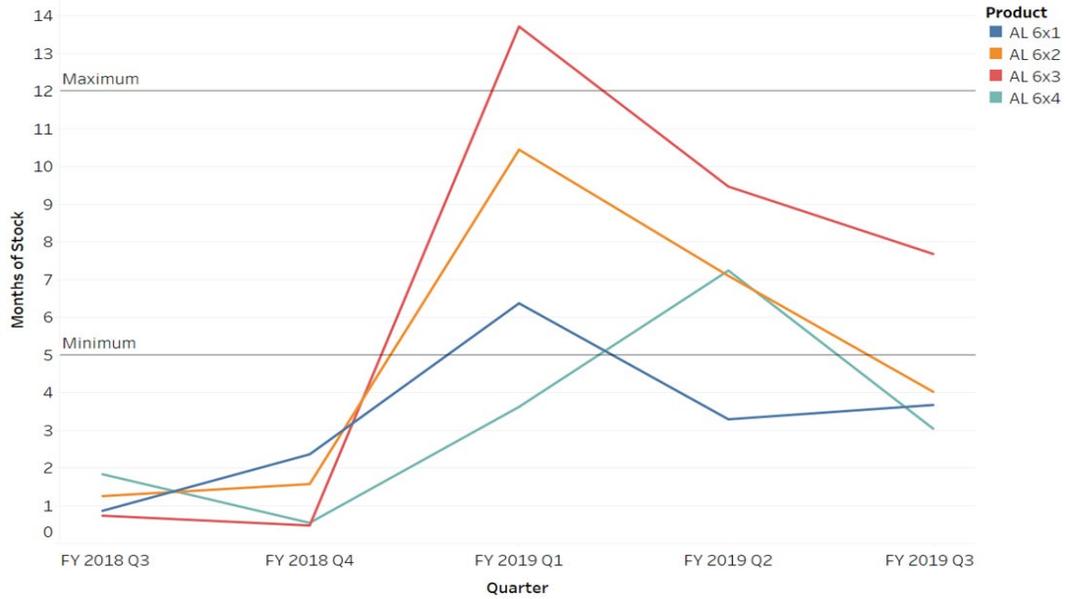


Figure A33. Central Stock Levels for AS/AQ

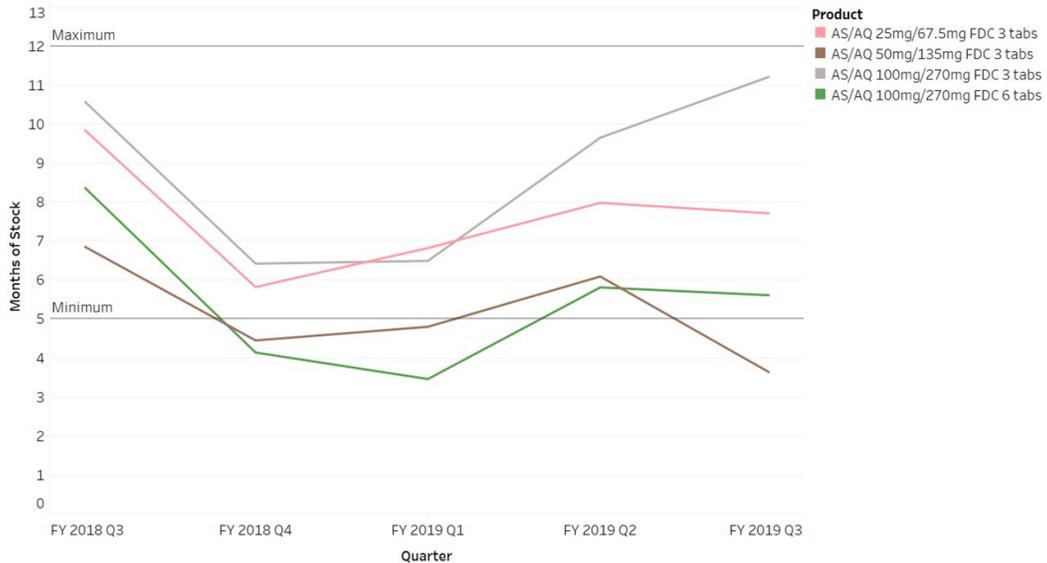
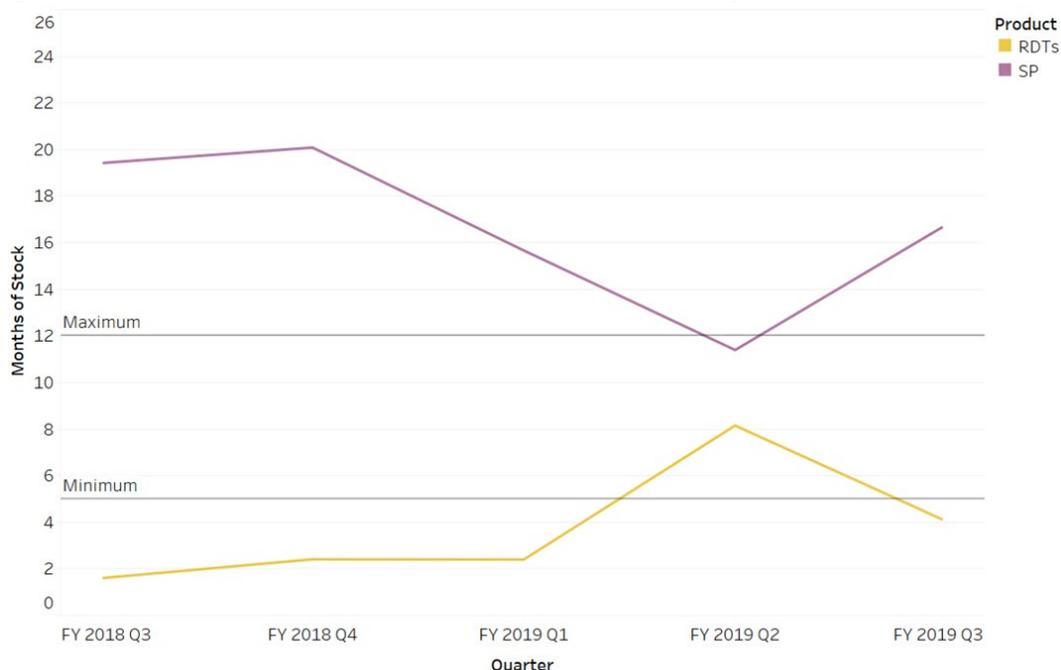


Figure A34. Central Stock Levels for RDTs, SP, and Injectable Artesunate, 60mg



Conclusion

Côte d’Ivoire's supply chain faces major challenges. While the supply chain reform was conducted in 2014 with USAID, PEPFAR and the GF’s support that significantly improved its performance, particularly commodities storage and distribution from the Central Medical Store to the district level, challenges remain at the district level with regards to the distribution of commodities to health facilities, including monitoring of consumption and regular supply of HF to avoid stock-outs. PMI, PEPFAR and other partners are currently exploring better ways to continue their support to the supply chain by reinforcing the capacity of major players at the central as well as at the district level and providing adequate technical assistance. In the meantime, PMI and other partners will enable the Government of Côte d’Ivoire to take more responsibilities to manage the supply chain with capacities and technical skills developed in the country by PEPFAR during the past fifteen years.

Key Question 2

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

Supporting Data

At health facilities level, the trends of stock-outs have improved. For example, the number of health facilities that had one-day stock -out of Artemether-Lumefantrine have improved from 42% in the last quarter of 2018 to 8% in the second quarter of 2019.

Conclusion

Community case management is a nascent activity that PMI and the Global Fund are supporting in Côte d'Ivoire. There are no detailed stockout data available to report from the community level. PMI's service delivery partner completed training of CHWs in the second quarter of 2019 and service delivery started at the community level with local NGOs selected in August. PMI has discussed with the NMCP the collection of community-level data as part of the DHIS2 platform. With regards to health facility level, available from the last quarter of 2018 to the third quarter of 2019, they show that stock-out indicators have improved at health facility level.

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?

Supporting Data

A recent malaria commodities management control survey (ABC) conducted in 31 districts by PMI revealed discrepancies between logistics data and epidemiological data.

Figure A35. Cote d'Ivoire Malaria Commodities Management Control Survey

Health Districts	ACT/ Epidemiological data	ACT/ Logistics data	Health Districts	ACT/Epidemiological data	ACT/Logistics data
Soubre	6800	8250	Tanda	5095	3594
San Pedro	9620	11068	Abengourou	11105	7431
Sassandra	6658	8769	Issia	6653	8316
Mankono	2630	9190	Duekoue	5673	7725
Bouake Nord Ouest	8456	9258	Guiglo	6259	19111
Bouake Nord Est	4427	4416	Zouanhouien	10487	5660
Bouake Sud	4791	5458	Vavoua	9110	7974
Boundiali	3970	4737	Daloa	11095	11074
Ferkessedougou	3625	5499	Bouafle	4395	6935
Korhogo	9158	10359	Touba	5954	7001
Bongouanou	7505	5686	Biankouma	4028	1089
Yamoussoukro	5600	6914	Man	12541	11160
Agboville	3847	4928	Katiola	1916	2214
Aboisso	6901	9489	Divo	17050	9500
Bouna	6419	6437	Meagui	5181	8106
Bondoukou	5750	5942			

Source: Results of malaria commodities management control survey (ABC) conducted by PMI in April 2019.

Conclusion

The above data clearly show important discrepancies between epidemiological data and logistics data in many districts. PMI will work with the NMCP, the Directorate of Health Information System, and the Global Fund to closely monitor the situation. Moreover, PMI will target districts

where the discrepancies are high between epidemiological data and logistics data to understand the underlying cause of the discrepancy, strengthen supervision, and support policy change regarding case management guidelines.

Key Question 4

What are the trends in LMIS reporting rates?

Supporting Data

The LMIS reporting rate is 90% (NMCP, e-SIG)

Conclusion

Despite the progress noted in strengthening the supply chain on the platform created with PEPFAR funding, which PMI is building on, many challenges remain to make malaria commodities always available at the service delivery points. PMI continues to work within the USAID program and with the PEPFAR to identify current and future gaps in improving the performance of the supply chain.

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

PMI supports distribution of commodities from the central warehouse to service delivery points. Also, PMI provides technical assistance to strengthen the eLMIS (forecasting, quantification) and redeployment of commodities from districts over-stocked to districts at risk of stock-outs. PMI provides capacity building support to NMCP staff to manage the supply chain. With the drastic reduction of the PEPFAR budget for Côte d'Ivoire, PMI is expected to provide more resources in support of technical assistance to the supply chain. The Global Fund pays for warehousing (5 percent of the value of imported commodities). But the Global Fund does not provide technical assistance to the supply chain system, apart from procuring commodities, although they recently procured 50 vehicles to support logistics in 50 districts.

Conclusion

Moving forward, PMI will allocate more resources to supply chain strengthening to scale up e-LMIS and m-Supply and improve governance and protect PMI commodities.

Key Question 6

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

Supporting Data

With the reduction in PEPFAR resources and staffing levels, funding for technical assistance has also been reduced, putting both HIV and PMI service delivery at risk. PMI will reprogram FY 2019 funds to support supply chain technical assistance. However, due to competing priorities, the FY 2020 budget for technical assistance will not be increased.

Conclusion

The impact of the reduction of PEPFAR support to the supply chain has yet to be determined. PMI and the Health System Strengthening section of USAID are working together to fill technical gaps in the supply chain, while continuing policy dialogue for the Government of Cote d'Ivoire to take on more responsibilities in managing the commodities supply chain and distribution system.

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

NMCP objective
The NMSP 2016-2020 aims to strengthen surveillance, monitoring, and evaluation at all levels of the health system by reinforcing the capacity of the Health Management Information System (<i>Systeme National d'Information Sanitaire</i> or <i>SNIS</i>). This system should be able to provide accurate data for entomological, epidemiologic, and parasitological surveillance. This plan follows the Roll Back Malaria (RBM) M&E guidance to provide a comprehensive framework for obtaining reliable and consistent data in order to assess progress toward the achievement of universal coverage of malaria interventions and the reduction of disease burden. Specific objectives include reinforcing the operational capacity of the management of malaria data, making monitoring and evaluation tools; reinforcing quality control and malaria information diffusion at all levels; making accurate strategic malaria data available; and evaluating follow up plans, both mid-course and final.
NMCP approach
Epidemiological routine data are already integrated in the HMIS from the district level to the central level (DIIS and NMCP). In addition, epidemiological survey data are intermittently reported to the NMCP through MICS and other Malaria Indicator Surveys (DHS 2012 and MICS 2016). In addition, the NMCP collects parasitological data through TES in order to ensure ACT and SP monitoring. Entomological data are collected regularly at sites by entomology institutes. These data are reported to the NMCP. Currently a formal working group outside of the trained professionals in the NMCP does not exist. There is currently a Division of Epidemiology which carries out some key activities, including data management and monitoring and evaluation. PMI will assist the Ministry of Health in developing an M&E group with influential stakeholders.

PMI objective in support of NMCP

- PMI supports the NMCP in building their capacity to conduct surveillance as a core malaria intervention using quality data from both surveys and routine health information systems.
- PMI supports the NMCP in building district-level capacity to conduct data quality control interventions, manage data, and use high quality data.
- PMI supports the NMCP for use of data to guide decision making.
- PMI supports the NMCP in collecting entomological data to conduct stratification and procure appropriate nets for mass campaigns and routine distribution.

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

- Supported the NMCP in creating a malaria indicator dashboard in DHIS2 based on WHO modules.
- Conducted routine data quality assessment in randomly selected health facilities and communities in two districts (Aboisso and Abengourou).
- Supported training of 10 Regional Malaria Advisors, six health facility staff from the public sector, and two health private facility staff in DHIS2.
- Provided technical and material support to the MOH to conduct Routine Data Quality Audits (RDQAs) in 12 health districts at 36 sentinel sites.
- Provided technical assistance for integrating community indicators in DHIS2.
- Conducted a Performance of Routine Information System Management (PRISM) including malaria data.
- Conducted data validation workshops with health district and private clinic data managers in Yamoussoukro.

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

- Provide technical assistance to the NMCP for strengthening MOH staff capacity on Regional Data Quality Assessment (RDQA)
- Conduct RDQA in the 20 health districts
- Organize training for MOH staff capacity building in Surveillance, Monitoring, and Evaluation
- Support the NMCP in developing performance standards for the management of malaria cases
- Organize malariology course for health district managers

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.

Are you proposing to increase, decrease, or maintain funding allocation levels for this activity? Why? What data did you use to arrive at that conclusion?

Funding levels for this intervention are increasing in recognition of the need for better and more timely routine data and to fund the first health facility survey for malaria service provision.

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 A36. Data Sources and Collection Activities 2015 - 2022

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

Data Source	Data Collection Activities	Year								
		2015	2016	2017	2018	2019	2020	2021	2022	2023
	Other (Knowledge, Attitudes and Practices Survey, Malaria Behavior Survey)									x
	Other (Malaria Impact Evaluation)									x
Malaria Surveillance and Routine System Support	Support to Parallel Malaria Surveillance System									
	Support to HMIS				x					
	Support to Integrated Disease Surveillance and Response (IDSR)									
	Other (Electronic Logistics Management Information System (eLMIS))									
	Other (Malaria Rapid Reporting System)									

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

Conclusion

Data from regularly conducted national surveys help guide better quantification and planning. Therefore, PMI and the Global Fund will continue to support surveys and routine information system strengthening using the DHIS2 platform as the main national source of 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 A37. HMIS-Support Activities in Cote d'Ivoire

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)					

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		
Data quality assessments (separate from supervision – funding for travel to lower levels)			X	X	
Program monitoring and technical assistance (funding for travel to lower levels)			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		
Data Use (analysis, interpretation, visualization (dashboards, bulletins, dissemination/feedback to lower levels, decision-making)		X	X	X	
Policy guidelines and coordination (updating policies, guidelines, supporting sub-committee meetings, supporting participation in sub-committee meetings)		X	X	X	
External relations/Communications/Outreach (support travel to international meetings and publications)		X	X		
Support to annual operational plans for national malaria program		X	X	X	
Desk review to catch “logic errors system” (provide TA to catch logic errors)			X		
Admin 1 Level (Region). PMI supports activities in 12 regions while Global Fund supports activities in 21 regions.					
Registers (warehousing, printing, distribution)		X	X	X	
Data quality assessments (separate from supervision – funding for travel to lower levels)		X	X	X	
Program monitoring and technical assistance (funding for travel to lower levels)		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)					
Human Resources (secondment of person for malaria SM&E, office/team for SM&E)		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		
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	
Adaptation of checklists and job-aides					
Participation in national meetings (support for travel costs)			x	x	
Support to Annual Operational Plans for National Malaria Program				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	
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	x	
Human Resources (secondment of person for malaria SM&E, office/team for SM&E)					
Annual planning with Region (support travel)					
Facility Level					
Data collection/entry, summary, and transmission (training, re-training, computers, internet, tools)		x	x	x	
Supervision of CHWs (training, traveling, administering supervision tools/checklists of community health workers)		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		
Data use (analysis, interpretation, visualization (dashboards), dissemination/feedback to CHWs, decision-making)		x	x	x	
Monthly/Quarterly data quality review meetings (support for travel)		x	x	x	
Community Level					
Data collection/entry and transmission (training, re-training, tools)		x	x	x	
Data use (analysis, interpretation, decision-making)		x	x	x	
Monthly/quarterly data quality review meetings (support for travel)		x	x	x	

Conclusion

Poor data quality currently hinders the effective use of data for decision making in Côte d'Ivoire. To improve the quality of routine data, PMI will fund a Data Specialist who will provide technical assistance to the NMCP, and coordinate efforts to improve data management with DHIS2, in close collaboration with the Directorate of Information Systems (DIIS).

In addition, the Global Fund will support SME activities in its target zone with 21 health regions. Instead of supervision of care providers and monitoring activities, RDQA will be conducted in these regions for improving data quality.

Key Question 3

What are the outcomes of HMIS strengthening efforts?

Supporting Data

Figure A38. HMIS Strengthening Efforts

		2017	2018 (N/A)*
Timeliness	% of reports received on time	51.8%	
Completeness	"Confirmed malaria cases for children under 5 years of age" was reported in X% of facility-months	95.4 %	
Accuracy	Populate with most recent DQA data PRISM reports the indicator "children under 5 malaria cases "	At the 20% tolerance level, accuracy is only 37%, down from the year 2012 for the same indicator (52%). *If the gap between the reported data and the health facility data is above 20%, these data are not acceptable because they are not accurate.	

Conclusion

The timeliness of routine data is 51.8 percent and the completeness is 95.4 percent. Accuracy is low at 37 percent. Thus, improving the quality of routine data will be a national priority. The main challenge to data quality is accuracy. Thus, PMI will provide technical assistance for onsite data verification and routine data quality assessment within health facilities.

Key Question 4

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

Supporting Data

In Côte d'Ivoire, data are collected in consultation registries within the health facility (including community data) and reported with a paper-based reporting tool (*Rapport Système Information et de Gestion* or *SIG*). This report is transmitted to the district level for data entry into the DHIS2 platform. However, there are two gaps: from the primary tool (*registry*) to the paper-based report of the health facility and from the paper-based report (*SIG*) to the DHIS2 report for the same period and the same health facility.

Thus, monthly internal data quality control should be done within a health facility by care providers. Afterwards, a district data manager should conduct a monthly data quality control focused on malaria data. RDQA should be conducted quarterly by the regional data manager. One issue expressed by the Division of Information Statistics is the excessive burden placed on the reporting systems by PEPFAR, which required tens of indicators not always useful or relevant, but which leads to less priority being placed on malaria data.

Conclusion

PMI should support the NMCP for on-site data verification and RDQA to improve routine data quality for strengthening routine information systems.

3.C. SOCIAL AND BEHAVIORAL CHANGE (SBC)

NMCP Objective
The NMCP aims to increase knowledge levels of malaria from baseline to at least 80 percent by 2020 and to improve uptake and correct use of key malaria interventions from baseline to 80 percent by 2020.
NMCP Approach
The National Communications Strategy for Malaria Control indicates that formative research will be conducted to inform the development of SBC interventions, and that coordination, supervision, and mentorship, including routine monitoring, are central to increasing the capacity for SBC at all levels and by all stakeholders. PMI supported the NMCP's objectives with the implementation of the MBS. Findings from the MBS are now being used to revise the National SBC Strategy, and to inform a National Malaria Control Strategy. PMI also supported the NMCP to develop national community mobilization and advocacy plans.
PMI Objective in Support of NMCP
PMI supports the NMCP in building their capacity to conceive, develop, and implement high quality SBC interventions aimed at increasing knowledge levels of malaria to least 80 percent and improving uptake and correct use of key malaria interventions by 2020. PMI supports this work at the district level with local NGOs.
PMI-Supported Recent Progress (Past 12-18 Months)
<ul style="list-style-type: none">● Conducted a nationally-representative MBS.● Supported community mobilization for National Malaria Day celebrations in 2018 and 2019.● Developed the National Community Mobilization Plan.● Developed the National Advocacy Plan.● Supported training on malaria care seeking and ITN use for individuals and groups involved in community-based health promotion and women's groups.● Supported revision of communication tools and messages.

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

- Support the development of a National Malaria Control Strategy and a new SBC Strategy based on MBS findings .
- National-level support for SBC activities to maintain ownership and proper use of ITNs and increase ANC attendance and demand for IPTp, early care seeking, demand for appropriate malaria diagnostics, and adherence to treatment.
- Review results of the “client card” pilot and expand to other districts (if results are positive). The activity was developed to ensure that providers dispense SP as per national guidelines.
- Support community-based SBC through community-based organizations in order to increase net ownership and use, ANC attendance and demand for IPTp, early care seeking, demand for proper malaria diagnostics, and adherence to treatment at the community level.
- Support health facilities in five districts in order to promote proper service delivery by providers.
- Support local radio to promote net ownership and use, ANC attendance and demand for IPTp, early care seeking, demand for proper malaria diagnostics, and adherence to treatment.
- Training and supervision of healthcare providers to improve IPTp coverage with adaptive tools for checking IPTp service delivery, and client sensitization on IPTp before receiving ANC services.

PMI Goal

Through the use of social and behavior change interventions and in alignment with the 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.

Are you proposing to increase, decrease, or maintain funding allocation levels for this activity? Why? What data did you use to arrive at that conclusion?

Based on the analyses in the different intervention sections (summarized below), as well as the availability of new data on determinants of behavior, PMI is proposing to increase the funding allocation for SBC activities. In collaboration with the Global Fund, the NMCP is poised to make a major impact on changing malaria-related behaviors.
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 supports this prioritization?

Supporting Data

After reviewing the available data (MBS and a previous knowledge, attitudes, and practices survey), PMI-supported SBC efforts will be focused on three behaviors.

Figure A39. PMI-Supported SBC Efforts

Behavior	Target Population	Geographic Focus	Justification
Prompt care seeking for children under five years of age	Caretakers of children under five years of age	All PMI-supported districts	Only 62% of children under five with a fever in 24 hours sought correct treatment after the onset of fever.
Sleep under nets (ITNs) every night	Household members	All PMI-supported districts with a special emphasis on the northeast	65% of households used ITNs every night. The use: access ratio is below .80 in districts in the northeast of the country.
Effective delivery of IPTp	Care providers (nurses, midwives and physicians)	All PMI-supported districts	Gap between ANC 4 attendance and IPTp3: is over 50 percent of respondents in 2016 MICS reported ANC4 attendance but only 23% reported receiving at least 3 doses of IPTp.

Conclusion

After reviewing the available data (MBS and a previous knowledge, attitudes, and practices survey), PMI-supported SBC efforts will be focused on three behaviors: prompt care-seeking for children under five years of age; sleeping under an ITN every night; and effective delivery of IPTp.

According to the MBS, 65 percent of households use ITNs every night. As such, PMI and the NMCP will increase funding for SBC to raise awareness of the importance and effectiveness of ITNs in advance of the mass distribution campaign planned for 2021. SBC activities will also be intensified during and after the campaign, with the goal of increasing net utilization.

For the majority (89.6 percent) of cases of fever in children under five years of age, care was sought at some point during the illness. While 73.2 percent of women surveyed said they sought care for the child with a fever on the same day or the day after the fever began, care in many cases was not sought in a health facility or from a community health worker. Indeed, less than two-thirds (62.8 percent) of children with fever were brought to a health facility or community health worker as first recourse within 24 hours.

There is a good level of knowledge about the number of ANC visits a pregnant woman should make from the first consultation. However, the number of doses of SP that a pregnant woman must receive is not well known. Indeed, less than a quarter (22.6 percent) of all respondents (general population, male and female) and a quarter of all women know that a pregnant woman should receive at least three doses of SP during pregnancy. Even when women attend the required number of ANC visits, they are still not getting all the recommended doses of SP. This may be due to health service provider behavior and a lack of supervision at the facility level. A planned malaria-specific health facility survey, which will look at facilities that provide ANC services, will evaluate malaria case management and identify barriers to IPTp provision in pregnant women. The survey will include exit-interviews with randomly selected outpatients which will inform future healthcare provider training and supervision

SBC activities will capitalize on the relatively high ANC attendance and encourage women to request SP during ANC visits. If the positive preliminary results of the “client card” intervention are borne out, this activity will be expanded to ensure that providers dispense SP as per national guidelines.

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

Figure A40. Summary of Determinants and Gaps for FY2020 Prioritized Behaviors

Behavior	Key Facilitators	Key Barriers	Knowledge Gaps
Prompt care seeking for children under five years of age	<ul style="list-style-type: none"> Favorable attitudes toward prompt care seeking Perception that immediate treatment is the norm Perception that community health workers are good at treating malaria in children Perception of the availability of antimalarial drugs in the health center 	<ul style="list-style-type: none"> Perception of low quality of services at health facilities Lack of accessibility (by zone) Lack of accessibility (by wealth quintile) Belief in self medication 	Behavioral determinants are well-known due to the MBS, but more information is needed on provider behavior

Behavior	Key Facilitators	Key Barriers	Knowledge Gaps
Sleep under ITNs every night	Favorable attitude towards use of ITN	Lack of knowledge on malaria transmission	Behavioral determinants are well-known due to the MBS
Effective delivery of IPTp	Treatment and training manuals have been updated to reflect the new IPTp policy	Suboptimal Adherence to MIP (IPTp) Guidelines Among Health Workers	More information is needed on provider behavior

Conclusion

Given the findings analyzed above, SBC interventions based on newly-available data on behavioral determinants are poised to markedly increase uptake of priority behaviors. PMI will assist the NMCP to analyze supervision data to better understand gaps in health care provider behaviors. PMI will also support a malaria-specific health facility survey, which will look at facilities that provide ANC services. This survey will evaluate malaria case management and identify barriers to IPTp provision in pregnant women. The survey will include exit-interviews with randomly selected outpatients and inform future healthcare provider training and supervision

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

Based on the results of a needs assessment at the beginning of PMI in Côte d’Ivoire, an overall NMCP capacity assessment and the MOP program inventory, capacity building for SBC in Côte d’Ivoire should be conducted through the following interventions:

- Establish an SBC TWG
- Revise the National Malaria SBC Strategy in support of the new National Malaria Control Strategy and based on the MBS results
- Develop and implement the National Community Mobilization Plan
- Develop and implement the National Advocacy Plan
- Develop tools and messages according to the MBS findings
- Involve district staff in the planning, implementation, monitoring, and evaluation of SBC activities at the operational level

Conclusion

PMI will support the NMCP’s efforts to strengthen SBC capacity in Côte d’Ivoire. PMI will encourage the identification of an SBC lead and SBC training for ancillary staff within the NMCP’s communication unit.

Key Question 4

What are the in-country considerations (e.g. in-country staffing capacity, political climate, security concerns) that impact your funding allocation in this category? If there is a specific budget line item in Table 2 that is not covered by the above questions, please address here.

Supporting Data

Current NMCP staff lack expertise in SBC and therefore are more familiar with medical interventions than with interventions designed to address psychosocial or community-level determinants of health behavior. As such, the NMCP plans to hire an SBC expert to lead the communication unit. PMI will support the NMCP's efforts to train ancillary staff in SBC and encourage attendance at key international conferences (RBM SBC Working Group, ASTMH, AMP, etc.).

Conclusion

PMI will support the NMCP in building a strong communication unit with skilled SBC staff. Capacity building will take place as part of a five-year organizational and management action plan being supported by PMI.

3.D. PROGRAM EVALUATION AND OPERATIONAL RESEARCH

NMCP objective
<ul style="list-style-type: none">• The National Malaria Strategic Plan (NMSP) states that operational research is to guide the strategic plan implementation and provide evidence for innovation.• The NMSP identifies service delivery in public and private facilities, malaria-related deaths, therapeutic efficacy studies, and entomologic studies as topics for potential study.
NMCP approach
<ul style="list-style-type: none">• Côte d'Ivoire has a number of research institutes, several of which are represented in the Scientific Advisory Group which works closely with the NMCP. To date, most recent activities tend to be more academic and very little research is done to address programmatic questions at the district level and priority health programs.• The NMSP 2016-2020 states that the NMCP is assisted by its Scientific Advisory Group (GSA) and a steering committee whose mission is to support the implementation of activities. The strategic plan emphasizes the need for better monitoring and evaluation. The plan also highlighted that: 1) all studies (entomological, parasitological, and vector transmission) initiated by the NMCP should be conducted in collaboration with the consortium of research centers via the GSA; and 2) any research activities should support local capacity building and the reinforcement of coordination between NMCP and researchers to harmonize and prioritize research efforts.

PMI objective, in support of NMCP

In the last year, PMI, through their discussion with the NMCP, has supported the efforts to evaluate malaria-related mortality in Côte d'Ivoire and the barriers to collecting accurate mortality data. This has been part of a larger effort to support improved malaria surveillance and routine data quality through DHIS2. In the next year PMI aims to work with the NMCP to develop studies which look at service delivery – both at the facility and community level with the goal of evaluating the benefits of new strategies for Côte d'Ivoire such as community based directly observed therapy (DOT) and/or SMS systems to improve IPTp3 performance. There is also a desire to evaluate the current practice of mobile health care delivery by integrated facility-based teams to communities located more than 5 km from the nearest health center, and to some urban slums with poor health indicators

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

- In 2018, PMI supported a preliminary evaluation of the national surveillance system to capture and monitor deaths related to malaria. The findings of this evaluation, conducted with the M&E office of the NMCP, has led to a larger audit of malaria associated deaths which is being supported by the Global Fund.
- In 2019, PMI supported the first malaria behavior survey (MBS) on the psychosocial determinants of malaria-related behaviors from a representative nationwide sample of households in Côte d'Ivoire.

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

- PMI would like to support a malaria-specific health facility survey in a nationally representative sample of health facilities.
- PMI will continue to provide technical assistance to the NMCP in supporting activities conducted by the GSA with funding from the NMCP/Global Fund. These studies include the audit of data quality around malaria-related mortality and the post campaign evaluation.

PMI Goal

- PMI will support a Health Facility Survey.
- PMI will conduct OR/PE that helps 1) evaluate coverage of population at-risk, quality of intervention(s), and efficiency in intervention delivery, 2) study reducing remaining malaria transmission and disease burden, 3) test effectiveness of new or evolved priority interventions and strategies, and 4) 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.

Are you proposing to increase, decrease, or maintain funding allocation levels for this activity? Why? What data did you use to arrive at that conclusion?

PMI is proposing to increase the funding dedicated to program evaluation/operational research. The Health Facility Survey will be the first large scale intervention supported by PMI funds.

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

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 A41. Current PE/OR Conducted with USG, GF, Multilaterals or Other Major Donors

Source of Funding	Implementing institution	Research Question/Topic	Current status/ timeline
Global Fund	Global Challenge Corporation (GCC)	Audit of notification of deaths related to malaria in Côte d'Ivoire	Data collection
Global Fund	Global Challenge Corporation (GCC)	Evaluation of the 2017-2018 ITN National Mass Distribution Campaign	Protocol Development
Global Fund	Scientific Advisory Group (GSA)	Therapeutic Efficacy Study	2019 – Data collection is complete and is currently being analyzed

Conclusion

- PMI would like to support a malaria-specific health facility survey in a nationally representative sample of health facilities to evaluate malaria case management and malaria in pregnancy services, assess health facility readiness, and to assess the impact of stockouts.
- This survey is a priority for the NMCP, and no partner is in a position to conduct it currently. It appears that there has been an uneven adoption of national guidelines, especially around obtaining a positive diagnostic test prior to administering treatment. Given that the health care system is highly decentralized with much staff turnover and that supervision is a challenge, this study is needed to document why provider behavior has lagged despite previous outreach efforts. The NMCP would also like to see if there is an effect on patient acceptability and ultimately patient treatment outcomes.
- The next step would be to identify a partner to work with the NMCP and Scientific Advisory Group to begin project planning.

Key Question 2

In the technical areas covered above, are there specific issues in any of the intervention areas that merit further exploration, in anticipation of establishing intervention strategies that are or could become available in the future that could be applied?

Supporting Data

Data quality remains an overarching issue for the NMCP and the for the data compiled in the districts from health facilities. PMI will support activities to improve data quality as part of the M&E activities, but data quality may impact program evaluation and research activities.

Conclusion

In addition to the activities listed above, PMI will continue to look for opportunities to support the NMCP in improving data quality.

Key Question 3

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

Supporting Data

There are no significant in-country considerations impacting the funding allocation currently.

Conclusion

N/A

3.E. OTHER HEALTH SYSTEMS STRENGTHENING

NMCP objective
The NMCP's goals are to secure adequate office space, to enhance organizational and management capacity, and to hire staff with technical expertise to address identified gaps.
NMCP approach
The NMCP's current office space is limited, and according to a recent assessment by PMI, organizational and management capacity is lacking. To address space limitations, the NMCP plans to move to a larger location (yet to be identified). To address organizational capacity, the NMCP is considering PMI recommendations on how to better organize the different service units to improve managerial oversight and program functioning. Regarding staffing, the NMCP will approach the Ministry of Health with plans to recruit staff with the necessary technical expertise and skills to address identified gaps.
PMI objective, in support of NMCP Infrastructure
Currently, PMI has no plans to support NMCP infrastructure given other priorities and the need to address other important programmatic gaps.

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

PMI recently assessed the organizational and management capacities of the program. PMI has programmed resources in the FY 2019 and FY 2020 MOPs to support some of the recommendations (not including infrastructure) of the assessment, including coordination and management capacity strengthening. PMI will work with the Global Fund and the MOH to cover the capacity strengthening workplan's gaps during the next few years.

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

n/a

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

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
	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
	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

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
	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

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
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
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 cannot track all ANC visits in HMIS	Country policy specifies the number of contacts to 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.

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

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
			stock holding levels provided on ad hoc basis	unplanned means Resupply performance monitored post-activity	on a regular basis and augmented with 3PLs Resupply performance monitored real-time	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
	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	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	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

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
		none by facility level on central level.			management, medical records, laboratory management, enterprise resource planning systems, and health information management systems)	reviewed and updated to reflect best practices for data exchange, messaging, and systems security.
	Regulatory, Policy and Governance	<p>Legal basis to enable a medicines (and related health commodities - e.g., devices, vaccines, etc.) regulatory agency to function is absent or inappropriate</p> <p>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).</p> <p>Human and financial capacity to enable regulatory functionality, weak or absent</p> <p>No approved supply chain strategic plan</p>	<p>Medicines framework exists and is sufficient to support basic regulatory functions including clinical dossier review (licensing) and marketing authorization with registration.</p> <p>Documented domestic financial support to enable regulatory activities - including human resources</p> <p>Approved supply chain strategic plan but not updated recently. Poorly implemented strategic plan</p>	<p>All SDP levels have in place policies that address STG, quality assurance and HR.</p> <p>Management policies for the supply chain system are in place at the MOH level.</p> <p>Policy and strategic leadership is not always translated into robust implementation plans, and supportive supervision, capacity building and guidance to managers within the system.</p> <p>No consistent approach to pharmacovigilance or a standard reporting structure for pharmacovigilance events</p> <p>Overall quality management system in place to support interface of product licensing, registration, manufacturing, post-marketing</p>	<p>Strong policy and strategic leadership by government, with a firm grasp of budgets and financial sustainability</p> <p>Robust implementation plans, and supportive supervision, capacity building and guidance to managers within the system.</p> <p>Regulatory and policy bodies in alignment to support quality product availability</p> <p>National and standardized Pharmacovigilance or a standard reporting structure for pharmacovigilance events in place, not fully functional.</p> <p>Approved (and up to date) supply chain strategic plan (contains clear roles and</p>	<p>The MOH leads strategic functions such as, policy formulation-quality assurance and overseeing the funds required for policy implementation.</p> <p>Ability to ensure product quality, automated drug registration process, clear/transparent importation process, robust post-market surveillance system and, track and trace regulations developed and/or in the process of implementation.</p> <p>Approved (and up to date) supply chain strategic plan (contains clear roles and responsibilities, stakeholder mapping, costs). Includes risk mitigation plan.</p>

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
				surveillance. Approved (and up to date) supply chain strategic plan. Partially implemented	responsibilities, stakeholder mapping, costs).	

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

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
	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
	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.

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
	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.
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

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
General Infrastructure	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.
	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

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
	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)