PMI | U.S. PRESIDENT'S MALARIA INITIATIVE

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

U.S. PRESIDENT'S MALARIA INITIATIVE

TANZANIA (Zanzibar)

Malaria Operational Plan FY 2020

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ABBREVIATIONS

ACD	Active case detection
ACT	Artemisinin-based combination therapy
ADDO	Accredited drug dispensing outlet
AL	Artemether-lumefantrine
ANC	Antenatal care
AS/AQ	Artesunate-amodiaquine
BMGF	Bill and Melinda Gates Foundation
CDC	Centers for Disease Control and Prevention
CHMT	Council Health Management Team
CHW	Community Health Worker
CY	Calendar year
DHIS2	District Health Information System 2
DHMT	District Health Management Team
DMSO	District Malaria Surveillance Officers
DQA	Data quality audit
eIDSR	Electronic Infectious Disease Surveillance and Response
eLMIS	Electronic Logistics Management Information System
EPI	Expanded Program on Immunizations
EUV	End-use verification
FANC	Focused antenatal care
FELTP	Field Epidemiology and Laboratory Training Program
FSN	Foreign Service National
FY	Fiscal year
GHI	Global Health Initiative
Global Fund/ GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
HCW	Health care worker
HIM	Health Information Mediator
HIS	Health Information System
HMIS	Health Management Information System
HSS	Health systems strengthening
IDSR	Infectious disease surveillance and response
IEC	Information, education, communication
ILS Gateway	Integrated Logistic System Gateway
IPRS	Implementing Partner Reporting System
IPTp	Intermittent preventive treatment for pregnant women
IRS	Indoor residual spraying
IT	Information Technology
ITN	Insecticide-treated mosquito net
LMU	Logistics Management Unit

M&E	Monitoring and evaluation
MCH	Maternal and child health
MCN	Malaria Case Notification System
MEEDS	Malaria Epidemic Early Detection System
MIP	Malaria in pregnancy
MIS	Malaria indicator survey
MoH	Ministry of Health
MOHCDGEC	Ministry of Health, Community Development, Gender, Elderly and Children
MOP	Malaria Operational Plan
mRDT	Malaria rapid diagnostic test
MSD	Medical Stores Department
MSDQI	Malaria Service and Data Quality Improvement project
NHLQATC	National Health Laboratory and Quality Assurance Training Center
NIMR	National Institute for Medical Research
NMCP	National Malaria Control Program
OR	Operational research
OTSS	Outreach training and supportive supervision
PBO	Piperonyl butoxide
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PCR	Polymerase chain reaction
PCV	Peace Corps volunteer
PMI	U.S. President's Malaria Initiative
PO-RALG	President's Office – Regional Administration and Local Government
QA/QC	Quality assurance/quality control
RA	Resident Advisor
RBM	Roll Back Malaria
RCH	Reproductive and child health
RDT	Rapid diagnostic test
RGoZ	The Revolutionary Government of Zanzibar
SBC	Social and behavior change
SM&E	Surveillance, monitoring, and evaluation
SNP	School net program
SP	Sulfadoxine-pyrimethamine
SPA/TSPA/SPAm	Service Provision Assessment/Tanzanian Service Provision Assessment/Service Provision Assessment for Malaria
TA	Technical assistance
TDHS	Tanzania Demographic and Health Survey
TES	Therapeutic efficacy study
THMIS	Tanzania HIV and Malaria Indicator Survey

TWG	Technical working group
UCC	Universal coverage campaign (of ITNs)
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization
ZAMEP	Zanzibar Malaria Elimination Program
ZILS	Zanzibar Integrated Logistics System

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 Tanzania to end malaria. PMI has been a proud partner of Tanzania since 2006, helping to decrease child death rates by 40 percent through investments totaling over $573 million.

The proposed PMI fiscal year (FY) 2020 budget for Tanzania is $40 million. This Malaria Operational Plan (MOP) outlines planned PMI activities in Tanzania 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 Tanzania as well as other donors and partners.

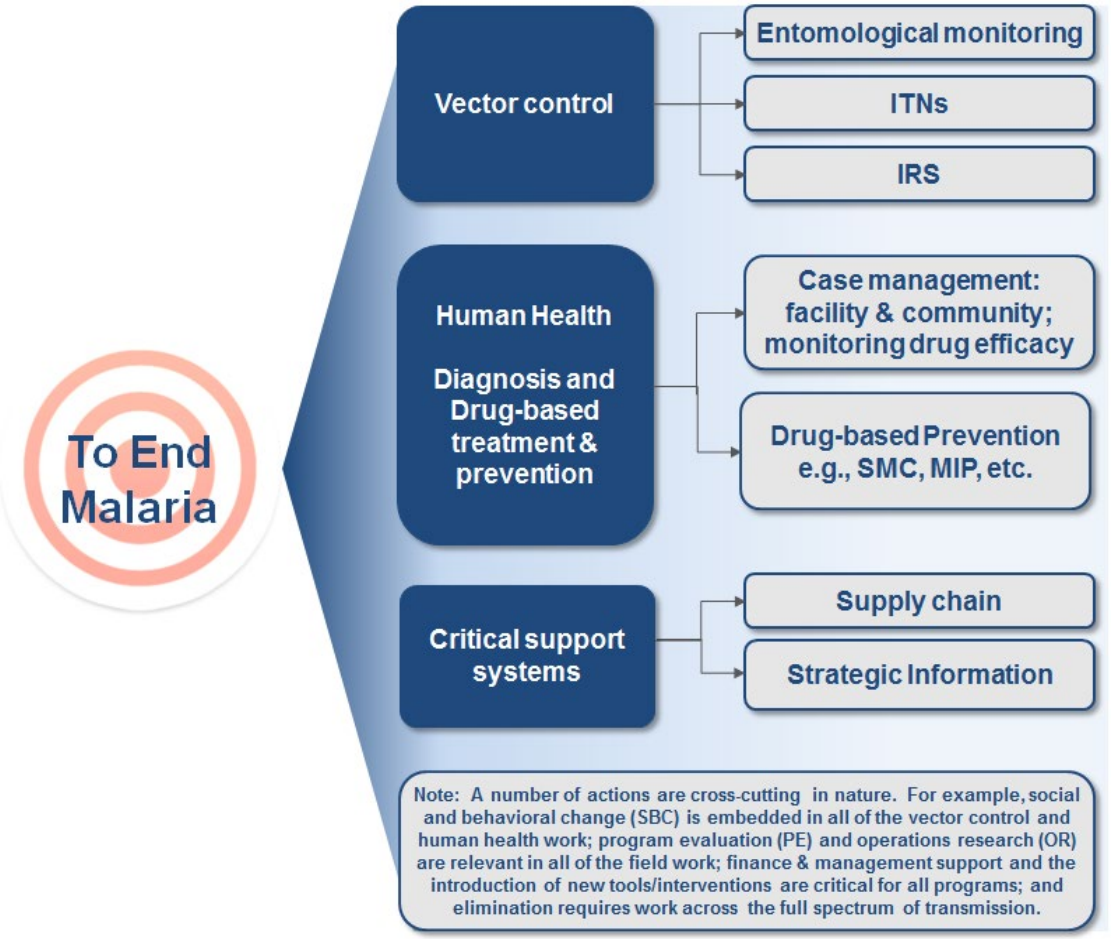
Tanzania at a glance

- **Geography:** Located in East Africa along the Indian Ocean with a land area of over 947,000 square kilometers. Comprised of the Mainland, Zanzibar (two islands, Unguja and Pemba), and a number of offshore islands.
- **Climate:** Largely tropical climate with regional variations due to topography, with cooler, less humid regions in the highlands. The north and east experience two rainy seasons in October - December and March - May, while the central, southern and western regions have one longer wet season from October through April or May.
- **Population in 2019:** 54,265,158 (National Bureau of Statistics)
- **Population at risk of malaria:** 100% (WHO)
- **Principal malaria parasites:** *Plasmodium falciparum* (NMCP; ZAMEP)
- **Principal malaria vectors:** *An. arabiensis*, *An. funestus* s.s., *An. gambiae* s.s. (National Institute of Medical Research; ZAMEP)
- **Malaria incidence per 1000 population:** 113/1000 (WHO)
- **Under-five mortality rate:** 67/1000 (2015/16 DHS)
- **World Bank Income Classification & GDP:** Low income - GDP per capita $1,051 (World Bank Group)
- **Political system:** Multi-party democratic republic
- **Trafficking in Persons designations, 2016-2018:** Tier 2 Watchlist Country (Department of State Trafficking in Persons Report, June 2019)

- **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)
    - Swiss Development Corporation (SDC)
    - Comic Relief
- **PMI Support of National Malaria Control Strategy:** As a major partner of the Tanzania National Malaria Control Program and the Zanzibar Malaria Elimination Program, PMI aims to help Mainland Tanzania reduce its malaria burden with a focus on the high to moderate regions, and to help Zanzibar push towards its goal of elimination. PMI supports most of the interventions laid out in both programs' strategic plans. (See III. Overview of PMI's support of Tanzania's Malaria Control Strategy for additional details)
- **PMI Investments:** Tanzania began implementation as a PMI focus country in FY 2006. The proposed FY 2020 PMI budget for Tanzania is $40 million; that brings the total PMI investment to over $610 million.

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 Tanzania'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/Tanzania will continue to rely on and engage with local partners such as the National Institute of Medical Research (NIMR), Ifakara Health Institute (IHI), and Muhimbili University of Health and Allied Sciences (MUHAS). Finally, PMI/Tanzania is continuing to build private sector partnerships to extend case management and service delivery through Accredited Drug Dispensing Outlets (ADDOs) and working alongside other partners to advocate for the inclusion of mRDT testing in their suite of services offered.

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

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

II. MALARIA SITUATION AND MALARIA CONTROL PROGRESS IN ZANZIBAR

The malaria burden in Zanzibar has remained low over the past several years, with a positivity rate in those seeking treatment at 1.3 percent in 2018. The number of total malaria cases increased from 4,171 in 2017 to 5,146 in 2018, with five malaria deaths reported in 2018. The 2017 Tanzania MIS showed a malaria prevalence in Zanzibar of 0.2 percent by mRDT, ranging from 0 percent in Pemba to 0.4 percent in Unguja. High coverage of ITNs and IRS has resulted in a shift in the malaria vector population from *An. gambiae* s.s. to predominantly *An. arabiensis* and reflects the predominant outdoor biting pattern observed on both Pemba and Unguja.

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

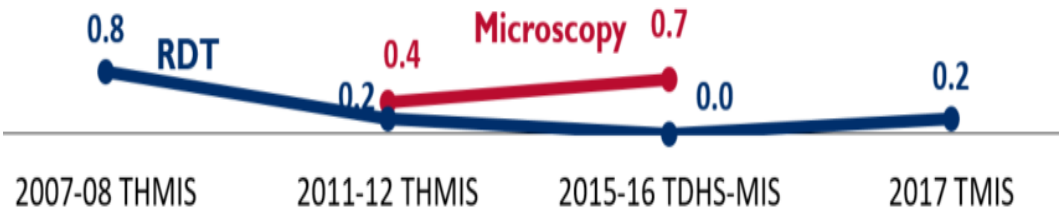


Figure 3. Trends in Prevalence of Low Hemoglobin, *Percent of Children Age 6-59 Months with Moderate-to-Severe Anemia (Hemoglobin < 8.0 g/dl)*

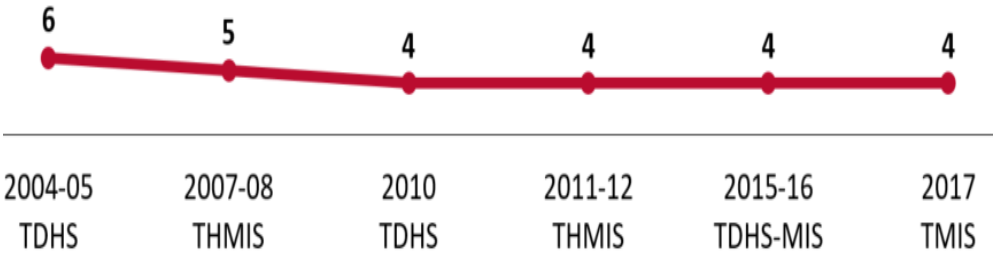


Figure 4. Malaria Parasite Prevalence among Children under Five Years of Age by Geographic Area

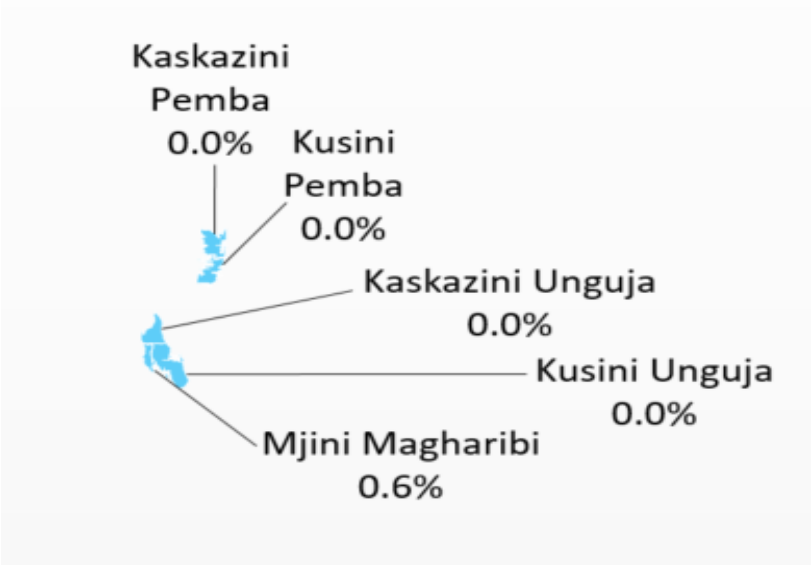


Figure 5. Key Indicators for Malaria Prevention and Treatment Coverage and Impact Indicators from Demographic Health Surveys (DHS) and Malaria Indicator Surveys (MIS) from 2004-2017.

Indicator	2004-05 TDHS	2007-08 THMIS	2010 TDHS	2011-12 THMIS	2015-16 TDHS-MIS	2017 TMIS
% Households with at least one ITN	28	72	76	74	74	79
% Households with at least one ITN for every two people	10	34	39	43	40	42
% Population with access to an ITN	18	57	58	n/a	57	62
% Population that slept under an ITN the previous night*	16	44	45	44	47	59
% Children under five years old who slept under an ITN the previous night*	22	59	55	51	56	67
% Pregnant women who slept under an ITN the previous night*	20	51	50	36	52	63
% Children under five years old with fever in the last two weeks for whom advice or treatment was sought	80	81	73	69	79	82
% Children under five with fever in the last two weeks who had a finger or heel stick	n/a	n/a	n/a	26	34	31
% Children receiving an ACT among children under five years old with fever in the last two weeks who received any antimalarial drugs[3]	n/a	n/a	n/a	n/a	n/a	n/a

Indicator	2004-05 TDHS	2007-08 THMIS	2010 TDHS	2011-12 THMIS	2015-16 TDHS-MIS	2017 TMIS
% Women who received two or more doses of IPTp during their last pregnancy in the last two years[4]						
% Women who received three or more doses of IPTp during their last pregnancy in the last two years[4]						
Under-five mortality rate per 1,000 live births	101	79	73	n/a	56	n/a
% Children under five years old with parasitemia (by **microscopy,** if done)*	n/a	n/a	n/a	0.4	0.7	n/a
% Children under five years old with parasitemia (by **RDT**, if done)*	n/a	0.8	n/a	0.2	0.0	0.2
% Children under five years old with severe anemia (Hb<8gm/dl)	6	5	4	4	4	4

Footnotes:

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

[2]This indicator is not included in this table, since IPTp is not recommended in Zanzibar.

[3]These values were suppressed from final reports due to insufficient sample size.

*DHS surveys are generally fielded during the dry season, as opposed to MIS surveys, which are deliberately fielded during the high transmission season, which should be taken into consideration when interpreting these indicators.

[4]IPTp no longer part of policy in Zanzibar

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

	2014	2015	2016	2017	2018
# Suspect malaria cases[1]	N/A	N/A	N/A	N/A	N/A
# Patients receiving diagnostic test for malaria[2]	232,716	224,294	317,910	343,304	392,617
Total # malaria cases[3] (confirmed and presumed)	3,113	3,668	3,771	4,171	5,146
# Confirmed cases[4]	3,113	3,668	3,771	4,171	5,146
# Presumed cases[5]	N/A	N/A	N/A	N/A	N/A
% Malaria cases confirmed[6]	100%	100%	100%	100%	100%
Test positivity rate (TPR)[7]	1.3%	1.6%	1.2%	1.2%	1.3%
Total # <5 malaria cases[8]	433	628	560	525	702
% Cases under 5[9]	13.9%	17.1%	14.9%	12.6%	13.6%
Total # severe cases[10]	N/A	N/A	N/A	N/A	N/A
Total # malaria deaths[11]	3	2	1	1	5
# Facilities reporting[12]	158	161	221	222	210

	2014	2015	2016	2017	2018
Data form completeness (%)[13]	98.7%	99.8%	97.3%	96.3%	98.1%

Footnotes:

Data sources and comments: Data for "Total # malaria deaths11" indicator was extracted from DHIS2. All other indicators were extracted from the existing malaria early epidemic detection system (MEEDS).

N/A = not available

Definitions:

[1] Number of patients presenting with signs or symptoms considered to be possibly due to malaria (e.g., this could be the number of patients presenting with fever or history of fever in the previous 24 or 48 hours)

[2] Number of patients receiving a diagnostic test for malaria (RDT or microscopy). All ages, outpatient, inpatient

[3] Total # cases: Total number of reported malaria cases. All ages, outpatient, inpatient, confirmed and unconfirmed cases.

[4] # confirmed cases: Total diagnostically confirmed cases. All ages, outpatient, inpatient.

[5] # presumed cases: Total clinical/presumed/unconfirmed cases. All ages, outpatient, inpatient.

[6] % Malaria Cases confirmed: # confirmed cases (#4 above) / Total # cases (#3 above)

[7] Test Positivity Rate (TPR): Number of confirmed cases (#4 above)/Number of patients receiving a diagnostic test for malaria (RDT or microscopy) (#2 above)

[8] Total #<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 (i.e., number of facilities expected to report multiplied by the number of months considered).

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

PMI supports a comprehensive package of malaria elimination interventions in support of ZAMEP's *2018-2023 Strategic Plan IV*. The Plan identifies three major strategies to achieve this goal:

1. Malaria diagnosis and treatment: Ensure quality assured diagnosis and appropriate case management in all health facilities and at community level to 100 percent by 2023
2. Integrated malaria vector control: Increase appropriate vector control measures to the population at risk of malaria to 100 percent by 2023
3. Surveillance, Monitoring and Evaluation:
    a) Actively investigate and classify 100 percent of all confirmed cases of malaria and initiate entomological surveillance in 100 percent of malaria foci by 2023
    b) Conduct entomological surveillance in 100 percent of malaria foci areas by 2023

The Plan also identifies three supporting strategies:

- Social Behavioral Change and Communication: Advocacy, behavior, and mobilization reaches 90 percent of the general population by 2023

- Operational Research: Appropriate operational research undertaken to evaluate and optimize interventions to eliminate malaria
- Program Management and Coordination: Strengthen coordination structures for malaria elimination at different operational levels by 2023

Zanzibar implemented a Malaria Case Notification system (MCN) in 2011. This system requires that the Council Malaria Surveillance Officers follow every case to household level and tests all household members. In addition, the Council Malaria Surveillance Officers (CMSOs) take the coordinates of each case and collect sufficient information on cases to classify foci as active, non-active, or potential. The goal is to follow up every case to the household level within 24 hours of notification of a confirmed case of malaria. In 2014, ZAMEP updated its case management guidelines to include a single low dose primaquine treatment to reduce transmission, a policy that was implemented beginning in 2016. Following the distribution of over 700,000 ITNs through a universal coordinated campaign (UCC) in April to July 2016, ZAMEP adopted an ITN keep-up approach to maintain this high coverage that relies on community-based and health facility based distribution of ITNs. IRS reaches hotspot areas across Unguja and Pemba, and new approaches to larviciding are being tested. In spite of high coverage with interventions to reduce indoor transmission, about 3,000 and 4,500 cases are still reported annually. There is some evidence that a significant proportion (~60 percent) of these cases may be imported and other evidence to suggest that outdoor transmission may play a major role in transmission.

PMI currently provides support to all aspects of the ZAMEP strategy across all geographic areas of both islands, Unguja and Pemba, with the exception of larviciding. To assist Zanzibar in its efforts to eliminate malaria, PMI has supported ZAMEP to organize and convene a Zanzibar Malaria Elimination Advisory Committee, comprised of international and local malaria experts. This independent group has met regularly beginning in 2018 to review progress and provide guidance to ZAMEP.

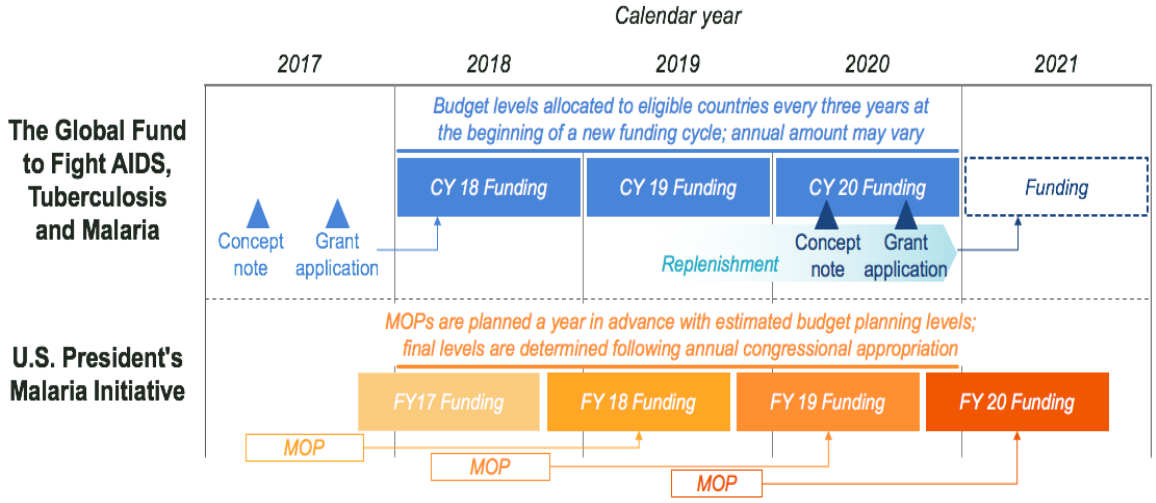
IV. PARTNER FUNDING LANDSCAPE

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

Figure 7 visualizes the annual cycle of PMI funding and the MOP implementation year. As the figure illustrates, any given FY MOP funds activities that take place during the next FY. For example, a FY18 MOP funds implementation during FY19. Whereas Global Fund funding (and often, other partners and host country governments) is based on a three-year grant cycle on a

calendar year (CY) timeframe during which activities were implemented. Annual PMI country budget allocations depend largely on the U.S. Congress' total overall malaria funding appropriation to USAID in a given fiscal year, as well as other considerations (e.g. previous funding levels, activity and program pipelines, other donor contributions, known commodity needs/gaps, progress on ongoing PMI-supported activities, clear evidence of continued government commitment to malaria control).

Figure 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.

Figures 8 and 9 summarize contributions by external partners and host country government in calendar years 2018-20, with the goal of highlighting total country investments. For Tanzania, data is available for PMI (FY 2017-2019) and Global Fund (CY 2018-20). As the Global Fund 2021-23 grant funding cycle is not yet underway at the time of this PMI FY20 MOP development, Global Fund country investments for the 2021 implementation period and beyond are not yet known. Note that the host country government invests substantial funding into the national-to-local infrastructure and service delivery for malaria and many other programs. However, there has not been a standardized method for attributing those investments to malaria specifically. Thus, it may not yet be possible in the FY 2020 MOP cycle to attribute funding from the host country government. There may be similar challenges for other partners.

Figure 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	$1.8M	$.3M	-	$0.2M	$0.9M	$2.7M	**$5.9M**
	Global Fund	$9.6M	$15.7M	-	$3.3M	$2.9M	$14.3M	**$45.8M**
	Total	**$11.4M**	**$16M**	**-**	**$3.5M**	**$3.8M**	**$17M**	**$51.7M**
FY18/CY19	PMI	$1.8M	$.3M	-	$0.2M	$1M	$2.8M	**$6.1M**
	Global Fund	$53.7M	$24.3M	-	$1.6M	$5.8M	$17.7M	**$103.1M**
	Total	**$55.5M**	**$24.6M**	**-**	**$1.8M**	**$6.8M**	**$20.5M**	**$109.2M**
FY19/CY20	PMI	$23.5M	$5.5M	$1.1M	$.7M	$2.1M	$5.1M	**$38.0M**
	Global Fund	$12.8M	$24.4M	-	$.7M	$1.7M	$3.3M	**$42.9M**
	Total	**$36.3M**	**$29.9M**	**$1.1M**	**$1.4M**	**$3.8M**	**$8.4M**	**$80.9M**

Footnotes:

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.

PMI and Global Fund support include combined funding for both Mainland and Zanzibar.

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	$8.7M	$7.5M	$10.8M	$9.9M	$8.2M	$10.2M
	Distribute ITNs via Continuous Distribution	$8.1M	$0.2M	$9.3M	$0.3M	$5.7M	$0.3M
	Procure ITNs for Mass Campaigns	-	-	-	$26.4M	-	-

Level 1 Category	Level 3 Category	FY17/CY18[1]		FY18/CY19[1]		FY19/CY20[1]	
		PMI	Global Fund	PMI	Global Fund	PMI	Global Fund
	Distribute ITNs via Mass Campaigns	-	-	-	$11.3M	-	-
	Other ITN Implementation*	-	-	-	-	-	-
	IRS Implementation[4]	$11M	-	$6.3M	-	$8.6M	-
	Procure IRS Insecticide[4]	-	-	-	-	-	-
	Other IRS*	-	-	-	-	$0.0M	-
	Entomological Monitoring	$1.3M	$0.3M	$1M	$0.3M	$0.9M	$0.3M
	SBC for Vector Control[5]	-	$0.5M	-	$0.5M	-	$0.6M
	Other vector control measures	-	-	-	-	-	-
	Removing human rights- and gender-related barriers to vector control programs**	-	-	-	-	-	-
Case Management	Active Case Detection**	-	$0.1M	-	$0.2M	-	$0.2M
	Community-based case management	-	-	-	-	-	-
	Facility-based case management	-	$0.7M	-	$0.9M	-	$0.8M
	Private-sector case management	-	$0.8M	-	$0.1M	-	$0.1M
	Procure ACTs	$2.0M	$6.7M	$1.5M	$8.3M	-	$7.9M
	Procure Drugs for Severe Malaria	-	-	$0.5M	$3.9M	-	$4.3M
	Procure Other Diagnosis-Related Commodities	-	-	-	-	-	-
	Procure Other Treatment-Related Commodities	-	-	-	-	-	-
	Procure RDTs	-	$4.5M	-	$6.3M	-	$6.5M
	Therapeutic Efficacy	$0.3M	-	$0.3M	-	$0.3M	-

Level 1 Category	Level 3 Category	FY17/CY18[1]		FY18/CY19[1]		FY19/CY20[1]	
		PMI	Global Fund	PMI	Global Fund	PMI	Global Fund
	SBC for Case Management[5]	-	$0.3M	-	$0.2M	-	$0.2M
	Other Case Management	$4.1M	-	$5.5M	-	$5.2M	-
Drug-Based Prevention[2]	Procure SMC-Related Commodities	-	-	-	-	-	-
	SMC Implementation	-	-	-	-	-	-
	Prevention of Malaria in Pregnancy Implementation	$1.2M	-	$1.0M	-	$1.1M	-
	Procure IPTp-Related Commodities	$0.3M	-	-	-	-	-
	IPTi**	-	-	-	-	-	-
	SBC for Drug-Based Prevention[5]	-	-	-	-	-	-
	Other Prevention**	-	-	-	-	-	-
Supply Chain[3]	In-Country Supply Chain[3]	-	-	-	-	-	-
	Supply Chain Infrastructure	-	$1.4M	-	$0.6M	-	-
	Ensuring Quality	-	$1.1M	-	$0.7M	-	$0.4M
	Pharmaceutical Management Systems Strengthening	$0.9M	-	$1M	-	$0.7M	-
	Supply Chain System Strengthening	-	$0.8M	-	$0.3M	-	$0.3M
Monitoring, Evaluation & Research	Reporting, Monitoring, and Evaluation	$1.4M	$0.5M	$.9M	$1.1M	$1.9M	$0.7M
	Program and data quality, analysis and operations research	$0.1M	$2.1M	$0.5M	$2.9M	-	$0.7M
	Surveys	-	$0.1M	-	$0.9M	-	$0.1M
	Other Data Sources**	-	$0.2M	-	$0.8M	-	$0.1M
	Support for FETP*	-	-	-	-	$0.1M	-

Level 1 Category	Level 3 Category	FY17/CY18[1]		FY18/CY19[1]		FY19/CY20[1]	
		PMI	Global Fund	PMI	Global Fund	PMI	Global Fund
Other Cross-Cutting and Health Systems Strengthening	Integrated service delivery, quality improvement, and national health strategies**	-	$8.9M	-	$8.4M	-	$0.3M
	Financial management systems**	-	$0.1M	-	$0.6M	-	$0.1M
	Community responses and systems**	-	$0.5M	-	$0.7M	-	$0.3M
	Support for PCV and SPAs*	-	-	-	-	$0.0M	-
	Cross-Cutting Human Resources for Health**	-	$2.0M	-	$5.1M	-	$0.1M
	Central and Regional Program management[6]	$0.1M	$0.2M	$0.9M	$0.3M	$0.6M	$0.2M
	In-Country Staffing and Administration*	-	-	-	-	$2.3M	-
	Other Program Management**	-	$2.7M	-	$2.6M	-	$2.4M
	SBC Unspecified[5]	$2.2M	-	$1.5M	-	$2.2M	-
Total		**$41.7M**	**$45.7M**	**$41M**	**$103.0M**	**$38.0M**	**$42.9M**

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 the cost of IRS insecticides if the full cost of IRS implementation including commodities was bundled within a 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.

PMI and Global Fund support below include combined funding for both Mainland and Zanzibar.

* 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[3]	ACTs	RDTs	Severe Malaria	SMC-Related	IPTp-Related	Total
FY17/CY18	PMI[2]	$8.7M	-	-	$2.0M	-	-	-	$0.3M	**$11M**
	Global Fund	$7.5M	-	-	$6.7M	$4.5M	-	-	-	**$18.8M**
	Total	**$16.2M**	**-**	**-**	**$8.7M**	**$4.5M**	**-**	**-**	**-**	**$29.4M**
FY18/CY19	PMI[2]	$10.8M	-	-	$1.5M	-	$0.5M	-	-	**$11.6M**
	Global Fund	$9.9M	$26.4M	-	$8.3M	$6.3M	$3.9M	-	-	**$54.7M**
	Total	**$20.7M**	**$26.4M**	**-**	**$9.8M**	**$6.3M**	**$4.4M**	**-**		**$54.7M**
FY19/CY20	PMI[2]	$8.2M	-	-	-	-	-	-	-	**$8.2M**
	Global Fund	$10.2M	-	-	$7.9M	$6.5M	$4.3M	-	-	**$28.9M**
	Total	**$18.4M**	**-**	**-**	**$7.9M**	**$6.5M**	**$4.3M**	**-**	**-**	**$37.1M**

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. PMI commodity costs are fully loaded, including costs for the ex-works price of the commodity, quality control, freight, insurance, and customs.
3. 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 Tanzania (Zanzibar) 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

ZAMEP objective
The Zanzibar Malaria Strategic Plan IV 2018/19-2022/23 includes Integrated Malaria Vector Control as one of four major strategies for malaria elimination and sets as the objective to increase appropriate vector control measures to the population at risk for malaria to 100 percent by 2023. PMI supports three of the four activities identified to achieve this objective: • IRS in identified areas, targeting all areas that have an annual malaria incidence of >1 case/1000 population or in areas where entomological investigations indicates the need for an IRS intervention; • Maximization of ITN ownership and use; and • Vector surveillance in hotspot areas.
ZAMEP approach
The Vector Control Guidelines for Malaria Elimination in Zanzibar 2017 articulated the choice of the most appropriate method or combination of malaria vector control that will accelerate the ZAMEP moving towards becoming the pre-elimination country. The core strategies/interventions are deployment of targeted or focalized IRS, use of ITNs, entomological monitoring, and complementary methods for larval source management, all implemented in parallel with SBC. The last ITNs mass replacement campaign was completed in 2016. Since then ZAMEP has been continuously distributing ITNs through ANC/EPI and community channels.
PMI objective, in support of NMCP
PMI's support for ITN coverage includes procurement and distribution of ITNs via community-based distribution and distribution of Global Fund or PMI procured ITNs through RCH channels at all primary health facilities. Procurement of insecticides for IRS is supported in Zanzibar by both Global Fund and PMI. In addition, PMI supports spray operation logistics for reaching between 30,000 and 60,000 households per year. Site selection is based on the incidence of malaria the previous year. The IRS operation adheres to high standards for the protection of the environment and safe disposal of waste, in accordance with the approved Pesticide Evaluation Report and Safe Use Action Plans. Environmental inspection visits are conducted regularly to assess compliance with U.S. Government and Tanzanian national environmental standards. PMI-support for entomological monitoring in Zanzibar consists of: • Yearly monitoring of resistance to insecticides used for vector control and testing for insecticide resistance mechanisms;

- Monthly cone bioassay monitoring of residual insecticidal activity on sprayed walls, and
- Monitoring of vector species abundance and distribution, resting behavior, blood feeding, and sporozoite rates at established sentinel sites.

PMI/Tanzania does not currently support larval source management activities. However, technical assistance to improve targeting, monitoring and evaluation of LSM is being considered for support.

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

- PMI procured and distributed 344,096 standard LLINs and 288,000 PBO nets through ANC/Epi and community channel. Long delays in arrival of procured bed nets resulted in stock out of bed nets at the health facilities level for almost three months.
- PMI supported a review of the existing supply chain system and identified ways the continuous distribution system could be integrated into the health commodity supply chain. *Chandarua Kliniki* dashboard was developed/created and integrated into electronic logistics management and information system (eLMIS).
- PMI continued to support the final year of the ITN durability monitoring activity that started in November 2016. Data collection was carried out over 36 months, with the last collection in May/June 2019.
- PMI supported ZAMEP to conduct entomologic monitoring including insecticide resistance testing, longitudinal monitoring, and insecticide efficacy evaluations for IRS. PMI supported sentinel sites for longitudinal monitoring specifically on hot-spot areas.
- PMI supported community activities that were focused on correct and consistent ITN use and care and acceptance of IRS.
- PMI supported the routine monitoring and supportive supervision in school malaria clubs, community health management teams, etc.

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

- PMI will continue to support ZAMEP in entomologic monitoring including insecticide resistance testing, longitudinal monitoring, and insecticide efficacy evaluations for IRS.
- Based on the latest entomological and epidemiological data, PMI will support the ZAMEP advanced molecular and immunodiagnostic laboratory for analysis of samples for entomologic and epidemiological monitoring (including reagents, supplies, and maintenance costs).
- PMI will support the procurement and distribution of ITNs for the community-based continuous distribution channel. This will include projection of ITN needs, tracking,

accountability, and maintenance of the Zanzibar *Chandarua Kliniki* dashboard. PMI will also support the distribution of Global Fund-procured ITNs.

- PMI will support ZAMEP to spray hot spots areas, covering about 40,000 structures and protecting about 180,000 people.
- PMI will procure insecticide and provide technical and logistic assistance for the 2019/2020 IRS round.
- PMI will support SBC activities to combat imported malaria cases by travelers, promote the acceptance of IRS, and promote correct and consistent use of ITNs.

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 expanding, contracting, or changing any entomological monitoring activities? If so, why and what data did you use to arrive at that conclusion?
It is expected that the FY2020 PMI continued investment will solidify ZAMEP capacity so that routine activities can be independently implemented in the future as Zanzibar pushes towards malaria elimination. 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

From July 2018 to June 2019, PMI-supported longitudinal monitoring activities in a total of ten sites in Unguja and Pemba island. These sites were selected based on disease incidence, agricultural practices, and if they were urban or rural. For the longitudinal monitoring, mosquitoes were collected by human landing collections, pit traps, indoor light traps and pyrethrum spray collections. Insecticide resistance testing was conducted for samples from eight of these ten sites. Laboratory analysis of the mosquito specimens were carried out at the molecular- immunodiagnostic laboratory at Unguja. See details in Figures A1 - Figures A1 – A3 below.

Figure A1: Sentinel Sites for Longitudinal Entomological Monitoring and Resistance Testing in Unguja and Pemba.

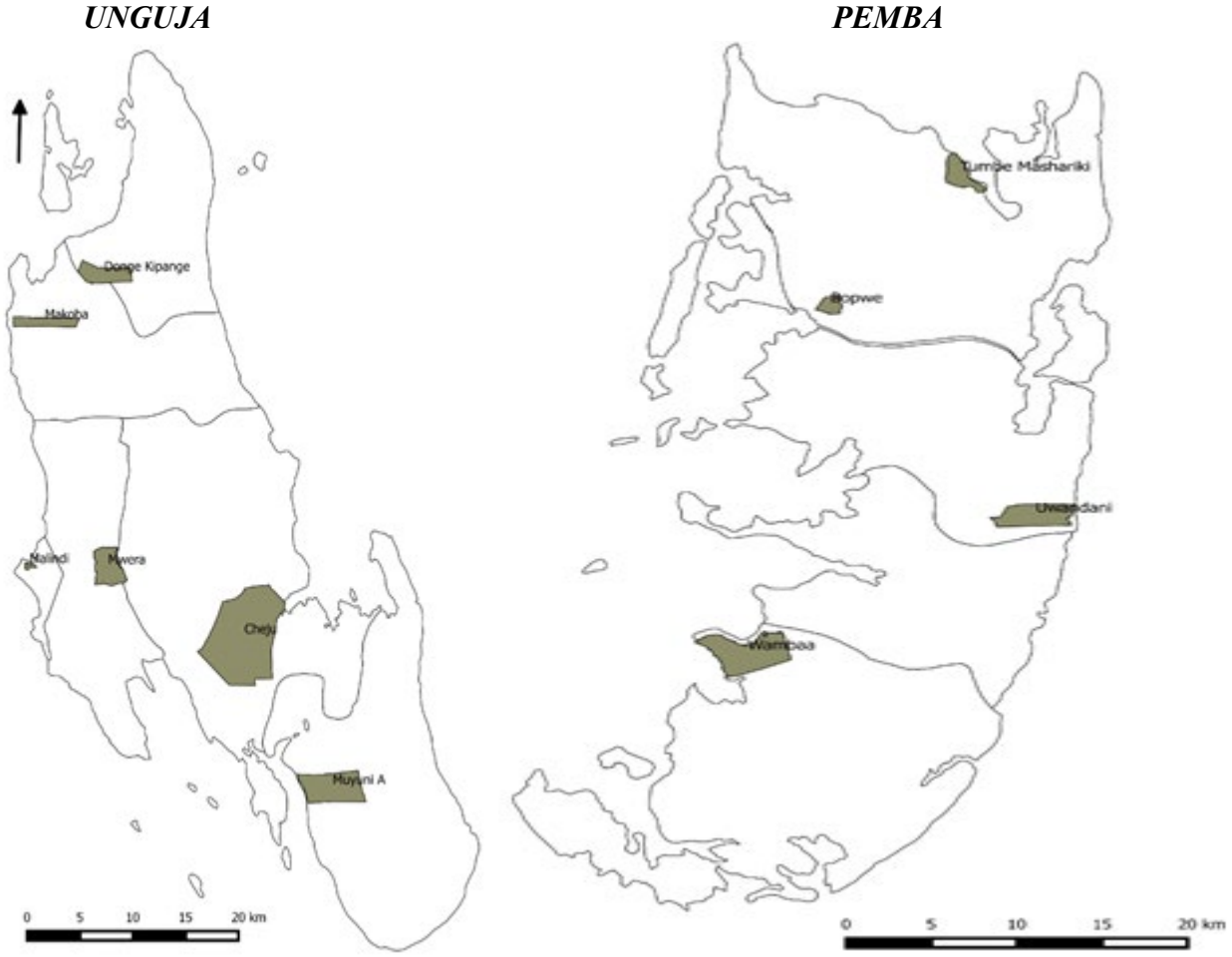


Figure A2: Sentinel Sites for Entomological Surveillance Activities in Pemba and Unguja from July 2018 - June 2019.

Province	Total sentinel sites	Activities	Supported by
Unguja	6 (Stonetown, Bumbwini, Donge, Mwera, Muyuni, Chegu) 4 (Mwera, Donge, Bumbwini, Chegu)	Longitudinal Monitoring (6) Insecticide Resistance (4)	PMI
Pemba	4 (Tumbe, Bopwe, Uwandani, Wambaa) 4 (Tumbe, Bopwe, Uwandani, Wambaa)	Longitudinal Monitoring (4) Resistance monitoring (4)	PMI

Figure A3: Summary of Vector Bionomics in Pemba and Unguga from Entomological Surveillance from July 2018 - June 2019.

Site	Major Vector	Minor Vector	Peak Abundance	Preferred Biting Location	Preferred Resting Location	Preferred Host
Stonetown	—	—	—	—	—	—
Bumbwini	*An. arabiensis*	*Undetermined*	N/A	*An arabiensis*(O)	*An arabiensis*(Undetermined)	N/A
Donge	*An. arabiensis*	*An. merus*	N/A	*An arabiensis*(O) *An merus* (O)	*An arabiensis* (Undetermined) *An merus* (Undetermined)	N/A
Mwera	*An. arabiensis*	*An. rivulorum*	N/A	*An arabiensis*(O)	*An arabiensis* (O) *An. rivulorum* (O)	N/A
Muyuni	*An. arabiensis*	—	N/A	*An arabiensis* (O)	*An arabiensis* (Undetermined)	N/A
Cheju	*An. arabiensis*	*An. merus*	N/A	*An arabiensis (O)* *An merus (O)*	*An arabiensis* (Undetermined)	N/A
Tumbe	*An. arabiensis*	*An.leesoni*	N/A	*An. arabiensis* (O) *An.leesoni* (O)	*An. arabiensis* (O) *An. leesoni* (O)	N/A N/A
Tumbe	*An. arabiensis*	*An.leesoni*	N/A	*An. arabiensis* (O) *An.leesoni* (O)	*An. arabiensis* (O) *An. leesoni* (O)	N/A NA
Uwandani	*An. arabiensis*	*An. leesoni*	*An arabiensis* (Dec, Apr-Jun, Aug-Sept) *An leesoni* (Dec, Jul, Aug)	*An arabiensis* (O) *An leesoni* (O)	*An arabiensis* (O) *An. leesoni* (O)	N/A NA

Site	Major Vector	Minor Vector	Peak Abundance	Preferred Biting Location	Preferred Resting Location	Preferred Host
Wambaa	*An. arabiensis*	*An. leesoni*	*An arabiensis (Dec, Apr - Jul, Sept)* *An. leesoni (Dec, Apr - Jul)*	*An arabiensis(O)* *An. leesoni (O)*	*An. arabiensis (O)* *An. leesoni (O)*	NA NA

Note: No information available for Peak Sporozoite Rate and Annual* EIR
Undetermined: mosquito collections too low to reach any conclusion
O = outdoors, I = Indoors
Sporozoite rate and annual EIR: No mosquitoes were found to be positive for sporozoites
Host preference: No blood meal analysis was carried out

Conclusion

An. arabiensis was identified as a primary malaria vector accounting for 85 percent and 81 percent of the anophelines collected in Pemba and Unguja respectively. In total, the *An. gambiae* complex (*An arabiensis*, *An. merus* and *An. gambiae* s.s.) constitutes about 86 percent of the samples collected. In the other 14 percent members of the *An. funestus* complex have been found, such as *An. funestus* s.s., *An. rivulorum*, *An. leesoni, An. parensis* and *An. vaneedeni.* In recent years, there has been increasing numbers of these secondary vectors collected. The abundance of *An. gambiae* s.l. and other secondary vectors are correlated with rainfall, with *An. arabiensis* being the predominant vector in both the long and short rainy seasons of April – June and October – December. Vector density and species distribution varies from one sentinel site to another. The lowest density was found in Muyuni and Stone Town in Unguja. The roles of minor vectors in malaria transmission in Zanzibar is unclear at this moment, however there is evidence in other parts of Tanzania mainland that they have been reported positive with *Plasmodium falciparum* parasites, with humans as the preferred host. A total of 2,521 *Anopheles* vectors were tested for the presence of sporozoite and no positive mosquitoes were detected. Although IRS and LLINs are still effective in Zanzibar, outdoor biting behavior of *An. arabiensis,* coupled with pyrethroid resistance, may negatively impact the two principal vector control interventions.

Key Question 2

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

Supporting Data

Figure A4: Insecticide Resistance in Unguja from WHO insecticide resistance 24hr Mortality of Adult Anopheles gambiae s.l. from Larval Collections to a Range of Insecticides at Respective Diagnostic Concentrations.

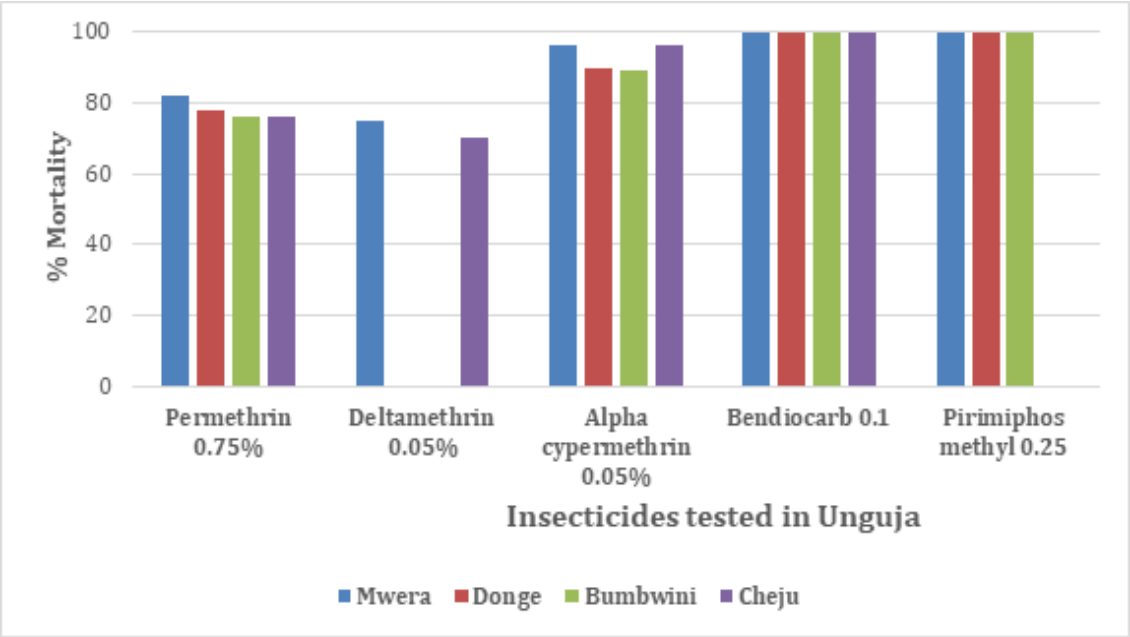


Figure A5: Insecticide Resistance in Pemba from WHO Insecticide Resistance 24hr Mortality of Adult *Anopheles gambiae* s.l. from Larval Collections to a Range of Insecticides at Respective Diagnostic Concentrations.

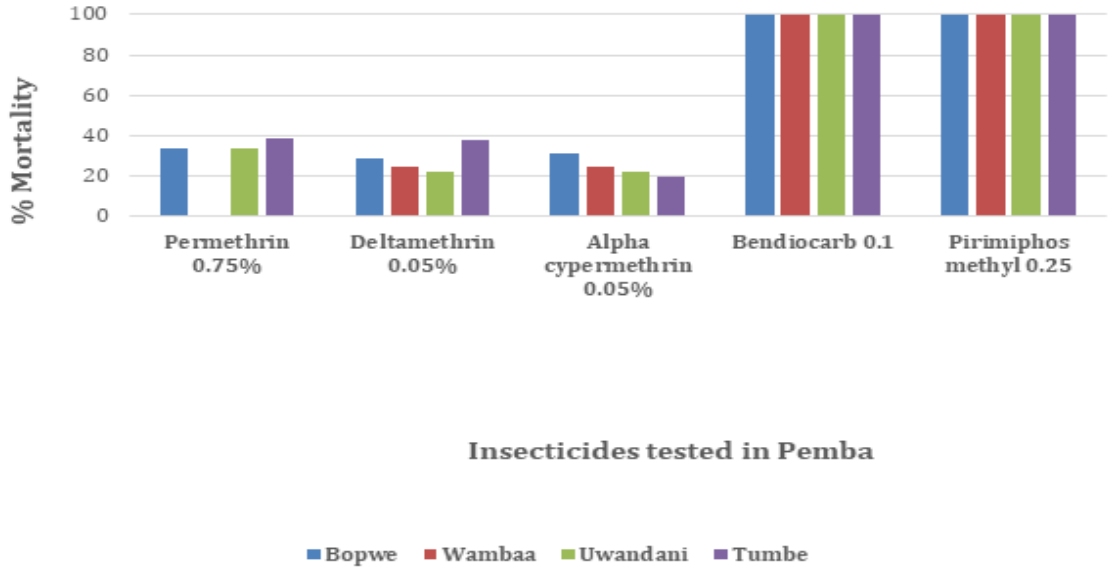
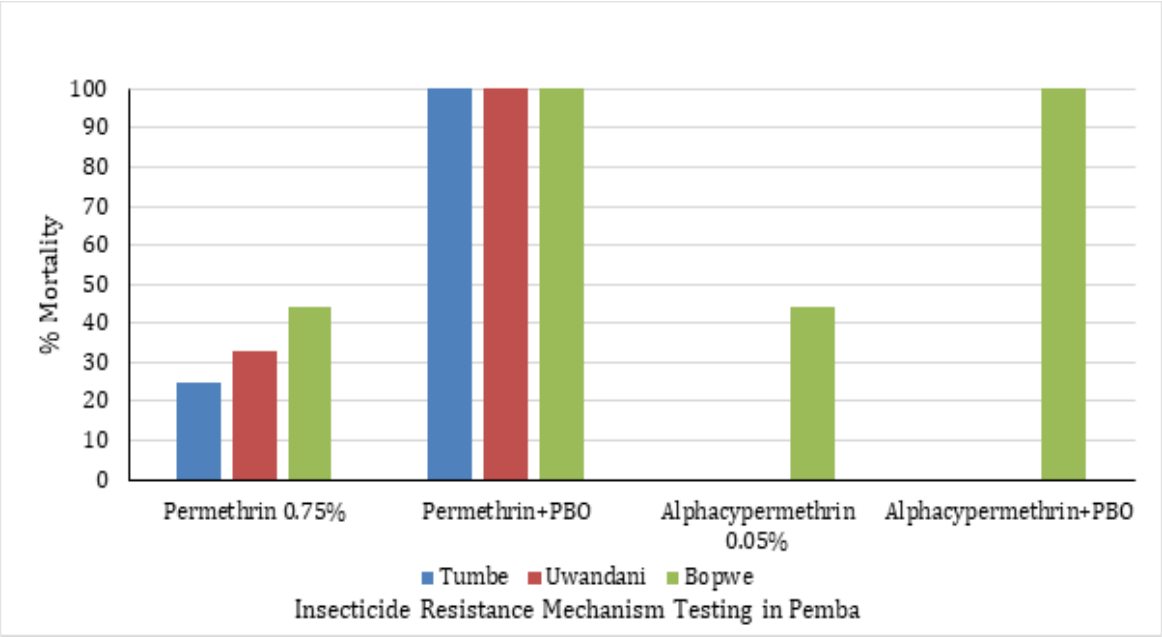


Figure A6: Insecticide Resistance Mechanism Testing in Pemba from WHO Insecticide Resistance with PBO Synergist 24hr Mortality of Adult *Anopheles gambiae* s.l. from Larval Collections.



Conclusion

Adult *An. gambiae* s.l., were tested for insecticide resistance in a total of eight sites, four in Unguja and four in Pemba, using the WHO tube test method (Figure A4 and A5). Following WHO guidelines, mortalities between 98-100 percent indicate that mosquitoes are susceptible, mortalities between 90-97 percent indicate possible resistance, while anything below 90 percent mortality indicates resistance. *An. gambiae* s.l. in most of the sites were resistant to pyrethroids (alpha-cypermethrin, deltamethrin and permethrin). Resistance to pyrethroids was stronger in Pemba than Unguja. *An. gambiae* s.l. were susceptible to bendiocarb and Pirimiphos-methyl in all the test sites. Mosquitoes that survived the insecticide resistance assays were tested for *kdr* and no *kdr* insecticide resistance mechanism was found in either Pemba or Unguja.

Insecticide resistance intensity assays were carried out in three sites in Pemba (Uwandani, Tumbe and Bopwe) using the WHO intensity assay. WHO defines resistance intensity as high if <90% mortality is recorded at x10 diagnostic dose, moderate if <90% mortality at five times the diagnostic dose (but >90% at x10) and low if <90% mortality at x1 diagnostic dose (but>90% at x5). At Uwandani and Tumbe, *An. gambiae* s.l. were exposed to permethrin at x5 the diagnostic dose. In Bopwe, alpha-cypermethrin was tested at x5 the diagnostic dose. Tumbe and Uwandani *An. gambiae* s.l. mosquitoes had low intensity resistance to x5 permethrin, while mosquitoes from Bopwe had moderate to x5 diagnostic dose of alpha-cypermethrin. PBO synergist assays used in Uwandani, Tumbe and Bopwe showed that *An. gambiae* s.l. are fully susceptible to permethrin after being pre-exposed to PBO. Similar results were obtained from Bopwe when tested with alpha-cypermethrin. This suggests that a monooxygenase-based resistance

mechanism is responsible for the resistance (Figure A6). Insecticide resistance mechanism resistance testing was limited in Pemba and was not carried out in Unguja due to the difficulties in collecting sufficient mosquitoes for these assays. Efforts will be made to expand this testing to all three insecticides used in ITNs. The results indicate that the introduction of PBO-LLINs may be effective in combating the residual transmission and assist in mitigating the increasing pyrethroid resistance in Zanzibar.

Key Question 3

Are there any other considerations that impact your funding allocation in this category?

Supporting Data

N/A

Conclusion

N/A

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).

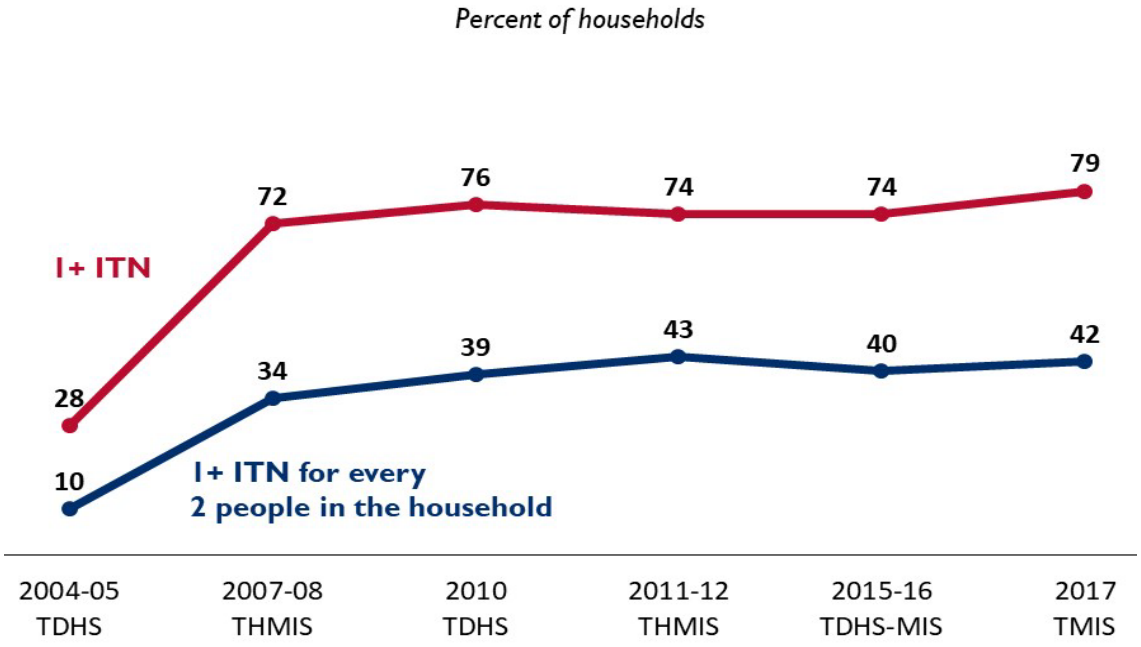
Do you propose expanding, contracting, or changing any ITN activities? If so, why and what data did you use to arrive at that conclusion?
The deployment of PBO nets in Zanzibar started in August 2019. These PBO nets are distributed through ANC/EPI and community channels. The move from standard LLINs to PBO nets was due to documented high level of pyrethroid resistance with metabolic resistance mechanism observed. After a careful analysis of the available data, these decisions were made during the first ZMEAC meeting in early 2019. PMI will support the procurement and distribution of PBO nets for the primary health facilities and community-based continuous distribution channel. This will include support for projecting ITN needs, tracking, accountability, and the Zanzibar *Chandarua Kliniki* dashboard. 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



Data source: DHS/MIS

Conclusion

Household ITN ownership has remained consistent since 2007-08, with approximately three-quarters of households owning at least one ITN. However, less than half of households have enough ITNs to cover all household members.

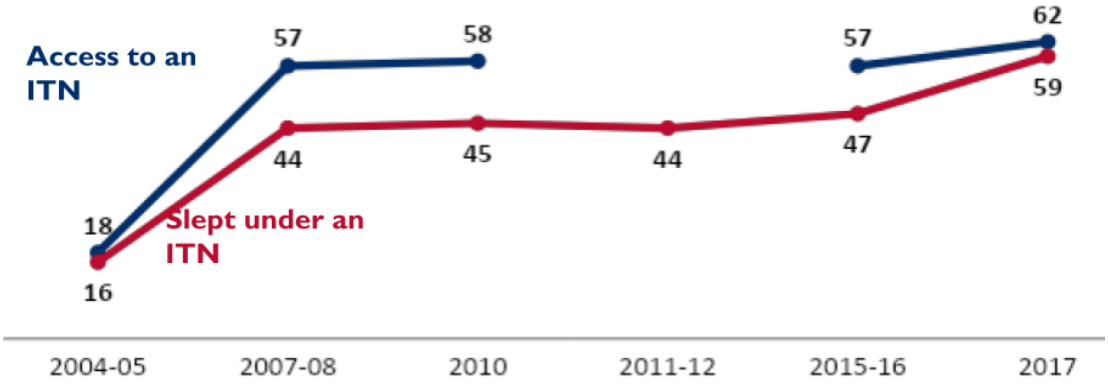
Key Question 2

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

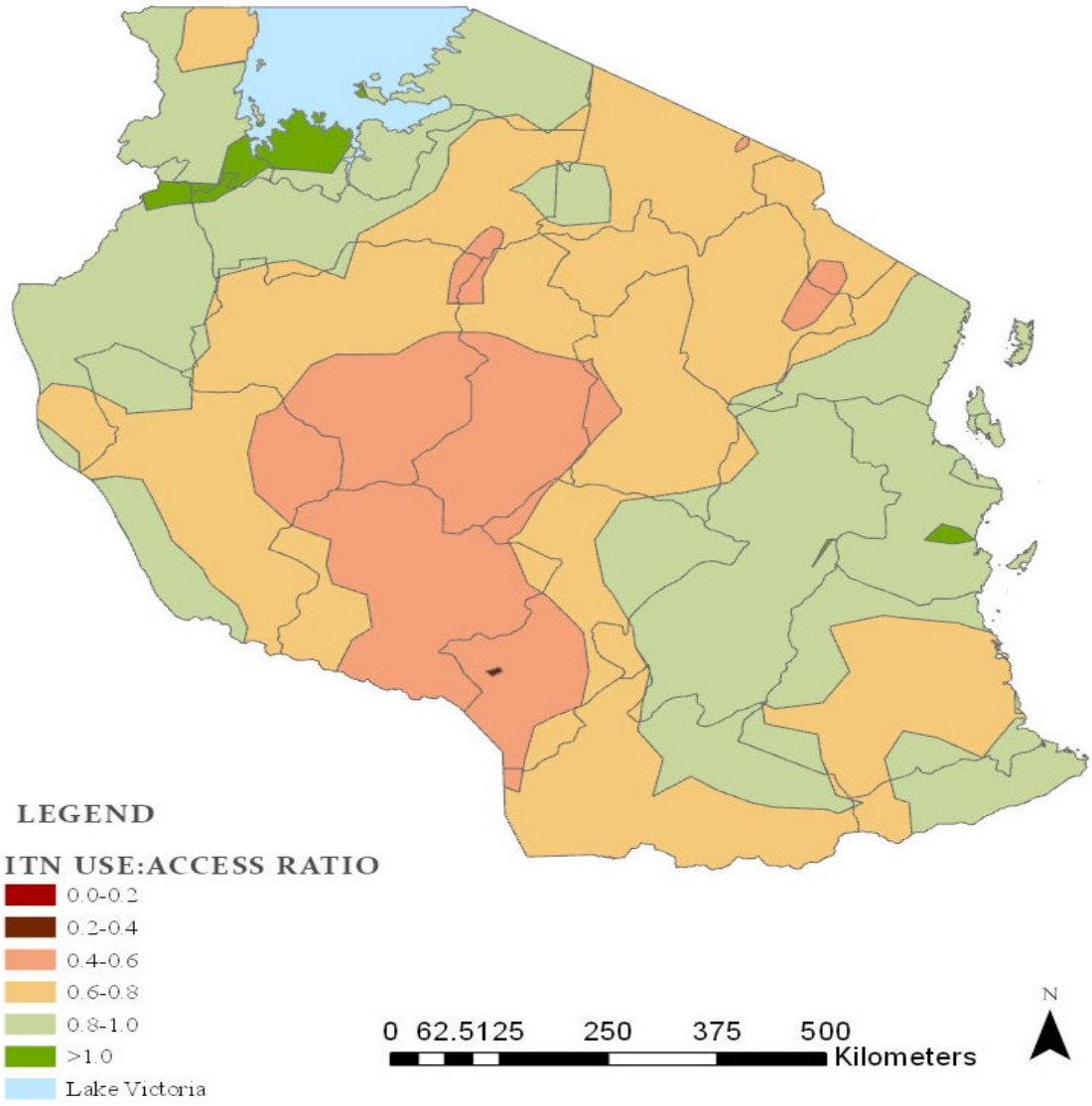
Figure A8. Trends in ITN Access and Use

Percent of household population with access to an ITN and who slept under an ITN the night before the survey



Note: DHS surveys are generally fielded during the dry season, as opposed to MIS surveys, which are deliberately fielded during the high transmission season, which should be taken into consideration when interpreting the ITN use indicator.

Figure A9. Tanzania ITN Use: Access Ratio



Source: MIS 2017

Conclusion

The ratio of net use to net access is very good across Zanzibar (ranging from 0.91 in Kaskazini Unguja to 0.99 in Kaskazini Pemba), indicating that, when nets are available they are being used.

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. Key Barriers and Facilitators to ITN Use

Facilitator	Type of Factor	Data Source	Evidence
High rate of LLIN net ownership	Environmental	Zanzibar Malaria KAPB Study, 2017	Three quarters of households (74.1%) had at least one bed net for every two people who slept in the household the night before the survey.
Barrier	**Type of Factor**	**Data Source**	**Evidence**
Low risk perception of malaria	Internal	Zanzibar Malaria KAPB Study, 2017	Almost half of respondents (48.4%) were not worried about malaria because they knew it could be easily treated.
Knowledge about malaria prevention	Internal	Zanzibar Malaria KAPB Study, 2017	59% of urban residents and 55.4% of rural residents know that sleeping under a bed net can stop them from getting malaria.
Negative attitudes towards bed nets	Internal	Zanzibar Malaria KAPB Study, 2017	Only 56.8% of respondents believed that sleeping under a bed net was the best way to avoid malaria.
Belief about effectiveness of bed net	Internal	Zanzibar Malaria KAPB Study, 2017	40% of respondents had a misconception that their chances of getting malaria is the same whether or not sleeping under a bed net.

Conclusion

Zanzibar has some of the highest rates of ITN use among those with access to an ITN of all PMI countries. The ratio of use to access has improved since 2007, averaging over 0.90 in 2017. Net access levels in Zanzibar districts is 91 percent in North, 96 percent in South and West, 99 percent in Pemba North and 94 percent in Pemba South. Data from MIS 2017 presented above further indicate that despite the attitude toward malaria and malaria treatment being positive still there is low knowledge about malaria prevention, there is low individual perception of risk reflecting the low malaria prevalence in Zanzibar. While attitude and knowledge are important, other determinants of behavior are critical to making the behavior happen, especially since malaria infections in Zanzibar are largely imported and concentrated around migrant fishing communities. PMI proposes prioritizing SBC activities focusing on addressing behavioral determinants such as risk perception of travelers, raising and sustaining self-efficacy, and increasing availability of ITNs in villages (*shehias)* with low ITNs access. PMI also proposes promoting net care and repair practices to increase the useful life of ITNs.

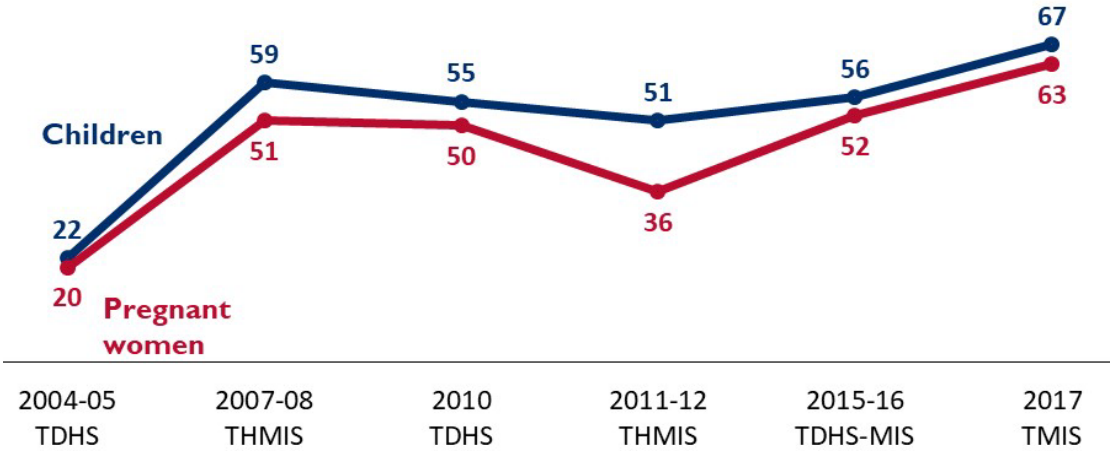
Key Question 4

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



Note: DHS Surveys are generally fielded during the dry season, as opposed to MIS surveys, which are deliberately fielded during the high transmission season, which should be taken into consideration when interpreting these indicators

Conclusion

The 2017 MIS shows that approximately two-thirds of children under five and pregnant women slept under an ITN the night before the survey. This has increased since 2011-12 even though net ownership has remained stable, indicating success in SBC efforts targeting these groups.

Key Question 5

What channels are used to distribute ITNs?

Supporting Data

Figure A12. ITN Distribution Channels

Channel	2015	2016	2017	2018	2019	2020	2021
EPI	40,271	37,038	37,542	49,989	53,338	77,667	55,479
ANC	43,048	40,737	41,019	55,669	66,879	98,410	69,563
Schools	X	X	X	X	X	X	X
Community	132,991	34,498	34,312	73,151	198,084	350,000	125,864
Mass Campaign	X	702,185	X	X	X	X	X

Conclusion

The continuous distribution system in Zanzibar is functioning well across channels, with some locations functioning at a high level. There is a need to address lower-performing areas using lessons learned from high-performing areas. The management of continuous distribution in Zanzibar is integrated into the existing logistics and supply chain system. PMI supported a review of the existing supply chain system and identified ways the continuous distribution system could be integrated into the health commodity supply chain.

Key Question 6

What was the estimated need for ITNs during calendar year 2019? What are the estimated ITN needs over calendar years 2020 and 2021? What volume of ITNs are available from partners and the public sector for the next three calendar years?

Supporting Data

Figure A13. Gap Analysis of Campaign Distribution Needs

Calendar Year	2019	2020	2021
Total Targeted Population	1,603,225	1,651,322	1,717,608
Continuous Distribution Needs			
Channel #1: ANC	64,931	66,879	69,563
Channel #2: EPI	51,784	53,338	55,479
Channel #3: Community	198,084	350,000	125,864
Estimated Total Need for Continuous Channels	314,799	470,216	250,906
Mass Campaign Distribution Needs			
2019/2020/2021 mass distribution campaign(s)	0	0	0
Estimated Total Need for Campaigns	0	0	0
Total ITN Need: Routine and Campaign	**314,799**	**470,216**	**250,906**
Partner Contributions			
ITNs carried over from previous year	0	-26,799	122,595
ITNs from MOH	0		
ITNs from Global Fund	0	331,610	0
ITNs from other donors	0		
ITNs planned with PMI funding	288,000	288,000	140,884
Total ITNs Available	**288,000**	**592,811**	**263,479**
Total ITN Surplus (Gap)	**-26,799**	**122,595**	**12,573**

Footnotes:

ANC ITN needs are based on pregnant women representing 4.5 percent of the total population annually, and ANC ITN delivery reaching 90 percent of pregnant women annually.

EPI ITN needs are based on under one children representing 3.8 percent of population annually, and EPI ITN delivery reaching 85 percent of children.

Community ITN needs are based on MIS results and modeling to determine the gap between the ITNs needed to maintain 80 percent population access and the ITNs distributed through ANC and EPI channels.

Conclusion

ITN projections estimate for routine distribution for calendar year 2019 had a gap of 26,799 ITNs and 2020 projected a surplus of 122,595 ITNs, and the planned ITNs for 2021 have been

adjusted accordingly and projecting a surplus of 12,573 ITNs. The ITN deliveries in-country will be scheduled to avoid overstocks. All Zanzibar ITN projections are for PBO nets.

Key Question 7

What is the current status of durability monitoring?

Supporting Data

Figure A14. Durability Monitoring

Campaign Date	Sites	Brands	Baseline	12-month	24-month	36-month
July 2016	Unguja	PermaNet 2.0	X	X	X	X
July 2016	Pemba	Olyset	X	X	X	X

Figure A15. Key results of Durability Monitoring

Site	Survey and time since distribution (months)	Attrition wear and tear (%)	Remaining nets in serviceable condition (%)	Remaining nets hanging over sleeping space (%)		Optimal insecticidal effectiveness in bio-assay (%)
				Campaign	Other	
Unguja	12m:	1.1	95.1	76.7	77.2	90.0
	24m:	7.6	84.9	83.1	71.4	96.7
	36m:	12.3	67.7	75.9	63.0	90.0
Pemba	12m:	5.3	91.8	72.7	66.1	96.7
	24m:	10.6	77.6	82.7	81.4	80.0
	36m:	14.9	64.0	75.9	74.8	100

Conclusion

After three years of monitoring in rural populations in the Zanzibar islands of Unguja and Pemba, the 150-denier polyethylene LLIN Olyset showed a significant lower physical survival compared to the 100-denier polyester LLIN PermaNet 2.0, even though, at the end, estimated median survival was 2.7 years for the Olyset and 2.9 years for the PermaNet. The difference between the brands came from an earlier start of failures in the Olyset, which were mitigated by improved care behaviors in Pemba in the second part of the study. Insecticidal performance was optimal for both brands throughout the follow-up.

Key Question 8

Are there any other considerations that impact your funding allocation in this category?

Supporting Data

N/A

Conclusion

N/A

1.C. INDOOR RESIDUAL SPRAYING (IRS)

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

Do you propose expanding, contracting, or changing any IRS activities? If so, why and what data did you use to arrive at that conclusion?
With FY 2020 funds PMI will both procure insecticide and provide technical and logistic assistance for the 2021 IRS round. PMI will provide support to ZAMEP to spray hot spots areas, covering about 40,000 structures and protecting about 180,000 people. 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

Figure A16. Map of Targeted Spraying in Unguja and Pemba

= Targeted districts

In 2019, PMI implemented targeted spraying in 10 districts within the islands of Unguja and Pemba: Central, Chakechake, Micheweni, Mkoani, North A, North B, South, West A, West B, and Wete with Pirimiphos-methyl. The insecticide for the 2019 campaign was procured by the Global Fund. ZAMEP and PMI reviewed malaria incidence data from October 2017 to September 2018 for all *shehias*. *Shehias* were ranked by incidence and those with the greatest incidence selected up to the project's target of 88,355 structures. The IRS targeted *shehias* totaled 127: 101 from six districts in Unguja and 26 from four districts in Pemba. The selected *shehias* had malaria incidence of ≥ 3.4 cases per 1,000 population.

Conclusion

In 2019, PMI was the only funder of IRS operations in Zanzibar. The 2019 IRS *shehias* were selected by the ZAMEP, in conjunction with PMI and other key malaria vector control stakeholders, based on the available epidemiological and entomological data. The selected *shehias* were those that had the highest malaria incidence rate in Zanzibar.

Key Question 2

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

Supporting Data

Figure A17. PMI-Supported IRS 2016 - 2020

Calendar Year	Number of Districts Sprayed	District Names**	Number of Structures Sprayed	Coverage Rate	Population Protected
2016	7	Chakechake, Micheweni, Central, North A, North B, South, West	27,664	92%	130,170
2017	9	Central, Chakechake, Micheweni, Mkoani, North A, North B, South, West, Wete	38,884	92%	191,119
2018	8	Central, Chakechake, Micheweni, North A, North B, South, West, Wete	67,450	95%	334,715
2019	10	Central, Chakechake, Micheweni, Mkoani, North A, North B, South, West A, West B, and Wete	94,339	95%	477,243
2020*	10	Central, Chakechake, Micheweni, Mkoani, North A, North B, South, West A, West B, and Wete	40,000	TBD	499,798

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

Conclusion

For each IRS round, household coverage for areas selected for IRS was over 90 percent. Low malaria prevalence, combined with robust and reliable surveillance and entomological monitoring systems, has allowed Zanzibar to adopt an entirely focal spraying approach since 2014. Malaria incidence at *shehia* levels is used as the criteria for selecting sites for IRS.

Key Question 3

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

Supporting Data

Figure A18: Residual Efficacy Monitoring using WHO Cone Wall Bioassays, for Actellic® 300 CS in Unguja for the 2019 IRS Campaign.

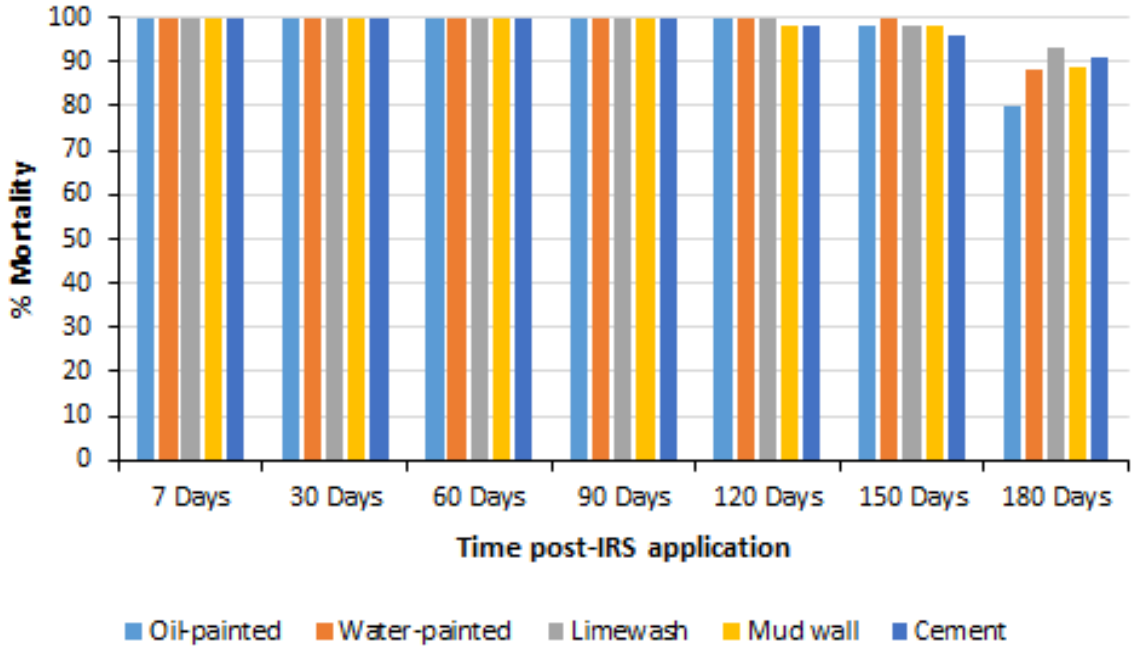
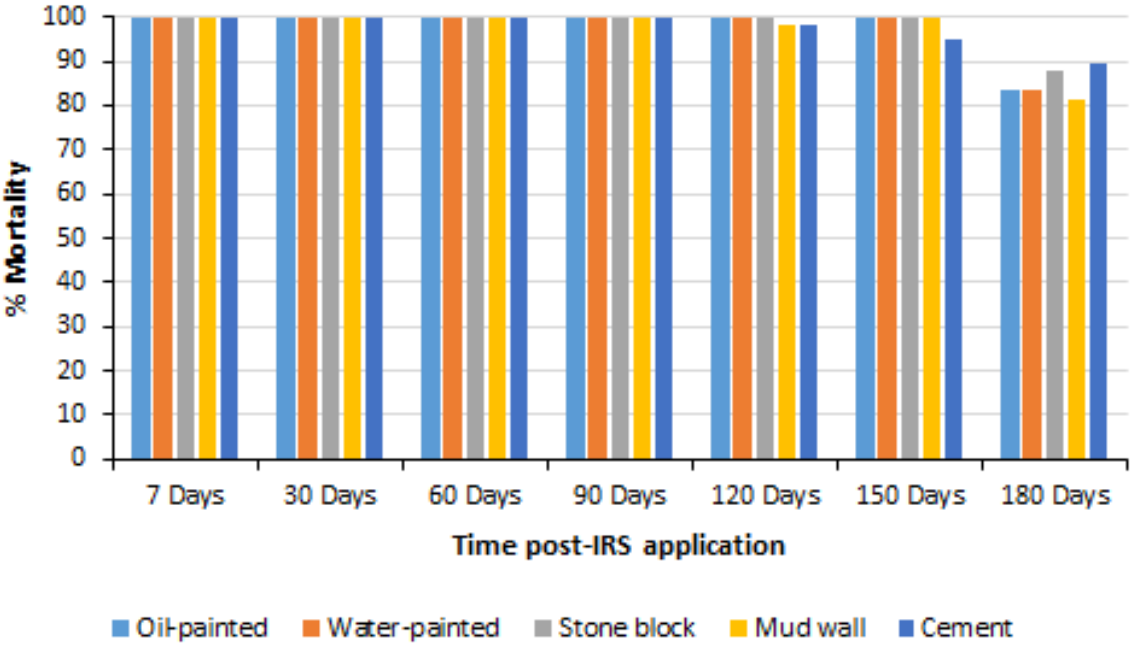


Figure A19: Residual Efficacy Monitoring using WHO Cone Wall Bioassays, for Actellic® 300 CS in Pemba for the 2018-2019 IRS Campaign.



Conclusion

Residual efficacy testing to monitor IRS effectiveness was carried out within seven days of post-IRS application of Actellic 300 CS and thereafter on a monthly basis until the effectiveness was <80 percent. The monitoring was carried out at four sites (Shakani, Donge, Kipange and Cheju) in Unguja, and four sites (Mbuzini, Mtambwe, Kaskazini and Makangale) in Pemba using WHO cone wall bioassay tests. A susceptible colony of *An. gambiae* s.s. (R-70 strain) the insectaries in Unguja and Pemba were used for the assays which monitored the insecticide efficacy on six wall surfaces. The results show that the insecticide application was of high quality in both Unguja and Pemba as the assays conducted seven days post-IRS indicated 100 percent mortality. Actellic 300 CS maintained a <80 percent mortality for at least six months on all wall surfaces, which was sufficient to provide protection over the malaria transmission period.

Key Question 4

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

Supporting Data

Figure A20. Insecticide Rotation Plan, 2017 - 2020

Year	Unguja	Pemba
2017	Pirimiphos-methyl	Pirimiphos-methyl
2018	Pirimiphos-methyl	Pirimiphos-methyl
2019	Pirimiphos-methyl	Pirimiphos-methyl
2020*	clothianidin	clothianidin

*Denotes planned insecticide classes

Conclusion

Pirimiphos-methyl has been used in Zanzibar's IRS program between 2014 and 2019. As part of the ZAMEP's national strategy for mitigation of insecticide resistance with insecticide rotation, a new insecticide clothianidin will be used for focal spraying in the 2020 IRS round.

Key Question 5

Are the NMCP and PMI considering withdrawing IRS from any PMI-supported? 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

N/A

Conclusion

Based on funding available for procurement and distribution of PBO nets and entomological data, PMI may consider withdrawing IRS after successfully being able to distribute PBO nets through all the available channels, i.e. community and ANC/EPI, for at least three years. These efforts will be supported by interpersonal communication activities, which leverage the community platform to increase utilization of the PBO nets.

Any proposed changes to PMI IRS support will be in MOP FY 2021, not this FY 2020 MOP.

Key Question 5

Are there any other considerations 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

N/A

Conclusion

N/A

2. HUMAN HEALTH -- Drug-based Case Management (Facility & Community) and Prevention

2.A CASE MANAGEMENT in health facilities and communities

NMCP objective
The case management goal of the ZAMEP Malaria Strategic Plan IV 2018–2023 is to achieve universal access to high quality malaria diagnostic testing and treatment in all health facilities and the community.
NMCP approach
• The target in Zanzibar is to ensure quality-assured diagnosis and appropriate case management in all health facilities and the community level to 100 percent by 2023. The Zanzibar Malaria Diagnosis & Treatment Guidelines call for parasitological confirmation for all patients with signs or symptoms of malaria. Malaria microscopy and mRDT are the principal diagnostic tools used in both public and private health facilities. Microscopy is available at hospitals and larger health facilities and mRDTs in all public and most private health facilities. This has enabled the program to meet its objective of operating the Malaria Early Epidemic Detection System (MEEDS); (see Surveillance, Monitoring and Evaluation section for more information).

- Malaria microscopy quality assurance and quality control (QA/QC) was established in 2005, and as of September 2019 has been expanded to 96 public and private health facilities (59 in Unguja, 37 in Pemba). ZAMEP collects slides from health facilities on a monthly basis and 10 percent of negative and 100 percent of positive slides are re-examined in a blinded manner by the ZAMEP laboratory. In 2018, microscopy testing sensitivity and specificity was 96.2 percent and 99.9 percent, respectively.
- Malaria RDTs are being used in all 171 public health facilities. ZAMEP maintains a system of quarterly mRDT QC which documented 96.7 percent achievement of key quality indices in 2018. ZAMEP conducts quarterly mRDT supervisory visits to all public district hospitals and health centers and holds semi-annual stakeholder meetings to provide feedback to the districts about both microscopy and mRDT performance. The ZAMEP target is to scale up malaria diagnosis QA/QC for private health facilities from 32 percent in 2016 to 100 percent by 2023.
- ACTs were deployed in Zanzibar in 2003, and the current first-line treatment for uncomplicated malaria is ASAQ, with artesunate as the drug of choice for severe malaria. Serial ZAMEP assessments have shown that ACTs are widely available in health facilities. The Zanzibar Malaria Diagnosis & Treatment Guidelines, 2018 include the WHO recommendation for the use of single low-dose (0.25 mg base/kg) primaquine for all patients with confirmed uncomplicated *P. falciparum* infection in areas pursuing elimination. The guidelines call for referral of patients with severe malaria from lower level facilities to the nearest health center after first giving the patient an intramuscular injection of artesunate. Intramuscular artemether or quinine can be used as second-line drugs if artesunate is not available. Use of pre-referral rectal artesunate at peripheral health facilities is also permitted if injection is not available yet in practice does not occur as rectal artesunate is not procured by either the GoZ or its partners.
- Adopting lessons learned from the successes of the Malaria Services and Data Quality Improvement (MSDQI) package used in mainland Tanzania, ZAMEP developed seven comprehensive tablet-based electronic MSDQI modules (checklists) to evaluate the quality of case management at health facilities and provide immediate onsite feedback for improvement and mentorship to healthcare workers. In addition to mRDT and microscopy QA/QC, the MSDQI package also focuses on improving the clinical skills of individual healthcare workers and adherence to established malaria diagnostic and treatment guidelines. In total, the MSDQI package includes modules for OPD, IPD, ANC, mRDT, microscopy, SM&E, and logistics and supply. MSDQI is intended to be implemented by district supervisors, but as of the end of fiscal year 2019 MSDQI had not yet been implemented and scaled-up. The data collected during MSDQI health facility supervisory visits are summarized by a score and are automatically uploaded to and available in DHIS2.

PMI objective, in support of NMCP

PMI supports all aspects of ZAMEP's case management approach.

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

- In 2018, 96 health facility laboratories (57 public, 18 private, 8 faith-based, 13 military) were targeted and received malaria microscopy QA/QC supervision visits. A total of 77,386 slides were collected from health facilities for mMQAQC. In addition, 60 laboratorians were targeted and received training on mMQAQC and 40 laboratorians were targeted and attended feedback meetings. An additional 120 healthcare workers were targeted and received training on microscopy slide preparations for outpatient and inpatient departments at health facilities. Establishment of the ZAMEP slide bank was finalized in 2016 and expanded in 2018 with an additional 220 slides of Po and Pv.
- Malaria RDT QC supervision visits were conducted in 171 health facilities, 60 healthcare workers were targeted and received mRDT training, and 20 healthcare workers were targeted and attended feedback meetings. The number of public health facilities enrolled in the mRDT QC program increased from 168 to 171.
- In April 2019 following recommendations from the Zanzibar Malaria Elimination Advisory Committee, ZAMEP began implementation of a process to confirm all mRDT positive tests by microscopy starting initially in 29 health facilities from three districts (Mjini, Magharibi, and Micheweni). Among 222 slides created from positive mRDT collected between April to September 2019, 88.7 percent were positive and 7.2 percent were negative by microscopy. Among those that were positive, the proportions by Plasmodium species was Pf 85.3 percent, Pm 5.1 percent, mixed Pf and Pm 7.1 percent, and Po 1.5 percent.
- The Zanzibar Malaria Diagnosis & Treatment Guidelines call for single low dose administration of primaquine along with ACT. Primaquine distribution began in October 2016, and by the end of 2017 all public health facilities were stocked. Starting in 2018, ZAMEP began to scale up availability of primaquine in 110 private health facilities, and is exploring options to monitor the stock and provision of primaquine.
- With support from PMI, the electronic application of the MSDQI checklists was finalized, including the electronic system used to manage the data and link it to DHIS2 in collaboration with the Zanzibar HMIS unit and HISP Tanzania. A total of 37 tablets were procured and distributed to district supervisors. Following MSDQI system training for 7 administrators, 11 train-the-trainers, and 25 district supervisors, a pilot of the MSQDI modules and supervision process were implemented in three health facilities. ZAMEP will continue to expand the implementation of MSDQI to cover all public health facilities.
- PMI supported ZAMEP to revise and disseminate 600 copies of the updated Zanzibar Malaria Diagnosis & Treatment Guidelines in 2018 and to conduct initial or refresher

training for 240 healthcare workers across all districts following the official release of the revised guidelines.

- Oriented Community Malaria Surveillance Officers on key messages and tools for use that were used during case follow-up or active case detection.
- Supported community activities that were focused on imported malaria cases and prompt care-seeking onset of fever.

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

- PMI will continue to support the maintenance of the microscopy and mRDT QA/QC systems in public as well as private facilities in Zanzibar as ZAMEP simultaneously transitions from the monthly (microscopy) or quarterly (mRDT) supportive supervision training for healthcare workers to the MSDQI package conducted at health facilities.
- PMI will also support ZAMEP to continue microscopy training and capacity building for all public laboratories in Zanzibar with invitations to participants in the private sector to expand the capacity of microscopy QA/QC to the private facilities in both Pemba and Unguja. PMI support for microscopy will include provision of the supplies needed to maintain the malaria slide bank and reference laboratory at ZAMEP, and the establishment of a malaria slide bank in Pemba.
- PMI will continue to support case management training and supervision as ZAMEP simultaneously transitions to the MSDQI package conducted at health facilities.
- PMI will continue to provide guidance and support the training to expand the availability, use, and monitoring of primaquine in private health facilities.
- PMI will support SBC activities to combat imported malaria cases by travelers, promote preventative and curative malaria-related behaviors during active case detection activities, and promote prompt care seeking upon onset of signs and symptoms of malaria.
- PMI will support SBC activities during active case detection response which will engage and empower households with suspected malaria to take the steps necessary to protect the household, to seek care within 24 hours of onset of fever, and to ensure testing is conducted when there is a fever.

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 expanding, contracting, or changing any Case Management activities? If so, why and what data did you use to arrive at that conclusion?
PMI will continue to support case management activities in Zanzibar as in previous years, to ensure that ZAMEP and Zanzibar as a whole continue to make progress in the quality and coverage of diagnosis and treatment. Please see Table 2 for a detailed list of proposed activities with FY 2020 funding.

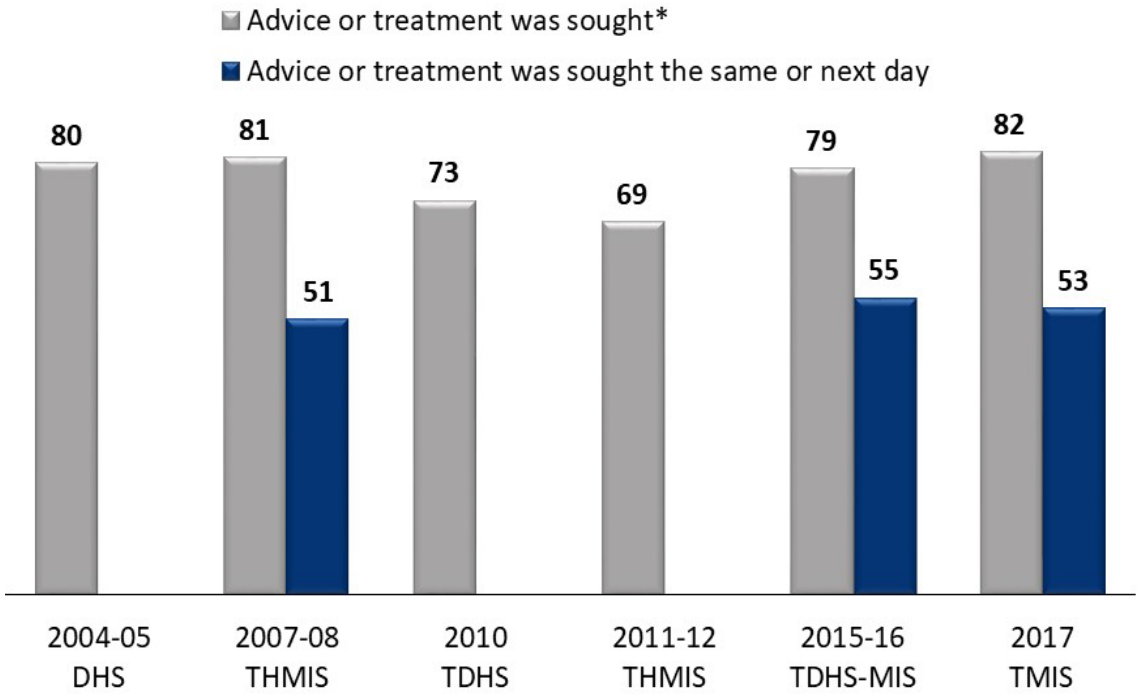
Key Question 1

What is the status of care-seeking?

Supporting Data

Figure A21. Trends in Care-Seeking for Fever

Among children under 5 with fever in the 2 weeks before the survey for whom:



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

Conclusion

Despite a relative decrease in 2011-12, care seeking for children with fever has remained high, with care being sought for 8 in 10 children with fever (range 69-82 percent). However, prompt care (i.e., within 24 hours) is sought for just over half of febrile children (range 51-55 percent). This might be addressed programmatically with efforts around SBC for prompt care-seeking.

Key Question 2

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

Supporting Data

Figure A22. Key Barriers and Facilitators to Care Seeking

Facilitator	Type of Factor	Data Source	Evidence
Knowledge about malaria signs and symptoms	Internal	Zanzibar Malaria KAPB Study, 2017	85.4% of people in Zanzibar know that malaria is caused by mosquito bites.
Attitude toward service providers and health facilities	Internal	Zanzibar Malaria KAPB Study, 2017	Sixty-five percent of respondents perceived that a health provider is the best person to talk to when a child had malaria.
Barrier	**Type of Factor**	**Data Source**	**Evidence**
Low knowledge of malaria treatment	Internal	Zanzibar Malaria KAPB Study, 2017	Only 26.9% of respondents were aware that there are medicines that can be used to treat malaria.
Low risk perception about threat of malaria	Internal	Zanzibar Malaria KAPB Study, 2017	Only 40% of respondents indicated they worried that every case of malaria could potentially lead to death.

Conclusion

Zanzibar is progressing toward malaria elimination. In order to achieve the elimination goal, it is critical that all individuals promptly seek care and treatment at the first sign of a fever, even as malaria prevalence remains low and people become less accustomed to malaria occurring in the community. It is also crucial that all suspected cases are tested and confirmed to have malaria infection prior to obtaining treatment to ensure the provision and completion of the full course of appropriate treatment to prevent resurgence and onward transmission. PMI programming will focus on SBC activities targeting both individuals and health providers to reinforce prompt, appropriate care-seeking, as well as adherence to clinical protocols. Furthermore, PMI will incorporate SBC activities targeting travelers, both visitors to Zanzibar and Zanzibaris returning from areas where malaria is endemic, such as mainland Tanzania, to reinforce adoption of malaria prevention behaviors.

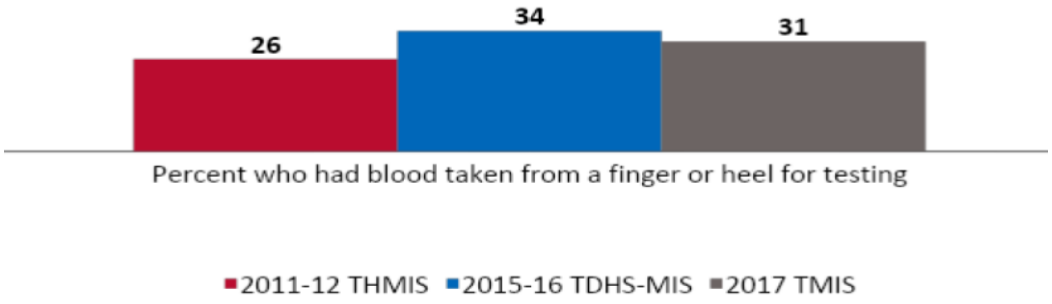
Key Question 3

How have malaria testing and treatment practices evolved over time?

Supporting Data

Figure A23. Trends in Appropriate Treatment of Children with Fever

Among children under 5 with fever in the 2 weeks before the survey, percent who had blood taken from a finger or heel for testing



Conclusion

According to household survey data, although 82 percent sought treatment and 52 percent did so on the same or next day after onset of fever, only one-third of children with fever had blood taken from a finger or heel, a proxy indicator for malaria testing. This indicates a need for support for provider training and supervision around adherence to universal diagnostic confirmation.

Key Question 4

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

Supporting Data

Figure A24. Key Barriers and Facilitators to Appropriate Testing and Treatment Practices

Facilitator	Type of Factor	Data Source	Evidence
Accessibility of malaria treatment commodities	Environmental	ZAMEP project reports	Most of the public health facilities in Zanzibar have not experienced a stockout of malaria medicines in the past 12 months.

Barrier	Type of Factor	Data Source	Evidence
Lack of adequate systems and practices to ensure the delivery of quality health services	Environmental	Boresha Afya and ZAMEP Project Reports	Project data suggests quality assurance systems are currently lacking. Boresha Afya, together with ZAMEP, is going to start using the MSDQI Tool to monitor the quality of services offered and strengthen quality monitoring indicators.

Conclusion

Health provider adherence to the malaria treatment protocol is critical in improving malaria case management. PMI programming will focus behavior change interventions such as focused job aids and tools to address health providers attitudes and practices that can be integrated into the existing national SBC platform for health facilities. PMI programming might also support efforts to increase the understanding of the role that behavioral factors play in the testing and treatment practices in Zanzibar, and to address those factors through continued training, mentorship, and supportive supervision.

Key Question 5

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

Supporting Data

PMI supports ZAMEP to cover all public health facilities across both islands of Zanzibar.

Conclusion

- PMI supports improvement of malaria case management with an emphasis on integration of service delivery with other major health priorities in all public health facilities in Zanzibar. PMI funds will be used to support the continued implementation and scale-up of the MSDQI package including the electronic tablet-based system for recording, reporting, and using data.
- The main activity in the community is advocacy on awareness of malaria and early health seeking behavior. However, Zanzibar does implement a malaria reactive case detection (RCD) system, whereby community malaria surveillance officers (CMSOs) provide diagnosis by mRDT and treatment in community households. Ensuring the quality of case management by CMSOs is addressed through their assigned health facility. For a description of and PMI support for the RCD system, see the SM&E section.

Key Question 6

What was the estimated need for RDTs during calendar year? What are the estimated RDT needs over calendar years 2020 and 2021?

Supporting Data

Figure A25. Gap Analysis of RDT Needs

Calendar Year	2019	2020	2021
RDT Needs			
Total country population	1,581,561	1,625,844	1,671,368
Population at risk for malaria [1]	1,581,561	1,625,844	1,671,368
PMI-targeted at-risk population	1,581,561	1,625,844	1,671,368
Total number of projected fever cases[2]	310,581	357,686	417,842
Percent of fever cases tested with an RDT	90%	90%	90%
Total RDT Needs [3]	**279,523**	**321,917**	**376,058**
Partner Contributions*			
RDTs carried over from previous year	*3,440*	*196,817*	*207,779*
RDTs from Government	*125,000*	*5,333*	*0*
RDTs from Global Fund	*347,900*	*331,675*	*23,569*
RDTs from other donors	0	*0*	*0*
RDTs planned with PMI funding	0	0	0
Total RDTs Available	**476,340**	**533,825**	**231,348**
Total RDT Surplus (Gap)	**196,817**	**211,908**	**-144,710**

Footnotes:

[1)] Geographic coverage: the entire target area at risk (i.e., national quantification).

[2)] The total number of projected fever cases are estimated assuming 22% and 25% of at-risk population will receive an mRDT in 2020 and 2021, respectively.

[3)] Indicates needs to fill the pipeline.

* Government of Zanzibar will procure 5,333 highly sensitive RDTs for use in reactive case detection. No commitments have been made by Global Fund for 2021.

Conclusion

- Zanzibar procures a combination mRDT. As in previous years, the Global Fund will supply the full mRDT need for Zanzibar.
- ZAMEP estimates a surplus of 211,000 mRDTs for calendar year 2020.

Key Question 7

What was the estimated need for ACTs during calendar year 2019? What is the estimated need for ACTs over calendar years 2020 and 2021?

Supporting Data

Figure A26. Gap Analysis of ACT Needs

Calendar Year	2019	2020	2021
ACT Needs			
Total country population	1,581,561	1,625,844	1,671,368
Population at risk for malaria	1,581,561	1,625,844	1,671,368
PMI-targeted at-risk population [1]	1,581,561	1,625,844	1,671,368
Total projected number of malaria cases	4,745	4,878	5,014
Total ACT Needs [2]	**4,867**	**5,103**	**5,110**
Partner Contributions			
ACTs carried over from previous year	0	0	0
ACTs from Government	0	0	0
ACTs from Global Fund	4,867	5,103	5,110
ACTs from other donors	0	0	0
ACTs planned with PMI funding	0	0	0
Total ACTs Available	**4,867**	**5,103**	**5,110**
Total ACT Surplus (Gap)	**0**	**0**	**0**

Footnotes:
1) Geographic coverage: the entire target area at risk (i.e., national quantification).
2) Quantity does not include estimates for stock availability or pipeline needed.

Conclusion

- PMI has not procured ACTs for Zanzibar for several years. As in previous years, the Global Fund will supply the full ACT need for Zanzibar.
- In Zanzibar, treatment for uncomplicated malaria includes single low dose primaquine. WHO has been supporting the scale-up of SLD primaquine for all public and private health facilities. ZAMEP estimates the need for 12 packs of primaquine 15mg and 11 packs of primaquine 7.5mg for each year during 2019-2021.

Key Question 8

What was the estimated need for severe malaria treatment and any other treatments as applicable during calendar year 2019? What is the estimated need for calendar years 2020 and 2021?

Supporting Data

Figure A27. Gap Analysis of Injectable Artesunate Needs

Calendar Year	2019	2020	2021
Injectable Artesunate Needs			
Projected # of severe cases[1]	403	415	426
Projected # of severe cases among children	N/A	N/A	N/A
Projected # of severe cases among adults	N/A	N/A	N/A
Total Injectable Artesunate vials Needs [2]	**1,612**	**1,660**	**1,704**
Partner Contributions			
Injectable artesunate vials carried over from previous year	0	2,024	4,108
Injectable artesunate vials from Government	0	0	0
Injectable artesunate vials from Global Fund	3,636	3,744	3,840
Injectable artesunate vials from other donors	0	0	0
Injectable artesunate vials planned with PMI funding	0	0	0
Total Injectable Artesunate vials Available	**3,636**	**5,768**	**7,948**
Total Injectable Artesunate vials Surplus (Gap)	**2,024**	**4,108**	**6,244**

Footnotes:
1) Data source: estimates of severe cases are based on historical data recorded in the Zanzibar HMIS/DHIS2.
2) ZAMEP assumes a need for 4 vials of Artesunate injection per severe case of malaria.

Conclusion

- Global Funds supports the procurement of injectable artesunate for Zanzibar. ZAMEP estimates a surplus of 4,000 vials of injectable artesunate in calendar year 2020. Injectable artemether is not routinely used at public health facilities in Zanzibar.
- Use of pre-referral rectal artesunate at peripheral health facilities is permitted if injection is not available yet in practice does not occur as rectal artesunate is not procured by either the RGoZ or its partners.

Key Question 9

Are the first-line ACTs effective and monitored regularly?

Supporting Data

FigureA28. 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	Bububu, Micheweni, and Uzini	Amodiaquine + artesunate (ASAQ) + primaquine	Pending	Karolinska Institute

Footnotes: ACPR: adequate clinical and parasitological response; ASAQ: amodiaquine-artesunate

Conclusion

- ZAMEP conducted TES in 2017, supported by the Global Fund, Karolinska Institute, Uppsala University, and Zanzibar MoH, with an overall aim to assess the therapeutic efficacy and safety of ASAQ combined with a single low dose of primaquine (0.25 mg/kg) for the treatment of uncomplicated *P. falciparum* malaria patients in Zanzibar. The study was implemented in three health facilities located in three districts covering both Unguja and Pemba Islands, i.e. Bububu Military Hospital (West District, Unguja), Uzini Primary Health Care Unit (Central district, Unguja), and Micheweni Primary Health Care Center (Micheweni district, Pemba). These facilities were responsible for the final screening of patient's eligibility, enrollment, treatment, and follow-up. There were also 10 selected primary health care facilities (satellite facilities) used to pre-screen patients with symptoms and signs compatible with uncomplicated malaria using mRDT. Those patients who showed potential study eligibility were transferred to the nearby study site indicated above. The satellite facilities were Tumbe, Shumba viamboni (Micheweni District); Chukwani, Kizimbani, Shakani, Kombeni, Bububu, Selem, Magogoni (West District); and Mwera, Miwani, Machui (Central District). A total of 146 patients were enrolled. Preliminary data indicates that the crude efficacy of the first-line treatment of uncomplicated *P. falciparum* malaria in Zanzibar was 97 percent (142/146); PCR is pending at Karolinska Institute.
- There currently is no plan to conduct additional TES in Zanzibar. The Zanzibar Malaria Elimination Advisory Committee report 2018 recommended ZAMEP regularly review TES results from the mainland. Refer to the description and results of TES conducted in mainland Tanzania.

Key Question 10

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

Supporting Data

N/A

Conclusion

N/A

Key Question 11

Are there any other considerations that impact your funding allocation in this category?

Supporting Data

N/A

Conclusion

N/A

2.B. DRUG-BASED PREVENTION

NMCP objective
Targets in the Zanzibar Malaria Strategic Plan IV 2018 – 2022/23 ZAMEP are to increase the use of long-lasting ITNs among pregnant women from 68 percent in 2016 to 95 percent in 2022/23 through facility-level distribution of ITNs to pregnant women at their first ANC visit.
NMCP approach
• Strategies for prevention of malaria in pregnancy are integrated in the overall antenatal care (ANC) package for maternal health. They include the provision of long lasting insecticidal nets at the first contact, provision of prompt testing of suspected cases and treatment of malaria positive cases, and health education on prevention and prompt treatment seeking behavior. • Zanzibar stopped the provision of IPTp in 2014 following many years of very low malaria prevalence.
PMI objective, in support of NMCP
PMI supports the WHO recommended approach to reduce the burden of malaria infection among pregnant women: • Insecticide treated nets Effective case management of malaria illness and anemia
PMI-supported recent progress (past ~12-18 months)
• PMI continued support of ITN continuous distribution through EPI and ANC clinics (more details in ITN section). PMI also supported ZAMEP to review the diagnostics and treatment guidelines to include a MIP chapter. • PMI supported an ongoing process of developing a Quality Improvement (QI) tool, based on the MSDQI described in the Case Management section to encourage supervisors and

providers to monitor the quality of malaria services, including MIP. The MSDQI package is being adapted for Zanzibar and will be used to observe providers' diagnosis, treatment and ANC practices. Facilities will be selected as part of supportive supervision, with priority given to the low performers, identified from previous rounds of supervision data.

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

- PMI will continue to support MIP efforts in Zanzibar including ANC supervisory visits by ministry staff using the modified MSDQI tool. The QI visits will ensure that pregnant women receive preventive services, accurate diagnostic testing, and effective treatment.
- PMI will support the roll out of the revised national case management guidelines that include a MIP chapter. PMI will continue support for the procurement and provision of long-lasting ITNs to pregnant women through continuous distribution at ANC (budget and more details in ITN section), and continue support for SBC to increase ITN use and ANC attendance (see SBC section).

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

PMI Goal

Support the national strategy for MIP, which includes provision of ITNs at first ANC visit and effective case management of malaria, in accordance with WHO recommendations.

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

Funding for MIP is included in case management, ITN, and SBC budgets. PMI will continue supporting ITN distribution for pregnant women attending ANC and provision of prompt case management.

- PMI will continue to support MIP efforts in Zanzibar including ANC supervisory visits by ministry staff using the modified MSDQI tool.
- PMI will support the rollout and orientation of the revised national case management guidelines which include a MIP chapter.
- PMI will continue support for the procurement and provision of long-lasting ITNs to pregnant women through continuous distribution at ANC.
- PMI will support SBC initiatives focusing on preventing and treating MIP

More details can be obtained in the ITN and case management sections.

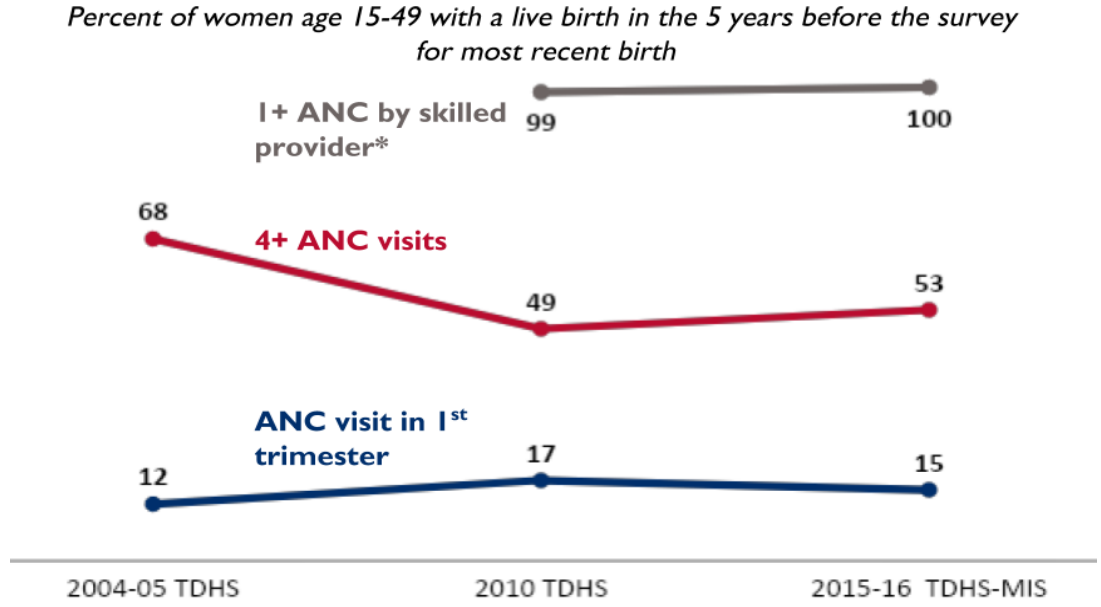
Please see Table 2 for a detailed list of proposed activities with FY 2020 funding.

Key Question 1

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

Supporting Data

Figure A29. Trends in ANC Coverage



*Skilled provider includes doctor/assistant medical officer (AMO), clinical officer, assistant clinical officer, nurse/midwife, assistant nurse, and maternal and child health (MCH) aide.

For additional information on key barriers and facilitators to ANC Attendance, refer to Mainland MIP section

Conclusion

In Zanzibar, pregnant women are facing some barriers to ANC attendance, particularly in attending early ANC before 12 weeks. Increasing early ANC attendance is important especially for ITNs distribution and detection of malaria during pregnancy. PMI will continue working with PMI will continue working with ZAMEP to support SBC initiatives in Zanzibar, especially mobilizing pregnant women to attend ANC as early as possible. This will be done through an integrated SBC campaign that promotes the benefits of early ANC attendance to mothers and their unborn babies. The SBC activities will be positioned to create community pressure and support for pregnant women to attend ANC. This will be done through radio and mid-media, as well as community-based interventions such as *shehia* health committees.

Key Question 2

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

Supporting Data

N/A- According to Zanzibar guidelines, provision of the IPTp is not among the preventive strategies.

Conclusion

N/A- According to Zanzibar guidelines, provision of the IPTp is not among the preventive strategies.

Key Question 3

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

Supporting Data

N/A

Conclusion

N/A- According to Zanzibar guidelines, provision of the IPTp is not among the preventive strategies.

Key Question 4

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

Supporting Data

N/A

Conclusion

Self- reported or measured fever is not an indicator captured by HMIS.

Key Question 5

What was the estimated need for IPTp commodities during calendar year 2019? What is the estimated need for IPTp commodities over calendar years 2020 and 2021?

Supporting Data

N/A- According to Zanzibar guidelines, provision of the IPTp is not among the preventive strategies.

Conclusion

N/A- According to Zanzibar guidelines, provision of the IPTp is not among the preventive strategies.

Key Question 6

Are there any other considerations that impact your funding allocation in this category?

Supporting Data

N/A

Conclusion

N/A

3. CROSS-CUTTING AND OTHER HEALTH SYSTEMS

3.A. SUPPLY CHAIN

NMCP objective
• Ensure quality assured diagnosis and appropriate case management in all health facilities and at community level to 100 percent by 2023 • Ensure accurate quantification, timely delivery, and routine monitoring and distribution of commodities • Increase appropriate vector control measures to the population at risk of malaria to 100 percent by 2023 (including availability of LLINs)
NMCP approach
• The program will ensure laboratory commodities are procured, stored, and distributed to all health facilities. • The supply chain of antimalarial commodities will be ensured through accurate quantification, forecasting and efficient procurement of the commodities, good storage and timely distribution to all health facilities.
PMI objective, in support of NMCP
PMI will support ZAMEP to collect consumption and logistics data needed for annual quantification and procurement planning, strengthening the Zanzibar Integrated System that manage antimalarials and mRDTs to improve data quality; strengthen the LMU capacity in Zanzibar.
PMI-supported recent progress (past ~12-18 months)
The following key activities were implemented: • Quantification – conducted quantification for malaria commodities

- Logistics management information systems – PMI's implementing partner provides overall support to the eLMIS including management, maintenance and user support, creation of dashboards, visualizations and customized reports.
- System design – PMI funding supported the redesign of the Zanzibar Integrated Logistics System (ZILS), including monthly reporting and resupply and lowered inventory levels; developed SOPs and training curriculum; conducted TOT to district level
- Performance management – The project updated the performance monitoring plan, conducted quarterly supply chain performance review meetings, and convened monthly stock status meetings, attended by vertical programs, CMS, and other stakeholders
- Organizational capacity and workforce - Conducted supportive supervision, incorporating data quality assessment (DQA), and offered on the job training to improve facility staff performance; rolled out IMPACT teams to the district levels.

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

The following key activities are planned:

- Ongoing support to managing the eLMIS; begin eLMIS transition
- Quantification of malaria product requirements and routine supply plan reviews
- Transition of the LMU to Government of Zanzibar
- Support implementation of revised ZILS
- Performance review meetings, stock status meetings
- Updating Zanzibar Supply Chain Action Plan
- Assess and support feasibility to integrate existing supply chain with the services delivery database (DHIS2)

PMI Goal

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

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

PMI will maintain the same levels of funding to support supply chain activities in Zanzibar. Please see Table 2 for a detailed list of proposed activities with FY 2020 funding.

Key Question 1

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

Supporting Data

Figure A30. Summary of Month-Of-Stock for Malaria Commodities

Month	ATE INJ	Art + Amo (3 tab) 100/270	Art+ Amo (6 Tab) 100/270	Art + Amo 25/67.5	Art + Amo50/135	MRDT	Primaquine 15mg	Primaquine 7.5mg
Oct-18	0.4	0	0	0	0	0	0	19.7
Nov-18	0	0	0	0	0	0	0	0
Dec-18	0	0	0	0	0	0.5	0	0
Jan-19	0	0	0	0	0	0.2	0	0
Feb-19	0	11.8	0	0	0	0	0	0
Mar-19	0	1.1	7.7	0	0	5.4	0	0
May-19	0	1.7	0	2.3	4.1	5.2	258.4	0
Jul-19	0	0	3.5	0	0.1	3.7	258.4	0
Aug-19	31.6	0	1.6	0	0.1	2.9	223.7	0
Sep-19	14.6	0	0.9	0	0.1	5.1	28.6	0

Conclusion

- The month of stock (MOS) table summarizes the situation at Central Medical Store (central level). Note, maximum stock level is nine months and minimum stock level is six months.
- ACTs and Artesunate Injection show zero MOS, which is different from drug availability, and stock out at health facilities. The reasons behind this is that the quantification is done based on the positive cases which are generally few and are distributed to the areas needed.
- Zanzibar experienced stock outs of mRDTs at the beginning of the year. Currently, CMS has sufficient stocks.

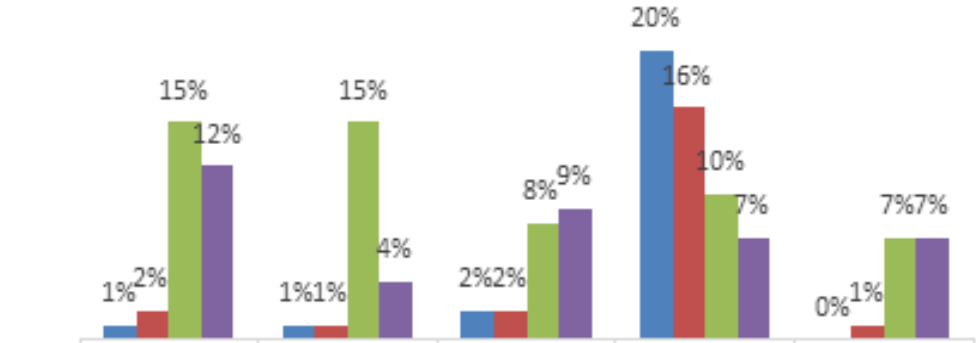
- The high quantities of Primaquine 15mg are because this commodity was new in the eLMIS and hence there has been low consumption/movement to start.
- PMI will continue supporting ZAMEP and CMS to motor the availability of malaria commodities and strengthening quantification process.

Key Question 2

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

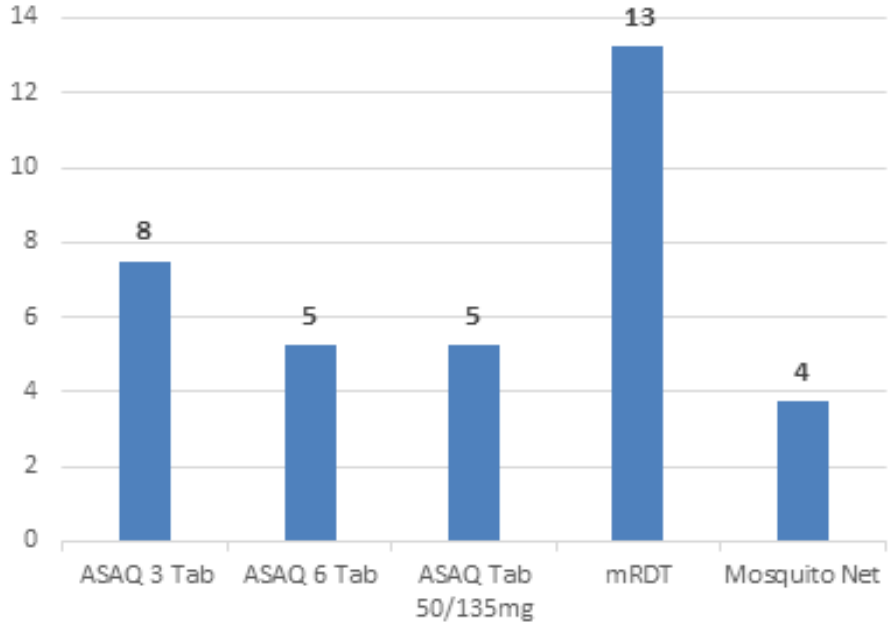
Supporting Data

Figure A31. Zanzibar Commodity Stock Out Rates October 2018 – September 2019



	ASAQ 3 Tab	ASAQ 6 Tab	ASAQ Tab 50/135mg	mRDT	Mosquito Net
Q1	1%	1%	2%	20%	0%
Q2	2%	1%	2%	16%	1%
Q3	15%	15%	8%	10%	7%
Q4	12%	4%	9%	7%	7%

Figure A32. Zanzibar Overall Stock Out



Conclusion

Over the past year, stockout rates for artesunate and amodiaquine (ASAQ) have ranged from 1 percent to 15 percent, with overall stockout rates between 5 percent and 8 percent. In quarter 3, stockout rates for ASAQ 3tabs and ASAQ 6 tabs rose to 15 percent, but both declined in quarter 4. For mRDTs, quarter 1 showed the highest stockout rate of 20 percent, but since then has steadily decreased for subsequent quarters.

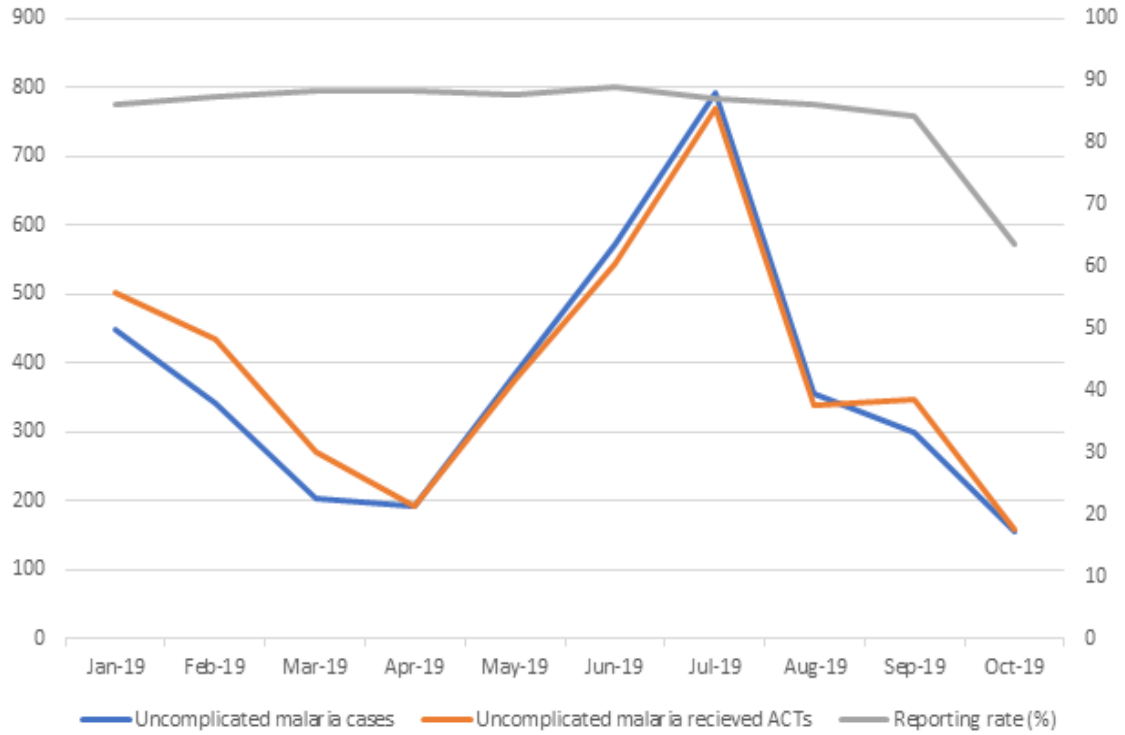
To address stockouts, continued investments are needed to support the rollout of the redesigned ZILS, where stock data will be reported monthly (rather than quarterly), ongoing management, maintenance, and improvements in the eLMIS, and continued support with forecasting and supply planning.

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

Figure A33. ACTs Dispensed to Uncomplicated Malaria Patients by Month in 2019



Source: DHIS2

Conclusion

Data above are from the DHIS2, showing the uncomplicated malaria cases and uncomplicated malaria that received ACTs. It will be helpful to do an analysis of consumption data from DHIS2 and consumption data from eLMIS to determine how closely they align.

Key Question 4

What are the trends in LMIS reporting rates?

Supporting Data

Figure A34. Zanzibar Integrated Logistics System, *Hospital Reporting Rates and Timeliness*

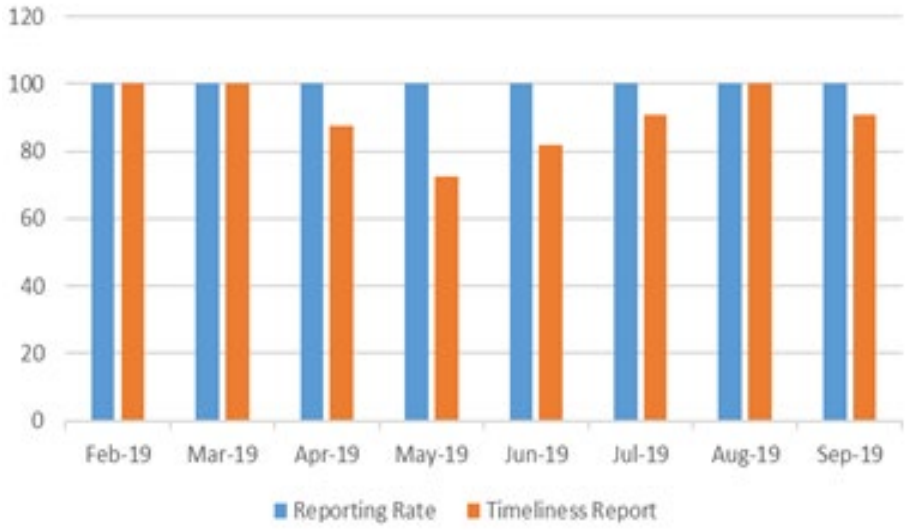
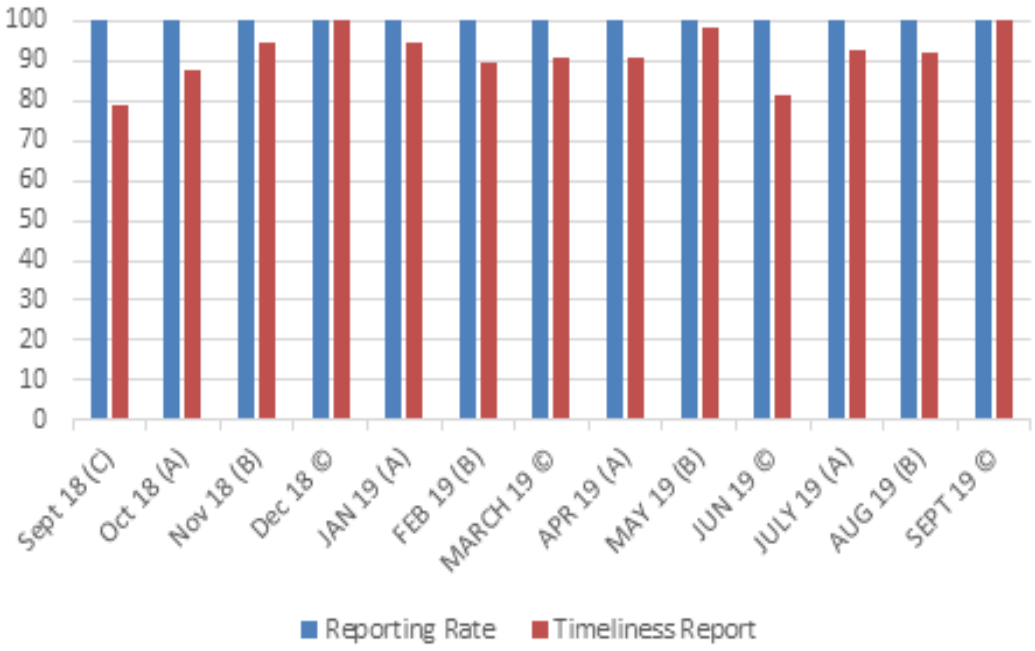


Figure A35. Zambia Integrated Logistics System, *Program Reporting Rate and Timeliness*



Conclusion

Reporting rates have improved over time. PMI efforts will be directed to maintain the improvement in reporting rates and put more emphasis on improving timeliness through supportive supervision activities.

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 funding has been directed to support strategy and planning, human resources development and capacity building, in country storage and distribution, governance and financing, forecasting and supply chain management.

Conclusion

- PMI will continue supporting efforts to strengthen forecasting, supply planning, strategy and planning, in country storage and distribution, monitoring and evaluation as well as human resources capacity building, support management information systems such as LMIS.
- PMI will continue with efforts to strengthen the transitioned LMU unit to continue with monitoring of stock levels of all malaria commodities at central medical store and zones and health facilities through routine physical counts.
- PMI will continue to support ZAMEP to conduct quantification exercises and the quarterly review of the supply plan to improve coordination and procurement planning across development partners

Key Question 6

Are there any other considerations that impact your funding allocation in this category?

Supporting Data

N/A

Conclusion

N/A

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

NMCP objective
The SM&E priority objective in the ZAMEP Malaria Strategic Plan IV 2018–2023 is to reinforce malaria surveillance capacity for malaria elimination to actively investigate and classify 100 percent of confirmed malaria cases by 2023.

NMCP approach

- ZAMEP's approach to SM&E for malaria elimination is to maintain and strengthen malaria case surveillance and reactive case detection, including a data collection and management system that enables the identification of new cases of malaria and trigger investigation and response measures. ZAMEP achieves this through the use of the malaria early epidemic detection system (MEEDS), the malaria case notification (MCN) system, and HMIS/DHIS2.
- MEEDS includes a strategy to collect daily data for three key indicators (total visits, confirmed malaria-positive cases, confirmed malaria-negative cases) among outpatients from all health facilities (public and private). Weekly aggregated data are transmitted from each health facility using a customized cell phone menu. Text messages with weekly data summary are sent to cell phones of key ZAMEP staff and District Medical Officers, and longitudinal weekly aggregated data are made available for viewing over a secure web site.
- Health facilities also collect and report monthly aggregate malaria indicators for the routine health management information system (HMIS) through the DHIS2 platform. While key malaria indicators are collected and reported through separate systems within health facilities, annual comparisons of data completeness on the key malaria indicators have revealed significant differences between MEEDS and HMIS. Both the Zanzibar malaria elimination feasibility study and Zanzibar Malaria Elimination Advisory Committee (ZMEAC) recommended maintaining MEEDS as a separate system until the capacity of HMIS has been improved for malaria-related surveillance data. However, ZAMEP utilizes the HMIS/DHIS2 data on severe malaria cases, IPD admissions, and mortality related to malaria.
- The aim of the MCN system is to conduct a household investigation of every confirmed case of malaria infection within 24 hours of notification and conduct reactive case detection. In this system, a Community Malaria Surveillance Officer (CMSO) travels to the case household to interview and test household members and occasionally those of neighboring households when specific hotspots are identified and investigated. Individual case clinical and epidemiological data are collected by CMSOs during the investigation through tablet-based devices and transmitted to the same server used for MEEDS. As part of the investigation, CMSOs also classify cases according to the WHO Framework for Malaria Elimination, 2017. On a weekly basis, the MCN system generates automated data outputs describing malaria case notifications, classifications, and distribution (location). Using this data, ZAMEP completes village mapping to highlight foci of transmission (i.e., hotspots) in relation to implementation of various malaria interventions. ZAMEP is currently developing capacity in collaboration with the HMIS unit from the Zanzibar health ministry to integrate the MCN system to DHIS2. In addition, CMSOs provide SBC materials while at the household on the need for early malaria testing and adherence to anti-malarial treatment. CMSOs ascertain ITN use and provide coupons for a free ITN when needed, as well as

identify visible mosquito larval sources, and provide information on environmental management.

PMI objective, in support of NMCP

PMI supports the ZAMEP strategy to identify, investigate, and classify all cases of malaria utilizing the passive and active (reactive) surveillance systems and affiliated electronic tools in Zanzibar.

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

- The overall functioning of the MEEDS and MCN systems are good and are showing improvement in some parameters. To address reported delays in case investigations in 2017, ZAMEP increased the number of CMSOs from 16 to 26 by 2019. Between January 2018 and September 2019, the proportion of cases investigated at the household level within 48 hours of notification increased from 69 percent to 80 percent.
- ZAMEP disseminates information about the functioning of the MEEDS and MCN to the districts via quarterly reports. In 2017, 98 percent of those quarterly reports were disseminated on time (within the first two weeks of the following quarter).
- With support from PMI partners and in collaboration the HMIS unit of the Zanzibar health ministry, ZAMEP continued progress toward identifying service options and developing a workplan for the integration of MEEDS with routine HMIS, including linking both MEEDS and MCN data within the DHIS2 platform. The current options include 1) continuing MEEDS and routine HMIS as separate but parallel systems for the collection and reporting of malaria surveillance data, 2) linking the MEEDS system so data is available through DHIS2 but maintaining MEEDS and routine HMIS separately, or 3) transitioning from MEEDS to the routine HMIS. The decision on which course of action to take and a timeline is pending additional assessments of the impact on the availability of timely and quality malaria-related data to meet ZAMEP's programmatic needs.
- With support from PMI partners, ZAMEP continued to add questions to the MCN case investigation to capture additional information to enhance the classification of individual malaria cases and their associated foci according to definitions in the WHO Framework for Malaria Elimination. In 2018, 68 percent of investigated cases were classified as imported, with the majority of cases reporting travel originating from Dar es salaam, Morogoro, Tanga, Bagamoyo, and the Lake Victoria region. ZAMEP is exploring interventions focusing on screening travelers and monitoring imported cases, alongside other interventions for residual active foci. In addition, new features were added to the MCN tablet tool to enable assessment of CMSO accuracy in performing case investigation and classification.

PMI-supported planned activities (next ~12-18 months, supported by currently available funds)
• PMI will support the maintenance of MEEDS at all government and private health facilities until such time it is determined MEEDS will be transitioned to routine HMIS. If, and when, MEEDS is transitioned to routine HMIS, PMI will support the strengthening of malaria-related surveillance data collection and analysis within HMIS. • PMI will continue to support and strengthen the MCN system, including solving system failures, and reactive case detection among household and neighborhood contacts of confirmed cases. Epidemic confirmation procedures will be maintained and response systems further strengthened to allow ZAMEP to deploy a small cadre of trained staff to investigate all suspected epidemics. In addition, PMI will support the integration of data generated from MCN to DHIS2 and building capacity among ZAMEP and HMIS unit staff for basic IT system maintenance and troubleshooting IT issues related to MCN. • PMI will continue to strengthen ZAMEP's ability to analyze and disseminate SM&E-related information for decision making, hold regular meetings and attend TWG's to review and discuss SM&E activities, and make regular SM&E supervisory visits to the field. • PMI will support the inclusion of a malaria indicators in periodic national representative household (i.e., DHS and MBS) planned in calendar year 2020. • PMI will support participants for the FETP Frontline (Basic) course with an emphasis on selecting participants working in malaria, such as surveillance officers, malaria focal persons, and data quality improvement liaisons. For a description of FETP activities, see the health system strengthening section. • For a description of PMI support for entomological surveillance and insecticide resistance monitoring, see the vector control section. For a description of PMI support for therapeutic efficacy studies, see the case management section. For a description of PMI support for operational research and program evaluation, see the operational research section.

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

Do you propose expanding, contracting, or changing any SM&E activities? If so, why and what data did you use to arrive at that conclusion?
PMI support for SME activities in Zanzibar will continue with an emphasis in building capacity of ZAMEP and HMIS in the implementation of MEEDS, MCN, and HMIS-related systems; integration

of data from these systems within DHIS2; and interpretation and use of these data for decision making.

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 - 2023

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

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

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

Conclusion

N/A

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-Supported Activities

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

- The information reported is in reference to both MEEDS and HMIS as both are used in Zanzibar for malaria-related data.
- PMI supports MEEDS and HMIS activities across all administrative levels except the secondment of staff below the central/ZAMEP level.
- Community-level malaria surveillance and case management is currently implemented as part of the MCN and reactive case detection system. Community level support is directed toward CMSOs.

Key Question 3

What are the outcomes of HMIS strengthening efforts?

Supporting Data

Figure A38. HMIS Strengthening Efforts

		2017	2018
Timeliness	% of reports received on time	MEEDS 48% HMIS 47%	MEEDS 71% HMIS54%

		2017	2018
Completeness	“Confirmed malaria cases for children under 5 years of age" was reported in X% of facility-months	MEEDS 94% HMIS 84%	MEEDS 98% HMIS 93%
Accuracy	Populate with most recent DQA data	96%	96%

Conclusion

For this evaluation, metrics for both HMIS and MEEDS were used. Between 2017 and 2018, data quality has improved for both systems.

Key Question 4

Are there any other considerations that impact your funding allocation in this category?

Supporting Data

N/A

Conclusion

N/A

3.C. SOCIAL AND BEHAVIORAL CHANGE (SBC)

ZAMEP Objective
The Zanzibar Malaria Elimination SBC Strategy 2018-2023 directly supports achievement against Zanzibar Malaria Strategic Plan 2018-2023 and contributes to behavior-focused outcomes across all other malaria interventions. Effective implementation of the SBC strategy will lead to changes in behavioral factors including knowledge, attitudes, beliefs, perceived risk and severity, self-efficacy, skills, access and norms, which will contribute to the achievement of the selected behavioral objectives. The ZAMEP’s SBC activities aim to promote positive human behaviors for malaria elimination in Zanzibar.
ZAMEP Approach
ZAMEP’s approach to malaria SBC is guided by the Zanzibar Malaria Elimination SBC Strategy 2018-2023, which provides a framework for advocacy, communication, and social mobilization activities in support of the Zanzibar Malaria Elimination Strategic Plan 2018–2023. The SBC strategy emphasizes implementation at the national, regional, district, and community levels and is

intended to promote different identified behavioral objectives that cut across service delivery, community, and individual levels.

The overall goal of the strategy is to increase utilization of appropriate malaria interventions at the household level to 85 percent through well-coordinated malaria advocacy, communication, and social mobilization activities. The specific objectives of the strategy are:

- Influence positive behavior change among target audiences with regard to malaria elimination behavior that will help to reduce the incidence of malaria in Tanzania;
- Strengthen coordination and linkages of SBC interventions and improve the dissemination of information to key target audiences at national, district, community, and household levels through a planned and systematic series of activities and channels; and
- Harmonize malaria SBC activities implemented by the different partners.

All malaria SBC activities are coordinated by the ZAMEP SBC Unit. The SBC Unit holds biannual (and ad hoc) technical working group meetings at which all existing SBC implementing partners review progress of activities and review and approve all new activities. Currently, PMI is the only development partner supporting malaria SBC activities in Zanzibar.

PMI Objective in Support of ZAMEP

PMI supports ZAMEP in its effort to eliminate malaria in Zanzibar by 2023. PMI provides support for these efforts at the national, district, and community levels. Nationally, PMI Tanzania provides technical assistance to ZAMEP SBC Unit to build knowledge, skills, and capacity for development of materials, activities and relevant guidelines/strategies, and monitoring of activities. At the district level, PMI support is focused on building capacity and providing tools to district malaria surveillance officers and community health committees. At the community level, PMI support is focusing on interpersonal communication and community-wide events, including theater. PMI supports increasing correct and consistent ITN use, acceptance of IRS, and prompt care-seeking.

PMI continues to support the design and implementation of SBC activities to address imported malaria cases. TV spots are aired at the airport, as well as at the seaport and print materials are placed at all points of entry and exit in Zanzibar. Key messages that are communicated include the declining prevalence of malaria in Zanzibar, the significance of a traveler's travel history, the importance of sleeping under an ITN every night, and the importance of being tested for malaria after feeling malaria symptoms.

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

- Provided technical support coordination and institutional strengthening to the ZAMEP SBC Unit.
- Supported SBC TWG meetings and feedback meetings with *shehias*.
- Supported the development and finalization of the Zanzibar Malaria Elimination SBC Strategy 2018-2023.
- Reviewed and revised materials, radio spots, TV spots, and communication tools to realign with the revised communication strategy.
- Oriented Community Malaria Surveillance Officers on key messages and tools for use during case follow-up or active case detection.
- Supported community activities that were focused on correct and consistent ITN use and care, acceptance of IRS, imported malaria cases and prompt care-seeking onset of fever.
- Conducted routine monitoring and supportive supervision in school malaria clubs, community health management teams, etc.

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

- PMI will continue to support the ZAMEP SBC Unit to design, implement, monitor, and evaluate SBC activities that target and address the factors that influence the practice of key malaria-related behaviors and focus on the aforementioned behaviors.
- PMI will support SBC activities to combat imported malaria cases by travelers, promote the acceptance of IRS, promote correct and consistent use of ITNs, promote preventative and curative malaria-related behaviors during active case detection activities, and promote prompt care seeking upon onset of signs and symptoms of malaria.
- PMI will continue to strengthen the capacity of the ZAMEP SBC unit to work with the active case detection team to ensure SBC activities are integrated and implemented well. SBC activities during active case detection response will aim to engage and empower households with suspected malaria to take the steps necessary to protect the household, to seek care within 24 hours of onset of fever, and to ensure testing is conducted when there is a fever.
- PMI will continue to support SBC monitoring and evaluation activities, including formative research, annual sentinel surveys focused on priority health behaviors, and triangulation of behavioral data with health service delivery data to inform the design of supported SBC activities.

Lastly, PMI/Tanzania's planned activities in Zanzibar address and monitor factors that influence key malaria-related behavior, focusing on ITN use, acceptance of IRS, and prompt care-seeking.

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

Do you propose expanding, contracting, or changing any SBC activities? If so, why and what data did you use to arrive at that conclusion?
With FY 2020 funds, PMI/Tanzania proposes to increase funding for SBC activities in Zanzibar. The increase will support ZAMEP to intensify the SBC activities that focus on behaviors that are related to uptake and use and care of PBO nets. Since ZAMEP is deploying PBO nets with a clear vision of withdrawing IRS in the future, it is important to make sure that households/communities are replacing standard ITNs and using PBO nets as soon as they receive them. Also, with this funding, PMI/Tanzania proposes to continue many of its current SBC activities. Support will remain focused across the three behavioral objectives: ITNs use and care, acceptance of IRS, and prompt care-seeking. These funds also will be used for development of materials, printing, media buys, support to the SBC TWG, and national level capacity strengthening activities. Please see Table 2 for a detailed list of proposed activities with FY 2020 funding.

Key Question 1

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

Supporting Data

Figure A39. Prioritized Behaviors with FY 2020 Funds

Behavior	Target Population	Geographic Focus	Justification
Prompt Care-Seeking For Fever	Caretakers of children under five and pregnant women	All ten districts	In the 2017 MIS, only a quarter of people in Zanzibar (26.9%) knew that there are medicines that can be used to treat malaria.

Behavior	Target Population	Geographic Focus	Justification
Sleep Under an ITN Every Night	Caretakers of children under five and pregnant women, with a specific focus on head of household	All ten districts	In the 2017 MIS, use of ITNs among children under five years of age the night before the survey was reported at 64% and 63% of pregnant women reported sleeping under an ITN the night before the survey. It is critical to continue intensifying the use of ITNs on the areas where there is no IRS.
Acceptance of IRS	Targeted communities on the hot spot areas	All ten districts	Promotion of acceptance of IRS is critical for reaching above 85% of the targeted spraying structures. Providing accurate information before and after the IRS campaign is necessary, in addition to addressing the concerns on the areas that are not being covered.

Conclusion

As pointed out under the case management section, there appears to be a need to promote early care-seeking, especially for frequent travelers. Drawing on this data, PMI Tanzania proposes prioritizing early care-seeking behavior, ITN use and care, and acceptance of IRS with FY 2020 funds. Additional attention will also be given to adherence to case management guidelines through a provider behavior change focused intervention. As noted in the Case Management Section, adherence to case management guidelines is currently suboptimal. While some challenges are regulatory in nature, available data suggests behavioral factors also likely play a role. Unfortunately, at present, these factors are not widely understood. PMI Tanzania will support efforts to better understand the role that behavioral factors play in the testing and treatment practices in Zanzibar and to address those factors through continued training, mentorship, and supportive supervision.

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. Behavioral Determinants of Prioritized Behaviors

Behavior	Key Facilitators	Key Barriers	Knowledge Gaps
Prompt Care Seeking for Children Under Five	Belief that seeking treatment immediately is important	Preference for home treatment or treatment at pharmaceutical retailer Perception that treatment is not affordable	More information on facilitators to prompt care-seeking would help better tailor SBC interventions.
Adherence to case management guidelines	Knowledge of first-line treatment for malaria among registered facilities.	Limited knowledge about recommended treatment for Malaria	Behavioral barriers to adherence to case management guidelines have not been well studied

Conclusion

In CY 2020, PMI will support the Malaria Behavior Survey (MBS) that will look into the mentioned above behavioral priorities. The findings from the MBS will be used to refocus SBC activities and strategies through the identification of the behaviors and ideational factors most likely enable Zanzibar to move towards pre-elimination.

Key Question 3

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

Supporting Data

The communication strategy is well aligned with the broader National Malaria Strategy Plan. It includes the key elements identified in the RBM SBC Working Group National Malaria SBC Strategy Template, and is used to guide design and implementation. However, the SBC Technical Working Group lacks some needed resources/staff and generally only coordinates at the national level only.

Conclusion

Zanzibar has continuously demonstrated the capacity to manage and implement SBC activities. PMI has engaged implementing partners to support institutional strengthening in development of SBC strategies, activities, and monitoring and evaluation plans at the national level.

There is still a need for support on coordination of SBC activities at national and district levels. Strengthening ZAMEP's capacity to conduct formative assessments for new activities and prioritize targeted behaviors will gain good results.

Key Question 4

Are there any other considerations that impact your funding allocation in this category?

Supporting Data

N/A

Conclusion

Due to competing priorities, the budget allocation for SBC activities has been relatively low for Zanzibar in the past few years and will continue to be so, thus impacting the scaling-up of most SBC activities.

3.D. PROGRAM EVALUATION AND OPERATIONAL RESEARCH

NMCP objective
The priority objective for operational research (OR) in the ZAMEP Malaria Strategic Plan IV 2018–2023 is to evaluate and optimize malaria program management and coordination.
NMCP approach
ZAMEP addresses potential OR/PE topics during the program and data reviews conducted during the various thematic technical working groups (e.g., vector control, case management, SM&E, SBC, etc.) prioritizing proposals to evaluate and optimize malaria interventions, to update national strategies and guidelines, and address new challenges as well as guide scale-up of proven strategies in collaboration with research institutions.
PMI objective, in support of NMCP
PMI works jointly with ZAMEP, implementing partners, other donors and research institutions to identify and support relevant OR/PE.
PMI-supported recent progress (past ~12-18 months)
• PMI supported an OR study titled, "Operational research to increase the effectiveness of the malaria surveillance and response system in Zanzibar," between April 2017 and October 2018. The objectives of the study were to evaluate the effective coverage of the surveillance-response system (MEEDS and MCN) in terms of the proportion of the intended target population actually covered by the intervention; identify modifications to the system which could improve performance especially in regards to the probability of infection detection; and estimate the cost and cost-effectiveness of the surveillance-response system approach utilized in Zanzibar, as well as the marginal cost of adding additional households during reactive case detection. • While peer-reviewed publications are pending, preliminary results have shown mRDT prevalence was 2.5 percent among index household members and 0.4 percent among members of neighboring households. Logistic regression analyses on current data showed

that the odds of being mRDT-positive as a member of an index household were 6.3 times that of those in surrounding households ($p<0.0001$; 95 percent CI: 3.9–10.3). These heightened odds of infection reflect evidence in support of visiting the index household for the detection of new cases, and demonstrates much lower marginal return to expanding searches beyond the index household. Results to date indicate, among other things, that the MEEDS/MCN system in Zanzibar achieves a high coverage of case notifications through public health facilities.

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

Through MOP funding, PMI will support the use of genetic sequencing methods applied to samples collected during the rolling cross-sectional survey in the reactive case detection OR study title, "Operational research to increase the effectiveness of the malaria surveillance and response system in Zanzibar," to further understand parasite population genetic diversity and multiplicity of *Plasmodium falciparum* infections in Zanzibar. The genetic patterns might help ZAMEP observe differences between cases classified as local versus imported and between index cases and secondary cases found in the same clusters within and across islands, and if such patterns correspond with data such as reported travel, demographic factors related to clusters, or other predictor variables. Based on these results, future studies to compare genetic data between mainland Tanzania and Zanzibar will be considered.

PMI Goal

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

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

N/A

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. PE/OR Current or Recently Conducted Research

Source of Funding	Implementing institution	Research Question/Topic	Current status/ timeline
Various	*Karolinska Institutet, Sweden*	RCT on MDA, trend analysis of intervention implementation and malaria burden, antimalarial resistance marker monitoring	Completed with follow on work planned (TBD)
BMGF	University of California, San Francisco	Pilot study of genetic epidemiology techniques on samples collected in 2010-2011	Completed

Conclusion

See description above of proposed/planned OR on genetic epidemiology to inform patterns in importation and parasite movement.

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

N/A

Conclusion

N/A

Key Question 3

Are there any other considerations that impact your funding allocation in this category?

Supporting Data

N/A

Conclusion

N/A

3.E. OTHER HEALTH SYSTEMS STRENGTHENING

NMCP objective
Strengthen coordination structures for malaria elimination at different operational levels.

NMCP approach

- Strengthen planning, coordination and implementation of malaria interventions
- Establish malaria elimination advisory group
- Strengthen technical working groups
- Increase resource mobilization for malaria elimination
- Effective control on financial statements reporting, budget and effective utilization of resources to achieve value for money
- Strengthen program procurement management systems

PMI objective, in support of NMCP Infrastructure

PMI and other malaria control partners support the Zanzibar Ministry of Health and ZAMEP to build and strengthen health systems to ensure malaria control efforts are sustainable, country owned, and integrated into the health system. By supporting health systems interventions, PMI, ZAMEP, and malaria partners aim to sustain malaria control gains as Zanzibar moves towards elimination

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

- In the past 12 months, the ZAMEP has engaged in various activities to increase capacity of staff in various areas, including participation in international and national level trainings in, monitoring and evaluation including GIS mapping, malaria diagnostics, malaria field epidemiology and scientific writing techniques. Representatives from ZAMEP also participated in international meetings and trainings, such as Roll Back Malaria Technical Working Group meetings (Social and Behavior Change Communication working group) in Lusaka September 2018, Monitoring and Evaluation for malaria programs course offered by Measure Evaluation in Ghana. The program has abstracts accepted in the 2019 American Society of Tropical Medicine and Hygiene meeting, where ZAMEP staff will present a poster titled “Existence of malaria hotspots in Zanzibar: Potential Contribution to Ongoing Malaria Transmission?”
- PMI supported ZAMEP to conduct two Zanzibar Malaria Elimination Expert Committee (Z-MEAC) meetings. This is an independent malaria elimination advisory committee in line with WHO guidance to guide malaria elimination efforts as described in the 2018/19-2022/23 Zanzibar Malaria Elimination Strategic Plan. ZAMEP convened the second meeting of Z-MEAC on 21 and 22 March 2019. Prior to the second meeting Z-MEAC members and ZAMEP technical staff were able to join a comprehensive site visit organized by the USAID Boresha Afya program in May 2019. Participants visited Kivunge District Hospital (Kaskazini A) and ZAMEP facilities to observe key program operations and interact with front-line workers supporting malaria efforts at antenatal, in-patient, out-patient, clinical and reference laboratory, and surveillance and response settings. The timing of this site visit also

enabled additional technical staff from USAID to participate in the Z-MEAC meeting as observers. The meeting was attended by experts from different countries and successfully guided and provided ZAMEP with recommendations towards eliminating malaria in the island.

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

Reaching and sustaining malaria control and elimination goals requires effective and efficient local systems. Accordingly, PMI funds will be used to address key health system challenges to reaching and maintaining malaria results. In addition, PMI Tanzania will continue to support capacity-building for the ZAMEP and conducting Z-MEAC meetings and follow up on implementation of the recommendations of the expert meeting.

PMI Goal

PMI's support for HSS is aligned with USAID's Vision for Health Systems Strengthening 2015-2019, 127 which defines four strategic outcomes to achieving universal health coverage (defined as a condition where all the people who need health services receive them without financial hardship):

1. Financial protection: reducing financial barriers to access life-saving services for the poor
2. Essential services: ensuring that priority maternal, newborn, infectious disease services, etc. are included in the national essential benefits packages
3. Population coverage: attaining coverage for people in the bottom wealth quintile and for other marginalized people
4. Responsiveness: improving the satisfaction of poor and marginalized people with provision of essential services.

Key Question 1

How will PMI support capacity building for ZAMEP?

Supporting Data

PMI will support capacity building initiatives for ZAMEP staff to increase both technical and managerial skills through short term training and participation in international meetings (including ASTMH and RBM Technical working groups.)

Conclusion

PMI funds will continue supporting the capacity building of ZAMEP staff to effectively implement malaria elimination interventions in Zanzibar.

Key Question 2

Are there any other considerations 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

PMI has allocated funding to support health systems strengthening initiatives supported by USAID. This will include support for overall strengthening of the HMIS systems/unit as ZAMEP is moving towards harmonization and integration of malaria data sources within HMIS in Zanzibar. More details can be found in SME section. In addition, PMI will support health system strengthening initiatives which will focus on capacity building of local government authorities to implement and oversee malaria intervention in Zanzibar.

Conclusion

Integration of health information systems is crucial for planning and targeting of malaria elimination strategies. PMI will co-fund with other USAID programs to ensure high quality of data are generated and visualized for decision making.

ANNEX B: COUNTRY PROGRAM INVENTORY - ZANZIBAR INVENTORY CAN BE MADE PUBLIC

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

Key:

Example score

Figure B1. Category: Vector Control

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

Activity	Metrics/ Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
ITNs	Consistent distribution channels, in accordance with national strategy	Infrequent campaigns with no continuous distribution	Regular (e.g., every 3 years) campaigns, no continuous distribution	Regular campaigns, inconsistent continuous distribution	Regular campaigns, plus at least 1 well- managed continuous distribution channel	Regular, well- executed campaigns and well-managed continuous distribution channels
	Regular supervision of routine ITN distribution (e.g. HFs)	No HFs regularly supervised in ITN distribution	0-25% of HFs regularly supervised in ITN distribution	25-50% of HFs regularly supervised in ITN distribution	50-75% of HFs regularly supervised in ITN distribution	75-100% of HFs regularly supervised in ITN distribution
	ITN distribution reporting capabilities	Quantities of ITNs distributed not reported at all into LMIS (or other system)	Some quantities of ITNs distributed reported routinely	Some quantities of ITNs distributed reported routinely but cannot be disaggregated by channel	Quantities of ITNs distributed reported routinely and disaggregated by channel	All ITNs distributed captured routinely, disaggregated, and reported electronically
	Capacity to use data to appropriately target and rotate new types of nets	N/A	No capacity	Limited capacity	Some capacity	Good capacity
IRS	Host country government's IRS implementation capacity	N/A, no host country government implemented spray campaign	Host country government has very limited capacity to implement minor aspects of spray campaign	Host country government has capacity to implement some aspects of spray campaign	Host country government has capacity to implement most aspects of spray campaign	Host country government implements independent spray campaign
	Institutionalization of funding	N/A, no IRS conducted in country	No host country government funding, only supported by external sources (e.g. PMI, GF, mining companies)	Limited host country government funding in addition to external sources	>50% funded by host country government in addition to external sources	Fully funded by host country government, no external sources
	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 (Not currently in Zanzibar malaria strategy - see Comments for details)	Coverage of CHWs trained in and providing CM (geographic or numerical target)	No CHWs conducting CM (N/A)	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 (N/A)	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 (N/A)	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 county government funding (for CMSOs)	>50% funded by host country government	Fully funded by host country government
Facility based CM	Access to HF-based care (within 5 km of a health facility or as per national definition)	0-20% of population has access to HF	20-40% of population has access to HF	40-60% of population has access to HF	60-80% of population has access to HF	>80% of population has access to HF
	Regular* supervision of public HFs in CM	No HFs regularly supervised in CM	0-25% of HFs regularly supervised in CM	25-50% of HFs regularly supervised in CM	50-75% of HFs regularly supervised in CM	75-100% of HFs regularly supervised in CM
	Drug resistance monitoring	No TES performed in last 3 years	TES performed in last 3 years but results not available	Recent TES results available (within last 3 years) but no training in molecular testing	Recent TES results available (within last 3 years) and in-country staff trained in molecular testing	Recent TES results available (within last 3 years) and in-country capability for molecular testing

Figure B3. Category: Drug-Based Prevention

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

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 Insufficient skills for selecting and implementing appropriate	Annual forecasting and supply planning done but is based on poor, inadequate, or inaccessible data Locally based skills in	Annual forecasts incorporate service and/or/consumption data Supply plans updated semi-annually and incorporate review/revisions of available funding	Semi-annual forecasts incorporate service and/or/consumption data, account for seasonality Supply plans updated quarterly and incorporate review/revisions of	Near real-time demand/consumption, enhanced with additional programmatic contributions, drives monthly forecasting Forecasting and supply planning-

Activity	Metrics/Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
		forecasting methodologies. Procurement plans are not developed from forecasts No coordination among procurers	quantification are developing Review of procurement plans is irregular. Coordination among procurers is limited	Coordinated procurement planning done at the national level (and regional level, if the health system is decentralized) and among procurers	available funding Coordinated procurement planning done at the national level (and regional level, if the health system is decentralized). Identified commodity gaps effectively communicated to stakeholders for purposes of resource mobilization	specific software used and outputs visible across networks. Supply plans updated monthly and incorporate review/revisions of available funding Coordinated procurement planning done at the national level (and regional level, if the health system is decentralized). Identified commodity gaps effectively communicated to stakeholders for purposes of resource mobilization. Outputs shared through global platforms
	Warehousing/ Storage	Quality of infrastructure and operations at all stock holding levels (Central, Sub-central/facility) compromises ability to ensure commodities are adequately	Quality of infrastructure and operations in at least one stock holding level (Central, Sub-central/facility) ensures that commodities are adequately protected from	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	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	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.

Activity	Metrics/Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
		protected from damage, deterioration and loss. Unable to locate stock by batch in central/mid-level stores/warehouses.	damage, deterioration and loss. Paper-based inventory management system. No SOPs.	information is not routinely shared across warehouses. Some maintenance occurring Limited ability to scale storage capacity	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)	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 stock holding levels	Routine resupply between all stock holding levels according to a schedule Allocated resources for transportation from higher to lower stock holding levels provided on an irregular basis and resupply often achieved through unplanned means	Routine resupply between all stock holding levels according to a schedule shared with all levels and informed by accurate demand signals Allocated resources for transportation provided on a regular basis and augmented with 3PLs	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

Activity	Metrics/Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
			provided on ad hoc basis	Resupply performance monitored post-activity	Resupply performance monitored real-time	are in place Allocated resources for transportation available internally or outsourced with 3PLs. Resupply transaction data is digitized for all stock transfers Near real-time visibility into upstream and downstream activities Resupply operations adhere to GDP and or meet in-country compliance standards for maintaining quality during distribution
	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	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	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	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	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

Activity	Metrics/Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
		No facility level records or not maintained. Low reporting rates. No visibility into CHW supplies. No visibility by central level on facilities and none by facility level on central level.	consumption, low reporting rates, mostly paper-based	system at the district level and above. A documented mechanism is in place for maintaining data quality throughout the data supply chain.	master product list and master facility list Interoperability with other information systems (e.g., warehouse management, medical records, laboratory management, enterprise resource planning systems, and health information management systems)	review interoperability activities and modify them to adapt to changing conditions. Compliance with standards for data exchange, messaging, and security is regularly reviewed. The regulatory framework is reviewed and updated to reflect best practices for data exchange, messaging, and systems security.
	Regulatory, Policy and Governance	Legal basis to enable a medicines (and related health commodities - e.g., devices, vaccines, etc.) regulatory agency to function is absent or inappropriate Formal organizational structure	Medicines framework exists and is sufficient to support basic regulatory functions including clinical dossier review (licensing) and marketing authorization with registration. Documented domestic financial	All SDP levels have in place policies that address STG, quality assurance and HR. Management policies for the supply chain system are in place at the MOH level. Policy and strategic leadership is not always translated into robust implementation plans, and supportive supervision, capacity building and	Strong policy and strategic leadership by government, with firm grasp of budgets and financial sustainability Robust implementation plans, and supportive supervision, capacity building and guidance to managers within the system. Regulatory and policy bodies in alignment to support quality product	The MOH leads strategic functions such as, policy formulation, quality assurance and overseeing the funds required for policy implementation. Ability to ensure product quality, automated drug registration process, clear/transparent importation process,

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

Figure B5. Category: Strategic Information

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

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

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

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

Figure B6. Category: Support Systems

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

Activity	Metrics/Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
	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
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	Office space adequate for current staff but no growth possible; office	Office space adequate for current staff and some technical areas	Office space is fully adequate for current staff and technical

Activity	Metrics/Criteria	Relative Continuum, for discussion purposes				
		1	2	3	4	5
			staff; Transport available at intervals but limited for program needs	not well positioned for access to MOH leadership. Transport available but not covering all needs and not well managed/maintained	(e.g., lab) but not fully adequate for growth and all technical services. Transport covers most needs.	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
	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)