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The Gambia

Malaria Operational Plan

FY 2023 and FY 2024

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This combined fiscal (FY) 2023 and FY 2024 Malaria Operational Plan has been approved by the U.S. Global Malaria Coordinator and reflects collaborative discussions with national malaria control programs and other partners. Funding available to support outlined plans relies on the final FY 2024 appropriation from the U.S. Congress. Any updates will be reflected in revised postings.

CONTENTS

ABBREVIATIONS

ACT	Artemisinin-based combination therapy
AI	Active ingredient
AL	Artemether-lumefantrine
ANC	Antenatal care
ASMBCC	Advocacy and social mobilization behavior change communication
CDC	U.S. Centers for Disease Control and Prevention
CHN	Community health nurse
CMS	Central Medical Stores
DHA-PPQ	Dihydroartemisinin-piperaquine
e-LMIS	Electronic logistics management system
EQA	External quality assessment
FY	Fiscal year
Gavi	Gavi, the Vaccine Alliance
Global Fund	Global Fund to Fight AIDS, Tuberculosis and Malaria
HMIS	Health management information system
iCCM	Integrated community case management
IPTp	Intermittent preventive treatment for pregnant women
IPTp3+	Three or more doses of IPTp
IRS	Indoor residual spraying
ITN	Insecticide-treated net
LMIS	Logistics management information system
MIP	Malaria in pregnancy
MIS	Malaria Indicator Survey
MOH	Ministry of Health
MOP	Malaria Operational Plan
MRC	Medical Research Council
NMCP	National Malaria Control Program
NMSP	National Malaria Strategic Plan 2021–2025
OR	Operational research
PBO	Piperonyl butoxide
PE	Program evaluation
PMI	U.S. President’s Malaria Initiative
RAS	Rectal artesunate
RDT	Rapid diagnostic test
RMNCAH	Reproductive, Maternal, Neonatal, Child and Adolescent Health Program
RMS	Regional medical stores
RVCO	Regional vector control officer
SBC	Social and behavior change
SM&E	Surveillance, monitoring, and evaluation
SMC	Seasonal malaria chemoprevention

SP	Sulfadoxine-pyrimethamine
SPAQ	Sulphadoxine-pyrimethamine plus amodiaquine
TES	Therapeutic efficacy study
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VDC	Village development committee
VHW	Village health worker
WASH	Water, sanitation, and hygiene
WHO	World Health Organization

EXECUTIVE SUMMARY

To review specific country context for The Gambia, please refer to the country malaria profile located on PMI's country team landing page at PMI.gov, which provides an overview of the country malaria situation, key indicators, the National Malaria Control Program (NMCP) strategic plan, and the partner landscape.

U.S. President's Malaria Initiative

Launched in 2005, the U.S. President's Malaria Initiative (PMI) supports implementation of malaria prevention and treatment measures as well as cross-cutting interventions. PMI's 2021–2026 strategy, *End Malaria Faster*, envisions a world free of malaria within our generation with the goal of preventing malaria cases, reducing malaria deaths and illness, and eliminating malaria in PMI partner countries. PMI currently supports 27 countries in Sub-Saharan Africa and 3 programs across the Greater Mekong Subregion (GMS) in Southeast Asia to control and eliminate malaria. The Gambia began implementation as a PMI partner country in fiscal year (FY) 2023.

Rationale for PMI's Approach in The Gambia

In The Gambia, malaria is still a major public health problem. Despite huge advances in reducing cases and deaths from the disease, the entire population of 2,619,693 remains at risk of infection.[1] The Gambia has perennial transmission, with most cases (approximately 90 percent) occurring in the later stages of the rainy season (September–December). Since 2004, The Gambia has made significant progress to reduce malaria mortality and morbidity. The annual malaria incidence has steadily declined by 43 percent across all seven regions, from 149 per 1,000 population in 2011; to 85 per 1,000 in 2014; and finally to 23 per 1,000 population in 2017. From 2014 to 2017, parasite prevalence declined in children under the age of five from 0.2 to 0.1 percent. The country has experienced an increase in malaria cases in recent years: 31 per 1,000 population in 2020; 30 per 1,000 population in 2021; and 44 per 1,000 population in 2022. However, NMCP and its partners completed a stratification exercise in preparation for the current National Malaria Strategic Plan (NMSP) 2021–2025 and intends to transition from control to elimination of malaria in designated areas while continuing a push for quality, comprehensive coverage of programs in areas with higher transmission.

PMI's investments in The Gambia will support identified program gaps that are not covered by current donors or The Gambian government, including a full package of case-based detection and response efforts beginning in one or more elimination pilot area; enhancement of cross-border data sharing of routine, campaign, and special event data in accordance with The Gambia and Senegal memorandum of understanding; facilitation of cross-border meetings and improved communication; entomological monitoring for insecticide resistance and elimination case/foci investigation follow-up; the development of a plan for *Anopheles stephensi* monitoring; an updated social and behavior change (SBC) strategy; an introductory pilot at the

[1] Source: The Gambia Bureau of Statistics, 2013 Census, projected to 2023.

community level for intermittent preventive treatment for pregnant women (IPTp); insecticide-treated nets (ITNs) for continuous distribution; and support for associated technical working group meetings at the national and regional level.

Overview of Planned Interventions

Specifically, the proposed FY 2023 and FY 2024 PMI funding for The Gambia is $4 million per year. With these funds PMI will invest in the following intervention areas.

1. Vector Monitoring and Control

PMI will enable regional vector control officers and their teams to conduct entomological monitoring and will procure new types of ITNs for distribution through continuous channels and as part of case-based surveillance and response activities in stratum 1 areas targeted for elimination. Funding will be used to continue insecticide-resistance monitoring at two sites and initiate activities at 10 additional nationwide sites that are currently inactive. Vector bionomics monitoring at these sites and/or as part of case-based surveillance will also be initiated, as is appropriate and as resources allow. In addition, PMI will support the development and implementation of an *Anopheles stephensi* surveillance and response plan.

2. Malaria in Pregnancy

NMCP supports a comprehensive approach for malaria in pregnancy (MIP) with three recommended components: IPTp, consistent use of ITNs provided at the first antenatal care (ANC) visit, and appropriate malaria case management during pregnancy. NMCP has also identified a need to restart a national technical working group on MIP. With FY 2023 funding, PMI will support NMCP's MIP strategy as part of the broader package of services provided in stratum 1 areas, including ensuring pregnant women have access to ITNs as well as prompt effective case management of malaria. PMI will encourage the reestablishment of the national technical working group on MIP. With FY 2024 funding, PMI will support piloting community-based IPTp in one selected region with trained village health workers (VHWs) to improve the coverage and uptake of IPTp3 among pregnant women and strengthen linkages with ANC services at the facility level.

3. Drug-Based Prevention

NMCP adopted seasonal malaria chemoprevention (SMC) in 2012 and included SMC in the NMSP 2021–2025. Various partners, including the United Nations Children's Fund (UNICEF), ACCESS SMC via Catholic Relief Services, and the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) have supported SMC in past years, with three to four cycles for eligible children. NMCP implements SMC for children under the age of five in 19 out of 22 districts identified in malaria strata 2 and 3. Global Fund supports all current SMC campaigns and commodity needs, and NMCP plans to expand SMC to all eligible geographic areas as well as to older-aged children under the Global Fund grant cycle 7 proposal. Therefore, PMI does not plan to fund SMC activities with FY 2023 or FY 2024 funds.

4. Case Management

NMCP updated malaria case management policies and guidance for 2023 to adhere to World Health Organization (WHO) recommendations and to integrate case management guidelines specifically for elimination areas. During the development of the NMSP 2021–2025, NMCP and partners conducted an exercise that organized the country into three strata—very low, low, and moderate transmission. The areas of the country with very low transmission (stratum 1) will pilot and deploy subnational elimination protocols. Given its experience in other countries, PMI plans to provide funding to NMCP to aid in carrying out comprehensive case-based surveillance and response in one or more subnational elimination areas.

5. Health Supply Chain and Pharmaceutical Management

The NMSP 2021–2025 includes health supply chain and pharmaceutical management as an important cross-cutting area and identifies overarching activities to strengthen inventory management, storage, and distribution. In particular, NMCP notes the need to strengthen supply chain visibility and transportation from the Central Medical Stores (CMS) to village health services and supply chain visibility between CMS and regional medical stores (RMS). The malaria program also calls for improvement in the logistics management information system (LMIS), including capacity strengthening for real-time electronic data visibility of regional and lower-level health facilities. In FY 2023 and FY 2024, PMI will procure limited quantities of malaria commodities (rapid diagnostic tests [RDTs], artemisinin-based combination therapy [ACTs], and ITNs) to support the elimination response package, which includes case-based surveillance and foci investigation and response. PMI will utilize the supply chain system of the Ministry of Health (MOH) to warehouse and distribute PMI commodities and to monitor and report on stock levels. The Global Fund provides support for strengthening the national supply chain management system, both through the malaria system and the resilient and sustainable system for health grants. Therefore, PMI will focus its investments on procuring commodities for implementing case-based surveillance and response activities at the regional level for areas in stratum 1.

6. Malaria Vaccine

PMI is not currently planning to provide funding for malaria vaccine deployment in The Gambia. The country has prepared a draft application to Gavi, The Vaccine Alliance, for the RTS,S vaccine, targeted to protect vulnerable children in the Upper River Region. If the vaccine application is successful and if vaccine commodities are readily available, The Gambia may be adding the vaccine to its toolkit within the 2025–2027 time frame.

7. Social and Behavior Change

The Gambia's malaria SBC component requires foundational support as well as strategic, focused support in malaria implementation areas. PMI plans to fund the updating and revising of the SBC strategic plan and guidance, as well as the revitalization of technical working group coordination meetings, which will benefit the entire program. PMI will support community

communication goals and SBC for health staff and community members in select malaria elimination areas in stratum 1, which will introduce case-based surveillance and response.

8. Surveillance, Monitoring, and Evaluation

PMI funding will be used to support surveillance and data activities in alignment with the NMSP and current elimination goals at the community, regional, and national level. PMI will support improved surveillance data reporting and use; case and foci investigations; and the implementation of case-based, real-time reporting. PMI will work with the MOH and other malaria stakeholders to identify what next steps are needed to create an accessible and useful data platform that will allow Senegal and The Gambia to share and view reciprocal data. PMI will provide funding to support the coordination of public health leaders from both countries to discuss key cross-border issues, collaborate on intervention implementation, and communicate malaria data and planning priorities.

9. Operational Research and Program Evaluation

Identification and operational research (OR) targeting priorities is a goal within The Gambia NMSP 2021–2025. The 2020 Gambia Malaria Program Review Report identified OR priorities such as an assessment of the slide positivity rate for malaria cases at sentinel sites, including sentinel surveillance; a field evaluation of RDTs; and an assessment of health facilities using malaria diagnostic tools. However, according to the 2020 Malaria Program Review, no OR plan has yet been developed. Discussions identifying OR and program evaluation (PE) needs are ongoing. No OR/PE activities are proposed with PMI FY 2023 or 2024 funding.

10. Capacity Strengthening

NMCP values a well-trained and motivated team. The MOH and NMCP have committed to specific capacity-strengthening goals throughout the life of the NMSP. PMI's complementary capacity-strengthening efforts are incorporated in the supported activities as described in each section below, with costs integrated within the appropriate line item in Table 2. Each activity has a recommended package of general and specific skill sets across different levels of the health system and presents a relevant capacity-strengthening opportunity:

- Malaria case-based surveillance and response in elimination area(s) in stratum 1 of The Gambia;
- Cross-border data sharing and use between The Gambia and Senegal;
- Entomological surveillance; and
- SBC planning, coordination, and strategy development.

In addition, PMI will provide funding to the U.S. Peace Corps through a small grants program to engage in malaria control and prevention activities.

11. Staffing and Administration

The PMI program in The Gambia will be led by the United States Agency for International Development (USAID) Mission Director/Sahel Regional Office or their designee and overseen on a day-to-day basis by a locally hired senior malaria technical and program expert who will oversee the technical and administrative aspects of the PMI program. The PMI interagency team, including USAID and U.S. Centers for Disease Control and Prevention (CDC) staff at the USAID Sahel Regional Office and USAID/Washington, and CDC/Atlanta will regularly provide technical, program, and administrative support to the senior malaria technical and program expert.

I. CONTEXT & STRATEGY

1. Introduction

The Gambia began implementation as a PMI partner country in fiscal year (FY) 2023. This combined FY 2023 and FY 2024 Malaria Operational Plan (MOP) presents a detailed implementation plan for The Gambia based on the strategies of PMI and the National Malaria Control Program (NMCP). It was developed in consultation with NMCP and with the participation of national and international partners. The activities that PMI is proposing build on investments made by partners to improve and expand malaria-related services, including the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund). This document provides an overview of the strategies and interventions in The Gambia, describes progress to date, identifies challenges and relevant contextual factors, and provides a description of activities that are planned with FY 2023 and FY 2024 funding. For more detailed information on the country context, please refer to the country malaria profile, which provides an overview of the country's malaria situation, key indicators, the National Malaria Strategic Plan 2021–2025 (NMSP), and the partner landscape.

2. U.S. President's Malaria Initiative (PMI)

PMI is led by the United States Agency for International Development (USAID) and implemented with the U.S. Centers for Disease Control and Prevention. Launched in 2005, PMI supports the implementation of malaria prevention and treatment measures such as insecticide-treated mosquito nets (ITNs), indoor residual spraying, accurate diagnosis and prompt treatment with artemisinin-based combination therapies (ACTs), intermittent preventive treatment for pregnant women (IPTp), and drug-based prevention, as well as cross-cutting interventions such as surveillance, monitoring, and evaluation; social and behavior change (SBC); and capacity strengthening. PMI's 2021–2026 strategy, *End Malaria Faster*, envisions a world free of malaria in our generation, with the goal of preventing malaria cases, reducing malaria deaths and illness, and eliminating malaria in PMI partner countries. PMI currently supports 27 countries in Sub-Saharan Africa and 3 programs in the Greater Mekong Subregion (GMS) in Southeast Asia to control and eliminate malaria. Over the next five years, PMI aims to save lives, reduce health inequities, and improve disease surveillance and global health security.

Under the strategy, and building on progress already made in PMI-supported countries, PMI will work with national malaria control programs and partners to accomplish the following objectives by 2026:

1. Reduce malaria mortality by 33 percent from 2015 levels in high-burden PMI partner countries, achieving a greater than 80 percent reduction from 2000.
2. Reduce malaria morbidity by 40 percent from 2015 levels in PMI partner countries with high and moderate malaria burden.
3. Bring at least 10 PMI partner countries toward national or subnational elimination and assist at least one country in the Greater Mekong Subregion to eliminate malaria.

These objectives will be accomplished by emphasizing five core areas of strategic focus:

1. **Reach the unreached:** Achieve, sustain, and tailor deployment and uptake of high-quality, proven interventions with a focus on hard-to-reach populations.
2. **Strengthen community health systems:** Transform and extend community and frontline health systems to end malaria.
3. **Keep malaria services resilient:** Adapt malaria services to increase resilience against shocks, including COVID-19 and emerging biological threats, conflict, and climate change.
4. **Invest locally:** Partner with countries and communities to lead, implement, and fund malaria programs.
5. **Innovate and lead:** Leverage new tools, optimize existing tools, and shape global priorities to end malaria faster.

3. Rationale for PMI's Approach in The Gambia

3.1. Malaria Overview for The Gambia

Malaria transmission in The Gambia is perennial, with variations that are highly seasonal—over 90 percent of cases occur in the latter part of the rainy season (October–December. Malaria prevalence and incidence rates were declining year by year, but there have been recent reported increases in malaria cases, varying between and within regions. The prevalence of a malaria parasite infection among children under the age of five declined from 4 percent in 2010 to 0.1 percent in 2017, and the number of reported and confirmed malaria cases dropped by 68 percent, from 166,232 in 2014 to 53,136 in 2019. In terms of malaria incidence, the data shows a 43 percent decline across all seven regions. from 149 per 1,000 population in 2011 to 85 in 2014, and finally to 23 per 1,000 in 2017. Since 2018, annual trends in malaria incidence have been unstable but suggest a possible upward trend (Figure 1).

Figure 1. The Gambia Malaria Incidence by Region, 2018–2022

	Malaria Incidence per 1,000 population				
Health Region	**2018**	**2019**	**2020**	**2021**	**2022**
Central River	44	16	24	20	20
Lower River	45	19	27	40	45
North Bank East	8	4	4	7	16
North Bank West	4	2	2	6	14
Upper River	130	84	117	72	52
Western 1	21	14	18	23	46
Western 2	41	21	24	36	59
Total/The Gambia	41	23	31	30	44

Malaria Incidence Per 1,000 Population	
<11	
11–30	
>30	

The Gambian government is committed to the transition from malaria control to malaria elimination. To support this transition, the country conducted an exercise using routine data from 2019 to categorize districts into three strata: very low, low, and moderate transmission, and prepared policy and guidance documents for a more tailored approach to interventions according to stratum. This stratification-based approach serves as the basis of NMSP 2021–2025, which outlines the country's plans to transition from control to elimination of malaria in designated areas (stratum 1) while continuing a push of quality, comprehensive coverage of programs in higher transmission areas (strata 2 and 3).

For more detailed information on malaria indicators, refer to the country malaria profile.

The Gambia has developed a collaborative working relationship with Senegal, its neighbor country that shares borders to the north, east, and south. The two countries have a memorandum of understanding that governs their communication, data sharing, and program interactions. To date, the two countries have successfully implemented two coordinated ITN campaigns along the border as well as a cross-border case-based surveillance and response exercise. Planning is underway for the development of a data sharing platform to facilitate future shared analysis and additional synchronized border activities.

The Gambia has been a recipient of Global Fund grant funds since 2004. Funds from the Global Fund grant and resources from other malaria donors, including the Bill & Melinda Gates Foundation, World Health Organization (WHO), United Nations Children's Fund (UNICEF), and Rotary International, provide broad support for The Gambia across all major malaria implementation areas at all levels of the health system, generally prioritizing locations with higher transmission. However, there are identified gaps in the program that, if filled, would benefit the program and boost implementation, especially during this time of transition to subnational malaria elimination in eligible areas.

Therefore, PMI funds will be used to address identified program gaps that are not covered by current donors or The Gambian government, with a primary focus on developing a full package for case-based detection and response beginning in one or more elimination pilot areas, including strengthening linkages between regional teams, health facilities, and community health workers, and procuring malaria commodities to support case-based detection and response in the pilot area/s. PMI will provide funding to further enhance cross-border data sharing between The Gambia and Senegal, to strengthen national entomological monitoring, to develop an updated national SBC strategy, to pilot community-based IPTp in an area with higher transmission, and procure ITNs for continuous distribution.

3.2. Key Challenges and Contextual Factors

NMCP faces challenges in maintaining their prescribed coverage of program implementation in all key areas outlined in the NMSP: ITNs, IPTp, prompt and accurate diagnosis and treatment of malaria cases, IRS, seasonal malaria chemoprevention (SMC), SM&E, and SBC. These key malaria intervention areas are being implemented, but there are shortfalls in some areas that need additional funding to achieve full coverage, including inadequate resources to transition to new types of ITNs in the context of widespread pyrethroid resistance; geographic expansion of IRS; increased malaria in pregnancy (MIP) uptake and coverage; expansion of SMC to additional age groups and geographic locations; revised SBC strategy and production of more materials, outlets, and outreach opportunities; introduction and scale up case-based surveillance in stratum 1 areas; and continued and expanded cross-border coordinated activities with Senegal.

Enabling factors for malaria interventions include the commitment expressed by The Gambian government and the Ministry of Health (MOH), the leadership and coordination shown by NMCP, active participation by their implementing partners, and the active working relationship between The Gambia and Senegal.

The Gambia recently experienced a change in government (2016, reelected in 2021), which has raised expectations for future progress. However, the country is burdened by major internal challenges that hamper adequate infrastructure and availability of basic household needs, including rising urbanization (58 percent); high population density (274 persons per km^2); a youthful population (median age of 17); migration, especially at the southern border (the highest in the region); and a 2.5 percent population growth rate. These challenges are made even more difficult by a recent increase in poverty (20.3 percent in 2022 up from 18.4 percent in 2021), along with weaker growth in per capita gross domestic product and high prices, which decrease household purchasing power. The government is working to improve the living conditions and health of its citizens, including working toward a malaria-free society, but it is substantially hindered by these obstacles.

3.3. PMI's Approach for The Gambia

The Gambia was announced as a new PMI partner country in April 2023, at the end of a decade of progress toward reducing malaria transmission, but the country experienced a recent increase in malaria cases during 2020–2022. Those three years also represent a time of transition for NMCP, as a stratification exercise and program review has prescribed more rigorous surveillance nationwide and a more tailored approach to malaria implementation. The Gambia has been historically supported by Global Fund grants and contributions from other donors and the local government. Currently, the Global Fund and other partners are primarily and broadly supporting malaria control interventions. However, according to the country's NMSP, additional funds and partner technical support are still needed to sustain the program's gains and advance the country's malaria elimination goals.

PMI will address some of the unmet needs identified with new initiatives in The Gambia, including: (1) providing funding to enhance routine and campaign-related cross-border data-sharing platforms with Senegal; (2) initiating a comprehensive package for case-based surveillance in one or more elimination area; (3) reinitiating entomological surveillance to monitor insecticide resistance as a primary activity, longitudinal (at an appropriate scale and frequency) and/or foci-based vector bionomics monitoring as a secondary activity as funding allows, and development and initiation of an *Anopheles stephensi* surveillance and response plan; (4) launching a community IPTp pilot, facilitating the creation of a new SBC strategy, organizing technical working group coordination meetings, and conducting SBC activities for one or more elimination area. PMI's investments in one or more elimination area will also include critical commodities, such as primaquine, ITNs, and rapid diagnostic tests (RDTs).

II. OPERATIONAL PLAN FOR FY 2023 and FY 2024

1. Vector Monitoring and Control

1.1. PMI Goal and Strategic Approach

NMCP's Integrated Vector Management Plan 2023–2030 aims to achieve 100 percent control and elimination of malaria and other vector-borne diseases using an integrated approach by 2030. Interventions to be implemented include the distribution of ITNs; IRS; larval source management, environmental management; and the provision of water, sanitation, and hygiene (WASH) services—all guided by insecticide-resistance monitoring and management. The five strategic objectives of the plan are to: (1) incorporate and adopt integrated vector management principles as a strategy for the prevention of vector-borne diseases of public health importance in the development policies of the relevant sectors; (2) establish and promote intersectoral/cross-border coordination mechanisms to ensure the active involvement of all stakeholders, including communities; (3) promote effective collaboration among sectors, partners, and communities to engage in integrated vector management strategy implementation at all levels; (4) identify, establish, and build essential physical infrastructure and technical human competencies at all levels and empower communities for effective vector-borne disease prevention; and (5) plan, adopt, and implement an evidence-based decision-making process in the choice and delivery of integrated vector control interventions based on local disease epidemiology and entomology.

NMCP is responsible for the planning, implementation, and oversight of all malaria activities. Control and elimination activities of other vector-borne diseases are under the remit of the Vector Control Unit in the Directorate of Public Health. At the regional level, NMCP activities are coordinated by regional vector control officers (RVCOs). There are three insectaries at Walikunda, Basse, and Fajara, which support all of the entomological monitoring sites. The facilities belong to the Medical Research Council (MRC) and are used in collaboration with NMCP. DHIS2 software is used to capture entomological surveillance data.

The national policy is to maintain one ITN for every two persons, with nationwide mass distribution campaigns conducted every three years, supported by the Global Fund. Continuous distribution of ITNs is achieved via reproductive and child health clinics targeting children under the age of one and antenatal care (ANC) clinics for pregnant women. IRS is currently implemented with funding from the Global Fund in Upper River Region and Central River Region, with the insecticide class rotated every two years. Entomological monitoring is currently limited to two sites within these regions; however, an additional 10 sites have been operational in the past but are currently inactive. Larval source management, environmental management, and WASH services are not currently implemented due to a lack of funding. PMI's investments will support NMCP and RVCOs to conduct routine entomological monitoring, surveillance of *Anopheles stephensi*, and procurement of ITNs for distribution through continuous channels as well as for case-based surveillance and response.

1.2. Plans and Justification for FY 2023 and FY 2024 Funding

The FY 2023 and FY 2024 funding tables contain a full list of vector monitoring and control activities that PMI proposes to support in The Gambia with FY 2023 and FY 2024 funding.

1.2.1. Entomological Monitoring

Entomological monitoring in The Gambia is currently limited to two sites in Central River Region and Upper River Region, where IRS is implemented. An additional 10 sites were previously operational but are currently inactive. At the two active IRS sites, activities are limited to annual insecticide-resistance monitoring, vector bionomics monitoring one month before and one month after IRS, and residual efficacy monitoring conducted at one month after spraying. With FY 2023 and FY 2024 funding, PMI's primary focus for entomological monitoring will be to enable RVCOs to conduct annual insecticide-resistance monitoring at 12 previously identified/established sites to inform vector control decision making and the selection of appropriate ITNs and/or insecticides for IRS. Funding may be used to conduct vector bionomics monitoring at these sites and/or as part of case-based surveillance activities, as resources allow and as appropriate. PMI funds will be used to develop an *Anopheles stephensi* surveillance and response plan and to initiate monitoring activities. Support will focus on strengthening the capacity of the RVCOs to coordinate the implementation of entomological monitoring activities.

Summary of Distribution and Bionomics of Malaria Vectors in The Gambia

Members of the *Anopheles gambiae s.l.* complex, specifically *Anopheles arabiensis*, *An. coluzzii*, *An. gambiae sensu stricto (s.s.)*, and *An. melas*, remain the main vectors of malaria in The Gambia; they are variably distributed throughout the country. *An. arabiensis* is the most abundant vector species, and while it is most prevalent in eastern regions, in recent years, it has been found throughout the country, suggesting possible replacement of other sibling species due to successful control.[2] *An. coluzzii* and *An. gambiae s.s.* are most prevalent in the western region of the country, while *An. melas* is limited to coastal regions where this species breeds in salty water. The prevalence of each vector species varies by season, with *An. arabiensis* and *An. coluzzii* predominating throughout the rainy season, and *An. gambiae s.s.* becoming rarest early in the onset of the dry season.

Anopheles arabiensis primarily rests and bites outdoors, while *An. coluzzii* and *An. melas* typically rest and bite indoors. *An. gambiae s.s.* are found both indoors and outdoors. In recent years, all vectors have demonstrated a marked preference for animal blood, although *An. gambiae s.s.* and *An. coluzzii* are typically known to readily feed on humans.[3] Sporozoite infection rates are low, and infectious mosquitoes are mainly outdoor-resting *An. arabiensis*.

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[2] Opondo, K.O., M. Jawara, S. Cham, et al. 2019. "Status of insecticide resistance in *Anopheles gambiae (s.l.)* of the Gambia." *Parasites and Vectors* 12 (1): 1–8. pmid:30606222.

[3] Hamid-Adiamoh, M., D. Nwakanma, B.S. Assogba, et al. 2021. "Influence of insecticide resistance on the biting and resting preferences of malaria vectors in the Gambia." *PLoS ONE* 16 (6): e0241023.

Status of Insecticide Resistance in The Gambia

Widespread dichlorodiphenyltrichloroethane and pyrethroid resistance mediated by knockdown resistance mutations have been reported in all vector species in The Gambia. These populations continue to be susceptible to carbamates and organophosphates, although acetylcholinesterase 1 mutations have been reported in a few samples in the North Bank Region, suggesting that resistance may be emerging. The susceptibility of vector species to newer active ingredients, including clothianidin and chlorfenapyr, or the effectiveness of piperonyl butoxide (PBO) to restore susceptibility to pyrethroids is unknown.

1.2.2. Insecticide-Treated Nets (ITNs)

With FY 2023 and FY 2024 funds, PMI plans to procure PBO ITNs for distribution via continuous channels and as part of case-based surveillance and response activities in targeted stratum 1 health regions. Dual active ingredient (AI) ITNs (chlorfenapyr-based) will be considered for procurement if updated insecticide-resistance data highly suggests the use of this type of ITN and resources allow.

ITN Distribution in The Gambia

In The Gambia, ITNs are distributed via nationwide mass campaign every three years. The past two campaigns, conducted in 2019 and 2022, were coordinated with Senegal to ensure cross-border synchronization of net types, messaging, and community participation. Continuous channels include ITN distribution to pregnant women at ANC visits; to children under the age of one at reproductive and child health clinics; to institutions such as hospitals, boarding schools, and prisons; and to social welfare facilities for children, the elderly, and physically challenged individuals.

To date, ITN distributions have been limited to standard pyrethroid nets; however, The Gambia is committed to deploying new types of nets, including PBO and dual-AI ITNs. Refer to the ITN gap table in the annex for more details on planned quantities and distribution channels.

1.2.3. Indoor Residual Spraying

PMI will not provide funding for IRS in The Gambia. However, NMCP currently implements IRS in Central River Region and Upper River Region with support from the Global Fund.

1.2.4. Other Vector Control

No other vector control activities are currently being implemented in The Gambia.

2. Malaria in Pregnancy

2.1. PMI Goal and Strategic Approach

NMCP's objective for MIP and SMC is that "at least 90 percent of the population at risk are protected with effective malaria preventive therapies." NMCP supports a comprehensive approach for MIP, including IPTp with sulfadoxine-pyrimethamine (SP), use of ITNs provided at the first ANC visit, and appropriate malaria case management during pregnancy. The NMSP calls for intensified SBC activities targeting households to increase early ANC registration to allow for the early initiation of IPTp and promoting at least three or more doses of SP for IPTp as well as ITN use during pregnancy. NMCP coordinates MIP interventions with the Reproductive, Maternal, Neonatal, Child and Adolescent Health Program (RMNCAH), including updating policies and guidelines. Although a national technical working group for MIP has been identified to advise the MOH on policy and strategic direction, regular meetings have not been established.

IPTp with SP is given to every pregnant woman as directly observed treatment at ANC visits in all public and private nonprofit health facilities. According to the malaria treatment guidelines, the first dose of IPTp is administered at 16 weeks or later, and subsequent doses are given at monthly intervals with up to a total of four doses of IPTp during pregnancy. NMCP updated the malaria treatment guidelines in March 2023 to reflect the new WHO recommendation of using artemether-lumefantrine (AL) to treat uncomplicated malaria during pregnancy, including in the first trimester. The Gambia uses AL as first-line treatment and dihydroartemisinin-piperaquine (DHA-PPQ) when AL is not available. Pregnant women with severe malaria are referred to a major health center or hospital and treated with artesunate. The national guidelines on maternal and neonatal care have been updated to reflect the WHO recommendation of making eight ANC contacts during pregnancy.

According to the most recent nationwide household survey (Demographic and Health Survey 2019–2020), most women in The Gambia between the ages of 15 and 49 (98 percent) receive ANC services from a skilled provider (doctor, nurse, or midwife), and most commonly from a nurse or midwife (86 percent). Four in 10 (43 percent) women had their first ANC visit in the first trimester, as recommended. Nearly 8 in 10 (79 percent) women attended four or more ANC visits, but only 4 percent had eight or more ANC visits. Most pregnant women (98 percent) took at least one dose of IPTp, 80 percent took two or more doses, and only 52 percent took three or more doses (IPTp3+). IPTp3+ is higher in urban areas (54 percent) than rural areas (49 percent).

According to a 2020 malaria midterm review, 71 and 86 percent of staff interviewed were trained on MIP in 2018 and 2019, respectively. MIP guidelines were said to be available at 57 percent of health facilities, while the remaining 43 percent reported not having guidelines. Key areas that need strengthening include uptake of IPTp3 and additional doses and monitoring of MIP activities in private, for-profit health facilities.

2.2. Plans and Justification for FY 2023 and FY 2024 Funding

The FY 2023 and FY 2024 funding tables contain a full list of MIP activities that PMI proposes to support in the Gambia with FY 2023 and FY 2024 funding.

With FY 2023 funding, PMI will support NMCP's MIP strategy as part of the broader elimination package of services provided in stratum 1 areas targeted for case-based detection and response, including ensuring pregnant women have access to ITNs and the prompt effective case management of malaria. PMI will encourage the reestablishment of the national technical working group on MIP with representatives of NMCP and RMNCAH serving as co-chairs.

With FY 2024 funding, PMI will pilot community-based IPTp in one region with trained village health workers (VHWs) to improve the coverage and uptake of IPTp3 among pregnant women and strengthen linkages with ANC services at the facility level. As part of the pilot development, PMI funds will also be used to assist NMCP with a technical review of current national MIP policies and practices and ensuring alignment with global guidelines.

SP commodities for IPTp are procured under the Global Fund grant with additional contributions anticipated from MOH. SP resistance markers will be tested from samples collected as part of ongoing therapeutic efficacy studies (TES) (see the case management section).

Please refer to the SP gap table in the annex for more detail on planned quantities and distribution channels.

3. Drug-Based Prevention

3.1. Seasonal Malaria Chemoprevention

3.1.1. PMI Goal and Strategic Approach

NMCP's SMC strategy is supported under the third objective of NMSP 2021–2025: "at least 90 percent of the population at risk are protected with effective malaria preventive therapies." In 2012, SMC was adopted in The Gambia as a malaria prevention strategy and included as part of the national malaria policy in 2013. Implementation started in 2014 as a pilot project covering three cycles in Central River Region and two cycles in Upper River Region, with funding from UNICEF. In 2015, ACCESS SMC through Catholic Relief Services provided funding for two years, covering four cycles in each region. From 2017 to 2019, the Global Fund provided funding to support SMC activities in these same regions, with four cycles in each region. With additional funding from the Global Fund in 2018, SMC was scaled up to Western Health Region Two, covering three cycles. NMCP plans to extend the age range of eligible children from 3 to 120 months depending on the availability of adequate data on disease burden in this age cohort. Currently, NMCP and Catholic Relief Services are implementing a study to examine SMC delivery for children between the ages of 5 and 10, conducted in

partnership with Malaria Medicines Venture, with funding from the Korean International Cooperation Agency.

NMCP implements SMC for children under the age of five in 19 of 22 districts identified in the malaria strata 2 and 3 areas. SMC is implemented in campaign settings using the door-to-door approach through VHWs and community volunteers. A complete course of sulphadoxine-pyrimethamine plus amodiaquine (SPAQ) is administered monthly for a maximum of four months during the peak transmission period (August–November) to eligible children between 3 and 59 months of age. Mobile devices are used for data collection to enhance quality and real-time decision making during the campaign, including an SMC DHIS2 data tracker module developed for the 2022 campaign. The Global Fund grant provides funding for all SPAQ commodities and for required planning, training, delivery, and community mobilization for the campaigns. NMCP has developed SMC guidelines, training manuals, job aids, reporting tools, and SBC materials. Adverse drug reactions are monitored and reported as part of pharmacovigilance for the SMC drugs. The estimated prevalence of SP resistance markers will be determined from samples collected as part of ongoing TES (see the case management section).

Table 1. 2021 Seasonal Malaria Chemoprevention Campaign Coverage Among Targeted Children

The Gambia (2021 SMC Season)	Number of Children Targeted	Number of Children Reached	Coverage/Percent
Cycle 1	140,625	76,157	54%
Cycle 2	140,625	79,210	56%
Cycle 3	140,625	74,949	53%
Cycle 4	140,625	73,864	53%

Source: SMC Alliance website: https://www.smc-alliance.org/gambia.

3.1.2. Plans and Justification for FY 2023 and FY 2024 Funding

The FY 2023 and FY 2024 funding tables contain a full list of SMC activities that PMI proposes to support in The Gambia with FY 2023 and FY 2024 funding.

The Global Fund supports all current SMC campaigns and commodity needs, and NMCP plans to expand SMC to all eligible geographic areas as well as to older-aged children with support from the Global Fund. Therefore, PMI does not plan to fund any SMC activities with FY 2023 or FY 2024 funds.

Refer to the SPAQ gap table in the annex for more detail on the planned quantities and distribution channels.

4. Case Management

4.1. PMI Goal and Strategic Approach

National Malaria Strategic Plan and Policy Guidance on Malaria Case Management

In the NMSP 2021–2025, quality case management is a clear NMCP priority, included in the first objective, with several facets of the guiding principles of the plan directly linked to case management implementation. Guiding principles include universal access of at-risk populations, equitable access, client satisfaction, and a focus on socioeconomic inclusion and equity. The objective specially calls for all malaria cases at all levels to, by 2025, receive prompt diagnosis and effective treatment according to the national guidelines.

The NMSP emphasizes the necessity of early recognition of the signs and symptoms of malaria and prompt effective diagnosis and treatment to reduce morbidity and mortality associated with the disease. Awareness of malaria signs and symptoms is considered universally important and detection at home, in the community, and at all health facility levels should be addressed through immediate care seeking, diagnosis, timely referral, and follow up as needed. According to the national policy since 2010, malaria should be confirmed through parasite-based tests for all suspected cases before treatment for all ages and at all settings. NMCP has prioritized support to essential elements of the health system for prompt diagnosis and effective treatment of malaria, aligned with national and global policy guidelines, including diagnosis, treatment, integrated community case management (iCCM), monitoring of malaria medicine efficacy, and quality assurance through supervision and monitoring and quality control of laboratory diagnosis.

Since the Alma-Ata Declaration in 1978, The Gambia has adopted and remained committed to focusing on primary health care. Having experienced mixed success over the past few decades due to external and internal challenges, the country developed a 2018–2022 roadmap for revitalizing and scaling up primary health care. In March 2023, the government recommitted itself to primary health care in its updated national guidelines for malaria management. These guidelines contain updated diagnosis and treatment guidance for uncomplicated and severe malaria at all levels of the health sector, guidance on radical treatment with primaquine in elimination areas, treatment of anemia, differential diagnosis of fever, and actions to take if malaria treatments fail.

Diagnosis of Malaria

NMCP calls for all suspected malaria cases presenting in all settings to be tested prior to treatment. The two methods routinely used for parasitological diagnosis of malaria are microscopy and RDT. If microscopy is not immediately available or feasible, the health care provider should use a malaria RDT.

Uncomplicated Malaria

In 2005, the first-line drug for treatment of uncomplicated malaria was changed to an ACT. By February 2008, ACTs were available at all public health facilities in the country. For patients with uncomplicated malaria, the recommended first-line treatment is fixed-dose AL (artemether 20 mg + lumefantrine 120 mg) for all patients. The recommended second-line ACT for patients with uncomplicated malaria is fixed-dose DHA-PPQ (dihydroartemisinin 40 mg + piperaquine 320 mg).

If the patient is treated in a stratum 1 (very low transmission) area of the country, the NMSP policy is to give low-dose primaquine with the last dose of AL or DHA-PPQ to clear parasites and gametocytes and break malaria transmission. A single dose of primaquine 7.5 mg is given according to weight (0.25 mg/kg) except when primaquine is contraindicated. Primaquine should not be given to pregnant women, infants less than 6 months of age, or women breastfeeding breastfeeding/lactating infants under six months of age. Glucose-6-phosphate dehydrogenase (G6PD) testing is not required before giving the single low-dose primaquine in The Gambia, consistent with WHO recommendations.

Severe Malaria

Severe malaria cases should be treated as a medical emergency and managed only at a major health center or hospital. Life saving therapy for malaria in major health centers and hospitals currently includes artesunate injection or quinine injection. Where these are not available, health workers should give artemether injection as an alternative. If a severe malaria patient presents to a community health nurse (CHN) or VHW, or in a community clinic or minor health center, the current practice is to confirm diagnosis and offer supportive care (for fever) while expeditiously prioritizing the referral of the patient to a higher-level facility.

Although treatment with rectal artesunate (RAS) is included in the national treatment guidelines with a dosing table, NMCP has neither implemented the treatment practice nor procured related commodities yet due to oscillation in the Global Fund RAS policy. NMCP also has concerns about allowing time and planning for an adequate transition for the policy change, specifically time to fully train CHNs and VHWs to adopt the practice in a quality manner. NMCP would like to ensure VHWs have sufficient supervision by CHNs in deploying RAS and have the needed capacity to store the commodity. NMCP does plan to begin rolling out RAS for severe malaria during the life of the current NMSP at both major and minor health facilities. The program will revisit the use of RAS by CHNs and VHWs in the future.

Malaria in Pregnancy

Refer to the MIP subsection in section II.

Malaria in Neonates

A newborn infant with malaria should be treated as severe malaria. Neonates (zero to one month of age) with malaria should be given artesunate injection (3 mg/kg) at 0, 12, and 24 hours, then once daily until recovery from the acute stage. If artesunate injection is not available, treat with an initial dose of artemether injection (3.2 mg/kg), followed by artemether injection (1.6 mg/kg) daily until oral medication can be tolerated. If both artesunate and artemether injections are not available, treat with an initial dose of quinine injection (20 mg/kg), then 10 mg/kg every 12 hours until the patient can tolerate oral antimalarial medication.

Malaria in iCCM

In the 2020–2024 iCCM strategy, the Director of Health Services in The Gambia states that bringing health services closer to the community is one of the key strategies of the government to reduce inequalities to health services. The strategy effort was chaired by the RMNCAH unit with the Primary Health Care Unit being responsible for overall coordination of the iCCM strategy. Since the iCCM strategy is integrated to address malaria, acute respiratory infection, diarrheal disease, and nutrition, the Primary Health Care Unit works with other departments that focus on these areas, including NMCP. All community health workers, including VHWs and traditional birth attendants (now called community birth companions), will be trained to provide services in health promotion, disease prevention, basic diagnosis, treatment, and referral for diseases such as malaria, pneumonia, and diarrhea. In addition to the VHWs and community birth companions, revitalization of existing village development committees at the community level will take place. Village development committees are a committee of local leaders and health champions that work to support health interests within the community. They are tasked to work closely with and support VHWs. Key actions necessary for the successful implementation of iCCM that are currently ongoing include:

- Build consensus on integrated community health to unite stakeholders from multiple sectors around a unified plan;
- Identify gaps in support for community health that need support, including human resources for health, materials, commodities, and infrastructure;
- Establish standards to ensure consistency and quality of all aspects of community health, including processes, coordination, communication, and implementation;
- Develop an integrated implementation plan to translate ideas into action that will lead to improved community health outcomes; and
- Build partnerships for effective implementation to foster high-quality services, improve performance, continuously leverage resources, and prevent duplication.

iCCM targets children under the age of five. The initiative has its own specific objectives to reach by 2024 that largely complement those of the NMSP:

1. By 2024, increase to 95 percent the proportion of children under the age of five receiving appropriate treatment for malaria, pneumonia, diarrhea, and malnutrition;
2. By 2024, increase care seeking for malaria, pneumonia, and diarrhea from baseline of 57, 41, and 31 percent, respectively to 80, 75, and 65 percent, respectively.[4]
3. By 2024, increase to 95 percent the proportion of trained VHWs to identify and treat children with common childhood illnesses and appropriately refer very sick ones to the next level;
4. Strengthen iCCM supervision, monitoring, and evaluation at all levels to improve performance;
5. By 2024, provide essential medicines and equipment to 95 percent of VHWs to facilitate the implementation of an iCCM package of services;
6. By 2024, strengthen primary health care structures to enhance community participation and ownership of the iCCM strategy; and
7. By 2025, strengthen primary health care program management capacity at all levels for optimal implementation of the iCCM strategy.

A VHW in The Gambia serves a village with a minimum of 400 people, providing maternal services, child health services, health education and promotion, and treatment of common illnesses—including malaria. VHWs are unpaid volunteers who receive no salary but do receive a stipend of $10 per month disbursed quarterly; VHWs may also receive incentives or reimbursement for travel when they participate in seasonal or special activities, such as SMC campaigns, EPI campaigns, and ITN distribution campaigns. NMCP estimates that there are about 940 VHWs operating in the country and 227 community health nurses (CHNs) supporting them. Currently, 49.9 percent of villages in The Gambia are primary health care villages served by VHWs and community birth companions. As of December 2022, 754 out of 940 VHWs were trained, including in testing and treating malaria. The remaining 222 VHWs (about 20 percent) still need to be trained, which MOH and its partners are working to remedy. The geographic catchment areas of CHNs, referred to as *circuits*, have been demarcated and defined to 119 across the country (Table 2). Each circuit is staffed by roving CHNs conducting outreach with VHWs under their supervision.

[4] Multiple Indicator Cluster Survey (MICS) 2018.

Table 2. Number and Percentage of Primary Health Care Villages by Health Region in The Gambia, 2021

Region	CHN Circuits	Number of Primary Health Care Villages	Number of Non-Primary Health Care Villages	Total Villages	Percent
WR1	8	29	34	63	46.0
WR2	14	116	205	321	36.1
LRR	15	102	45	147	69.4
NBWR	16	116	36	152	76.3
NBER	14	127	35	162	78.4
Central River Region	34	307	369	676	45.4
Upper River Region	18	145	223	368	39.4
National	119	942	947	1,889	49.9

Source: MOH Primary Health Care Unit 2021.

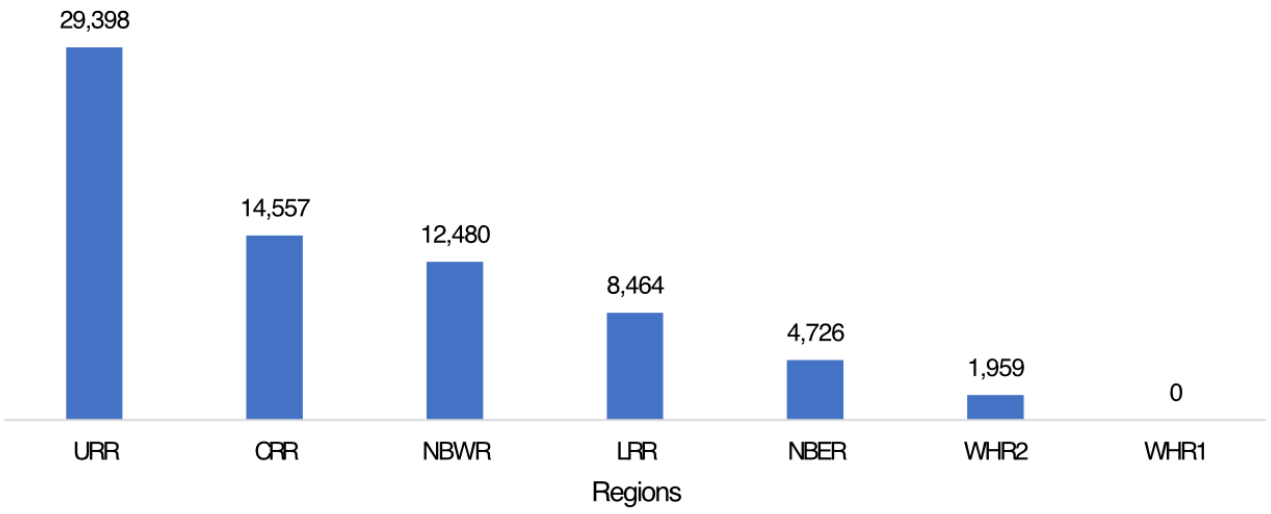
VHWs receive a 14-day training by a trained facilitator; a participant's training manual; and VHW forms, including a sick-child recording form and community referral form).

The VHWs' role includes:

- Screening, testing, and treating children under the age of five and counseling mothers and caregivers;
- Referring children to health facilities;
- Following up on the status of children who have received treatment;
- Conducting weekly home visits for mothers/caregivers and newborns;
- Keeping records of patients seen and reporting to CHNs;
- Reporting adverse reactions to medicines; and
- Working with community health workers to conduct health promotion and educational activities in communities.

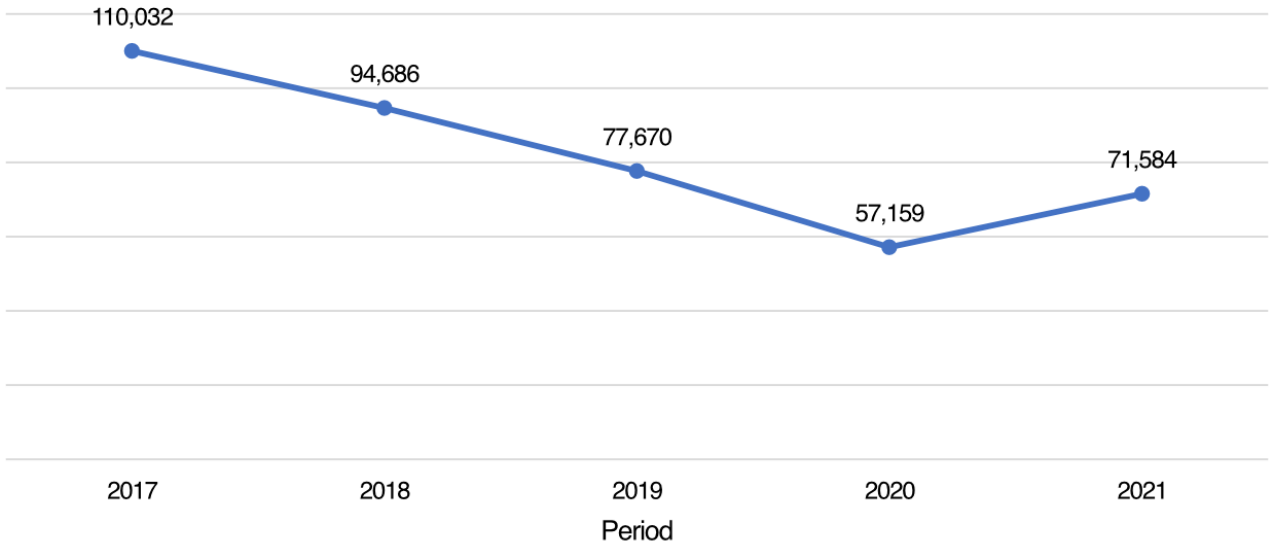
An indication of VHW service provision coverage is illustrated in Figures 2 and 3.

Figure 2. Total Patients Seen at Community Level by Village Health Workers in 2021 by Region, The Gambia



Source: Ministry of Health. 2021. *Final Service Statistics Report*.

Figure 3. Trend of Total Patients Seen at Community Level by Village Health Workers in The Gambia, 2017–2021

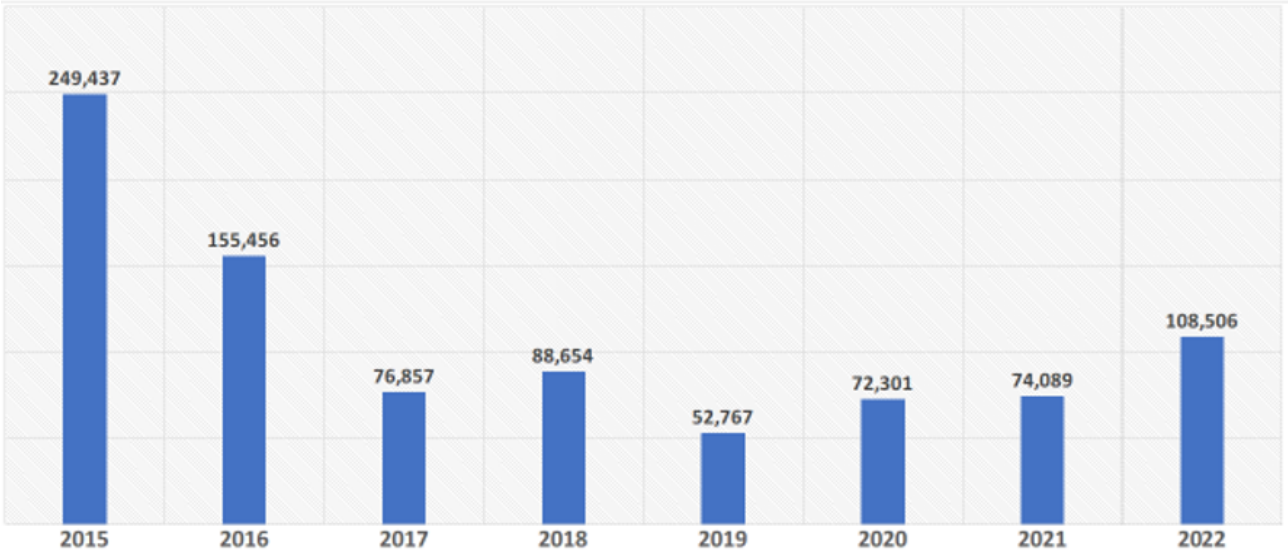


Source: Ministry of Health. 2021. *Final Service Statistics Report*.

Malaria Case Management Progress

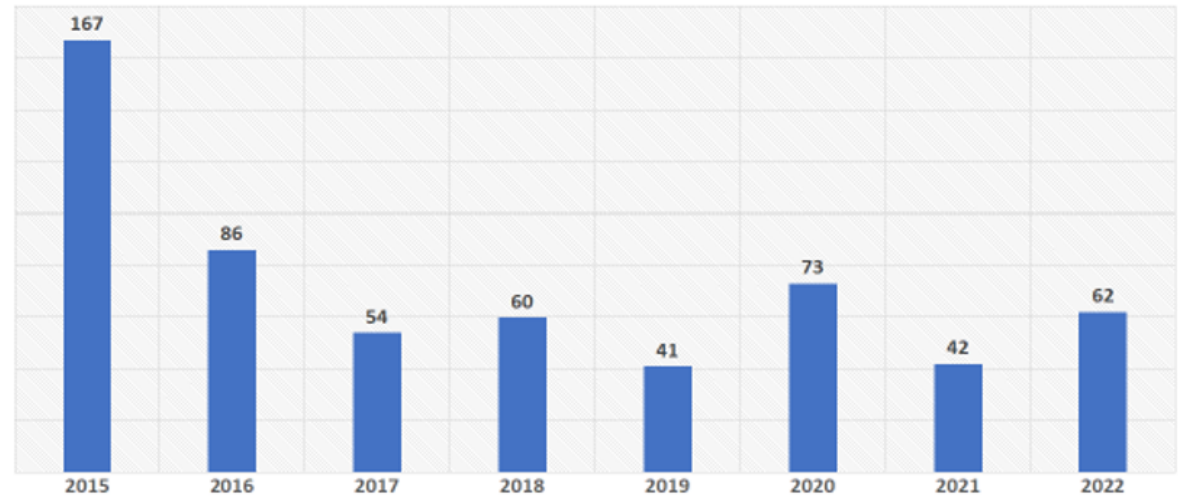
In addition to updating malaria case management strategies, policies, and guidance at all levels from the national to the community level, since 2004, The Gambia has made significant progress in reducing malaria mortality and morbidity. The Figures 4 and 5 show the trend of malaria cases and deaths reported between 2015 and 2022 throughout the entire country.

Figure 4. Confirmed Malaria Cases in The Gambia, 2015–2022



Source: The Gambia 2015–2022 DHIS2.

Figure 5. Malaria-Related Deaths in The Gambia, 2015–2022



Source: The Gambia 2015–2022 DHIS2.

Case Management in Elimination Areas

With the malaria stratification completed in 2019, the country is moving forward with a plan to add case-based surveillance and response in stratum 1 (very low) areas, as outlined in the 2021–2025 NMSP, and with specific guidance on the 1-3-7 approach for case-based detection and response. NMCP defines the approach as: diagnostically confirm cases within one day, investigate specific cases within three days, and target control measures to prevent further transmission within seven days. Quality management of malaria cases remains integral to all malaria strata across the entire country. However, in stratum 1, the protocol will change to primarily reactive case detection (diagnosis and treatment), immediate reporting, followed by case investigation and response within the vicinity of the case. The treatment protocol in stratum 1 will conclude with one low dose of primaquine for indicated populations. A description of the expectations for malaria case management is included in the Figure 6 for each risk stratum.

Figure 6. Case Management According to Operational Malaria Risk Strata in The Gambia

Strata	Description
1	Improved malaria case management in very low malaria risk areas should target 100 percent of cases detected, either passively or actively, and appropriate treatment to avoid resurgence and interrupt residual transmission. Reactive case detection will be emphasized in this stratum.
2	Appropriate case management is critical in this stratum with unstable malaria transmission. Early epidemic detection should be established, and appropriate case management provided with immediate response to outbreaks.
3	In this stratum, high-quality malaria case management services are the priority, with focus on community service provision through village health services.

Reactive Case Detection and Investigation

Reactive case detection is a new intervention under case management and is part of NMCP's elimination strategy. Guided by the malaria stratification, this intervention will be introduced in stratum 1 to interrupt transmission and maintain interruption. The approach will cover the following activities:

- Train health workers, namely CHNs and VHWs, on reactive case detection and investigation;
- Conduct a reactive case search within a 150 m perimeter of the malaria case to identify the population at risk and facilitate case classification;
- Implement appropriate foci management, which may include expanded case detection and entomological, ecological, and intervention assessments and actions (integrated vector management with universal coverage, including ITNs/IRS and larval source management);

- Provide supervision and monitoring of reactive case searches at the facility and regional level; and
- Engage technical assistance to set up a system for reactive case detection and investigation reporting and documentation.

Similar to malaria cases that present passively to a VHW in the community or to a health facility worker at any level of the health system, reactive case detection also requires adherence to NMCP malaria case management guidelines that include accurate malaria diagnosis and quality treatment.

For more detailed information on elimination, see the country profile, as well as the SBC section (7), and the SBC section (8).

4.2. Plans and Justification for FY 2023 and FY 2024 Funding

The FY 2023 and FY 2024 funding tables contain a full list of case management activities that PMI proposes to support in The Gambia with FY 2023 and FY 2024 funding.

With FY 2023 funding, PMI plans to support the development and piloting of a case-based surveillance and response package following the 1-3-7 approach for elimination and ensuring coordination at the community, health facility, and regional level, drawing from existing national case-based surveillance guidelines and protocols. This elimination package will include training and supervision of VHWs and CHNs to conduct community-based malaria case management activities related to malaria elimination in PMI-supported areas in stratum 1. The pilot elimination package will include: management/supervision/monitoring by the national program and mobilization with response by the regional health directorate staff; case management training for facility health workers, CHNs, and VHWs; job aid design/production; case investigations; foci investigations; entomological monitoring; SBC; and real-time digital reporting, analysis, and documentation. The elimination pilot experience will inform PMI's future plans to roll out or scale up the approach in two selected health regions with FY 2024 funding.

National-Level Case Management Activities

PMI funds will be used to ensure that the case management technical working group meetings at the national level occur on a quarterly basis among NMCP and partners to discuss malaria diagnosis and treatment progress and any issues or concerns, including the management of malaria in all three transmission strata.

PMI will also provide funding for operational meetings to support the case-based surveillance and response pilot in the relevant region, including: national-level staff with expertise in case management, commodity/pharmaceutical management, SBC, and SM&E. Attendees will include the relevant regional health directorate and regional elimination team members, including health facility and community representatives such as CHNs and VHWs.

Commodities

With FY 2023 and FY 2024 funding, PMI will procure the commodities necessary for the elimination pilot and selected areas, including RDTs, microscopy supplies, malaria medicines with the addition of low-dose primaquine, and ITNs for foci investigation and response. See the RDT, ACT, primaquine, and ITN gap analysis tables in the annex for more details on planned quantities and distribution channels.

Facility Level

PMI will provide case-based surveillance and response training and support for health facility staff and CHNs for the elimination pilot and expand to the selected region/s with FY 2023 and FY 2024 funding. PMI will support health facility staff and CHNs with reactive case detection and response, case investigations, and SBC to orient health facility staff and communities on elimination and keep staff and community members and leaders updated about case investigation events.

Community Level

In a stratum 1 area(s), PMI will provide elimination training, support, and supervision for VHWs in the elimination pilot and expand in the selected region(s) with FY 2023 and FY 2024 funding. PMI will support VHWs in implementing active case detection and response, case investigations with the regional health directorate team, and SBC activities to orient communities on elimination and keep community members and leaders updated about case investigation events.

Monitoring Antimalarial Efficacy

Historically, The Gambia TES have been implemented with funding from the Global Fund with technical assistance from the MRC/Gambia and WHO. PMI does not plan to use FY 2023 or FY 2024 funding for TES activities; instead PMI will monitor results from efficacy studies funded by other partners. In addition, PMI will coordinate closely with PMI/Senegal to identify Senegal's TES locations/results as a possible proxy measure and to ensure that relevant study results are shared between the two countries' malaria programs.

Results from efficacy studies conducted from 2010 to 2018 on AL, the first-line antimalarial medicine, have shown a polymerase chain reaction adjusted adequate clinical and parasitological response ranging from 96.1 to 100 percent. The next TES are scheduled for calendar years 2024–2025.

Table 3. Ongoing and Planned Therapeutic Efficacy Studies (TES)

Year	Site Name	Treatment Arm(s)	Plan for Laboratory Testing of Samples
Ongoing Studies			
2021–2022	Basse (Eastern)	Artemether-lumefantrine	● On-site ● EQA at Medical Research Council and National Public Health Laboratories ● Genotyping at MRC
2021–2022	Brikama (Western)	Artemether-lumefantrine	● On-site ● EQA at Medical Research Council and National Public Health Laboratories ● Genotyping at MRC
2021–2022	Kuntaur (Central)	Dihydrortemisinin-piperaquine	● On-site ● EQA at Medical Research Council and National Public Health Laboratories ● Genotyping at MRC
Planned Studies			
2024–2025	Basse (Eastern)	Artemether-lumefantrine	● On-site ● EQA at Medical Research Council and National Public Health Laboratories ● Genotyping at MRC
2024–2025	Brikama (Western)	Artemether-lumefantrine	● On-site ● EQA at Medical Research Council and National Public Health Laboratories ● Genotyping at MRC
2024–2025	Kuntaur (Central)	Dihydroartemisinin-piperaquine	● On-site ● EQA at Medical Research Council and National Public Health Laboratories ● Genotyping at MRC

EQA: External quality assessment; MRC: Medical Research Council.

5. Health Supply Chain and Pharmaceutical Management

5.1. PMI Goal and Strategic Approach

Procurement and supply chain management is supported under NMCP's sixth strategic objective—to, by 2025, strengthen malaria program management and partnership capacity at all levels for the optimal implementation of interventions to achieve elimination. NMCP aims to ensure the consistent availability and effective management of malaria control commodities as a basic prerequisite to successful program implementation and achievement of its targets. Key strategic interventions include selection, quantification, procurement, quality assurance, quality control, inventory management, storage, distribution, pharmacovigilance, supervision, and monitoring.

The 2021–2025 NMSP outlines the following activities to strengthen the procurement supply management system:

- Procure, store, and distribute malaria medicines, commodities, and other supplies;
- Strengthen capacity at all le vels for forecasting and quantification;
- Put in place a quarterly supply plan review mechanism and a biannual quantification review;
- Develop standard operating procedures and guidelines for the quantification of antimalarial medicines;
- Strengthen safety monitoring malaria medicines;
- Develop a national supply chain strategy;
- Strengthen medicines and supplies storage conditions at the national, regional, health facility, and community levels;
- Establish an electronic health management information system (HMIS) at health facilities; and
- Equip regional medical stores (RMS) and health centers with appropriate infrastructure for the use of an electronic logistics management information system (e-LMIS).

The National Pharmaceutical Services have overall procurement responsibility for all pharmaceuticals used in the public health sector, including procurement of malaria commodities. The MOH has established a contracts committee in accordance with The Gambia Public Procurement Authority Act, 2001 and Regulations 2003, and consists of representatives from various MOH technical units. A multidisciplinary national quantification committee has also been established; it is responsible for identifying procurement needs in consultation with partners and stakeholders.

Storage facilities in The Gambia include the CMS in Kotu (in the national capital area) and seven satellite RMS with facilities in Brikama, Kanifing, Mansakonko, Bansang, Basse, Farafenni, and Essau. Under the management of the National Pharmaceutical Services, CMS is responsible for the storage and distribution of health commodities, including malaria commodities, to hospitals and RMS every three months. RMS distributes supplies to health facilities within their respective regions. The Global Fund resilient and sustainable systems for health grant provides support for upgrading of the central and regional stores, enhancing the storage capacity to match the increased programmatic needs of an integrated warehouse. All health items are being standardized with product codes across the three programs (HIV, tuberculosis, and malaria). NMCP and the Global Fund use the existing MOH supply management system under the National Pharmaceutical Services to manage the in-country warehousing and deliver malaria commodities across all levels of the health system. Malaria supplies are delivered to the RMS and hospitals by trucks and pick-ups through a pooled transport management system. Ambulances are normally used as transport from RMS to major and minor health facilities. Supplies to the community level are done through health facilities using a combined requisition and issue notes from VHWs.

Per the NMSP 2021–2025, NMCP identified the following key activities to strengthen inventory management, storage, and distribution:

- Provide inventory control and stock management tools;
- Upgrade the inventory management software and information technology infrastructure;
- Strengthen the capacity of health workers on inventory management at all levels;
- Provide national guidelines for good storage and supply of medical commodities;
- Strengthen supply chain visibility between CMS and RMS;
- Strengthen transportation of medical commodities to RMS, health facilities, and village health services;
- Build capacity of data entry clerks on the logistics management information system (LMIS) at the health-facility level;
- Establish the e-LMIS to regional and health facility levels for real-time data visibility; and
- Strengthen the capacity of RMS and health centers ro use the e-LMIS.

The LMIS monitors stock levels to ensure uninterrupted supply of commodities to all health facilities and VHWs. Stock monitoring is conducted using the LMIS capturing data manually (at the community and health facility level) and electronically (at the regional level). The current Global Fund grant supports the rollout of an e-LMIS to all RMS and district hospitals by the end of 2023; health facilities continue to use paper-based reporting. The e-LMIS is linked to the HMIS/DHIS2 platform.

5.2. Plans and Justification with FY 2023 and FY 2024 Funding

The FY 2023 and FY 2024 funding tables contain a full list of health supply chain and pharmaceutical management systems strengthening that PMI proposes to support in The Gambia with FY 2023 and FY 2024 funding.

With FY 2023 and FY 2024 funds, PMI will procure limited quantities of malaria commodities (RDTs, ACTs, and ITNs) for the elimination package, which includes case-based surveillance and foci investigation and response. PMI will utilize the MOH supply chain system for warehousing and distribution of PMI commodities as well as stock monitoring and reporting. The Global Fund provides support for strengthening the national supply chain management system through both the malaria grant and the resilient and sustainable systems for health grant. PMI will therefore focus its investments on procuring commodities for implementing elimination activities at the regional level.

6. Malaria Vaccine

6.1. PMI Goal and Strategic Approach

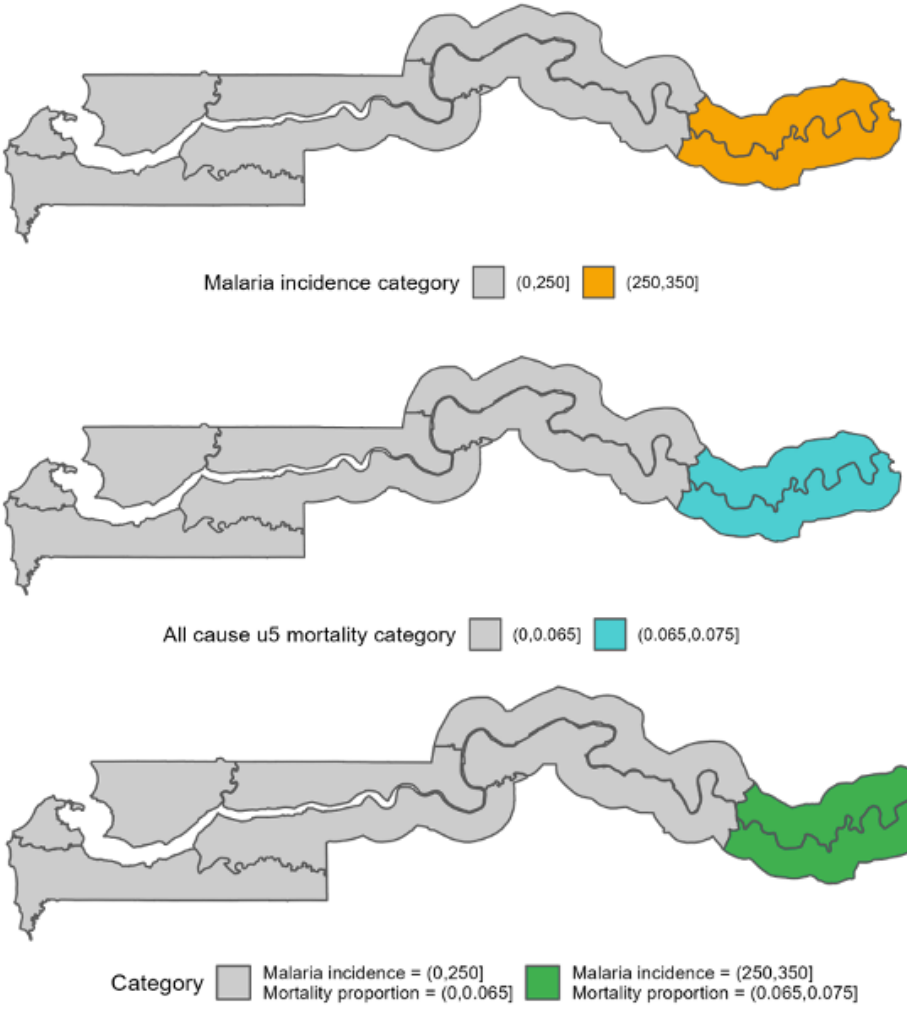
The country's objective in deploying the malaria vaccine is to add a critical prevention tool in the region with the highest malaria burden, according to transmission intensity and all-cause mortality in children under the age of five, to protect vulnerable young children and to further decrease malaria transmission. The Gambia specifically aims to use the vaccine to prevent

malaria, severe malaria (hospitalization), and the anemia that accompanies malaria in young children. If the vaccine application is successful and Gavi vaccine supply projections are on track, The Gambia may be adding the vaccine to its toolkit during the 2025–2027 time frame.

NMCP worked with MOH colleagues during 2022 and 2023 to develop a Gavi application for the RTS,S vaccine. Using guidance from WHO and Gavi, The Gambia investigated data from regions of the country already documented as having moderate-to-high malaria transmission, and further recategorized them according to transmission intensity and all-cause mortality in children under the age of five. A composite of the two indicators was created to identify the areas of highest transmission and mortality as the areas of highest need for the malaria vaccine in Gambia.

The Gambia plans to target the vaccine to Upper River Region to protect 10,448 eligible children.

Figure 7. Map of Criteria for Selecting Upper River Region as a Targeted Location for RTS,S



Categories of need	Incidence	AU5MR
1	350-<450	>9.5%
1	>=450	>9.5%
1	>=450	7.5%-<9.5%
2	250-350	>9.5%
2	350-450	7.5%-<9.5%
2	>=450	6.5%-7.5%
3	250-<350	7.5%-<9.5%
3	350-<450	6.5%-7.5%
3	>=450	<=6.5%
4	250-<350	6.5%-7.5%
4	350-<450	<=6.5%
5	250-<350	<=6.5%

6.2. Plans and Justification for FY 2023 and FY 2024 Funding

PMI is not providing any funding for the vaccine application or deployment during FY 2023 and FY 2024.

The FY 2023 and FY 2024 funding tables contain a full list of activities related to other drug-based prevention that PMI proposes to support in The Gambia with FY 2023 and FY 2024 funding.

7. Social and Behavior Change

7.1. PMI Goal and Strategic Approach

The fourth objective of the NMSP 2021–2025 is that by 2025, at least 90 percent of the population have appropriate knowledge and practice use of malaria prevention and management services through advocacy and social mobilization behavior change communication (ASMBCC). This objective is accompanied by a goal to maintain this level of achievement throughout the NMSP time period, grounded in a baseline of 91 percent attained during the 2017 Malaria Indicator Survey (MIS).

SBC funds in the NMSP budget are severely limited, comprising only 1.4 percent of the total budget. The current Global Fund grant and other donor support have only been able to provide limited funds for SBC and are primarily supporting areas with higher malaria prevalence in the country.

7.2. Plans and Justification with FY 2023 and FY 2024 Funding

The FY 2023 and FY 2024 funding tables contain a full list of SBC activities that PMI proposes to support in The Gambia with FY 2023 and FY 2024 funding.

With FY 2023 and FY 2024 funding, PMI will support the following critical SBC needs for The Gambia malaria program.

SBC Strategy

Review and analyze MIS 2023 data and any other new survey information. Work with NMCP to develop a plan for the SBC strategy development, production, and dissemination. Convene NMCP and representatives of all malaria partners and stakeholders to a development workshop to create a new strategic plan.

ASMBCC Technical Working Group Meetings

Work with NMCP and PMI implementing partner to revitalize regular ASMBCC technical working group meetings.

Elimination SBC

Work with NMCP to develop a micro-plan for the SBC component of case-based surveillance and response in targeted stratum 1 area/s to be selected in consultation with NMCP. Develop SBC guidance, tools, and job aids.

Priorities

Through a new, updated SBC strategy and technical working group meetings at the national level, PMI will help provide overall national level support for the uptake and maintenance of all key malaria interventions, including vector control, case management, IPTp, and SMC. The updated SBC strategy would benefit from exploring a theoretical framework on which to base its approach. The strategy should use the findings from the anticipated 2023 MIS (with SBC module) and other recent surveys to include more information on the determinants of health-affecting behavior in The Gambia. Adoption of a dual underpinning of an SBC theoretical basis and data into the next SBC strategy would help focus and drive the SBC agenda and activities. In addition, the SBC strategy and guidance would benefit from being more tailored to the country's stratification levels, at a minimum being tailored to elimination (green) and control (yellow and red) areas. Priority behaviors planned to be addressed based on PMI's focus on elimination activities in stratum one are listed in Table 4.

Table 4. Priority Behaviors to Address

Behavior	Target Population	Geographic Focus	Programming to Address Behavior
Adherence to elimination case-based detection and response protocol	Health workers in pilot elimination areas	To be determined	● This is a newly introduced focus area in The Gambia as PMI will pilot case-based detection and response in one or more elimination areas. Potential activities include conducting a rapid, formative assessment of elimination providers and community members from the client perspective to understand potential barriers and facilitators of the case-based detection and response method, including adherence to low-dose primaquine for gametocide. ● Use of formative assessment findings to design SBC activities to promote consistent and quality services, leading to uptake and adherence of a case-based detection method and low-dose primaquine for gametocide. ● Implementation of theory-informed, evidence-based SBC activities to promote consistent and quality services leading to uptake of and adherence to case-based detection and low-dose primaquine for gametocytocidal effect.

Adherence to case management guidelines for elimination areas, including radical cure	Community members who test positive for malaria in pilot elimination areas	To be determined	● This is a newly introduced focus area in The Gambia as PMI will pilot case-based detection and response in one or more elimination areas. Potential activities include conducting a rapid formative assessment of elimination community members and providers to understand potential barriers and facilitators of the case-based detection and response method from the client perspective, including low-dose primaquine for gametocide. ● Use of formative assessment findings to design SBC activities to promote uptake of and adherence to a case-based detection method for low-dose primaquine for gametocytocidal effect. ● Implementation of theory-informed, evidence-based SBC activities to promote uptake of and adherence to case-based detection and low-dose primaquine for gametocide.
Uptake and consistent use of appropriate vector control tools to prevent malaria transmission or reintroduction in elimination areas	Communities in elimination areas	To be determined	

8. Surveillance, Monitoring, and Evaluation

8.1. PMI Goal and Strategic Approach

The Gambia has made significant progress in the reduction of malaria morbidity and mortality in recent years and is moving from malaria disease burden reduction to malaria elimination. The NMSP 2021–2025 seeks to consolidate the gains made in moving The Gambia toward malaria elimination, including achieving zero locally acquired cases of malaria and zero deaths by 2025. Following the guidance of the Global Malaria Technical Strategy, surveillance is a core intervention in the 2021–2025 NMSP. Two of its objectives are to (1) by 2025, strengthen malaria SM&E and operational research (OR) systems at all levels to improve decision making for program performance; and (2) by 2025, strengthen malaria program management and partnership capacities at all levels for the optimal implementation of interventions to achieve elimination. As part of the process to facilitate the implementation of the NMSP, an SM&E plan for 2021–2025 was developed in coordination with the development of surveillance guidelines, standard operating procedures, and data collection tools. Previously, implementation of country malaria SM&E and OR activities were guided by the 2014–2020 monitoring and evaluation plan, which included the prioritization of the following components: monitoring and evaluation systems coordination, capacity strengthening, tracking progress, data quality assurance, data demand and use, supportive supervision, and measuring outcomes and impact.

Malaria surveillance is part of the integrated disease surveillance and response system in The Gambia, coordinated by the Epidemiology and Disease Control Unit of the MOH. Over 30 priority diseases, including malaria, are classified as reportable. These diseases are reported to the WHO and other partners through the HMIS. Malaria has moved from being a disease of public health importance to a disease targeted for elimination in The Gambia and, as such, the country's investigation and response will be supported by the Public Health Emergency Operation Center using the Incident Management System, which has adopted the 1-3-7 approach to case-based malaria surveillance.

The Gambia Bureau of Statistics is the government agency responsible for the production and dissemination of statistics in the country. It developed a policy on data and microdata dissemination for The Gambia in 2018, which focused on the following key points:

- Official statistics is a common property of the society, so they should be disseminated autonomously, transparently, and without interference from political navigation;
- Dissemination formats and channels should be user-friendly and made easier with the help of the latest technology and innovation; and
- Data file structures that ensure confidentiality of respondents should be used at all times.

The 2020 malaria program review provided the following key SM&E-related recommendations to guide future activities:

- Develop specific indicators and targets;
- Regularly conduct epidemiological and entomological stratification to guide targeting of intervention deployment;
- Conduct malaria micro-stratification and risk mapping at the regional, district, and community level to guide implementation of malaria interventions;
- Strengthen malaria surveillance, including developing guidelines and revising available health information system tools, to guide implementation in the context of changing epidemiology;
- Strengthen the surveillance system through capacity strengthening, regular monitoring, and partnerships;
- Review and update HMIS data collection tools to capture emerging issues (malaria pre-elimination and elimination reporting requirements);
- Train more health workers on data generation, analysis, and use;
- Strengthen service data reporting from hospitals through training, monitoring, and supportive supervision; and
- Move from passive to active surveillance as the program reaches pre-elimination.

Due to the long shared border between The Gambia and Senegal, improving the quality and accessibility of data for regions along the border in both countries is an important goal. In 2018, the two countries signed a memorandum of understanding—the Senegambia Initiative in the Border Regions—that created a legal framework for collaboration in malaria planning,

information sharing, and programs. The political will exists to accomplish this activity, and efforts have been initiated to facilitate data sharing between countries. PMI's investments in SM&E in The Gambia will focus on enhancing the cross-border collaboration with Senegal to ensure timely data sharing and coordinated response. Elimination is a cross-cutting NMCP objective and, as such, PMI's funding will be used to support these cross-cutting efforts, including improved surveillance and data use at the community, regional and national level to ensure successful implementation of elimination guidelines and protocols in the targeted areas.

8.2. Plans and Justification with FY 2023 and FY 2024 Funding

The FY 2023 and FY 2024 funding tables contain a full list of SM&E activities that PMI proposes to support in The Gambia with FY 2023 and FY 2024 funding.

With FY 2023 and FY 2024 funding, PMI will support surveillance and data activities in alignment with the NMSP and current elimination goals. PMI will provide funding for case and foci investigations, for implementing case-based, real-time reporting at the district level, and strengthening data linkages at the regional level. PMI will also support the improvement of surveillance data quality and feedback of data analysis to health facilities. These activities will address a need to increase engagement and data ownership and work to improve the quality of surveillance reporting and frequency of routine data use. Surveillance efforts will also include training health professionals in data skills and use of electronic reporting. VHWs can address a critical need in the health system, especially in areas targeted for elimination, so support and training of VHWs and data reporting at the community level is also planned.

PMI will work with the MOH and other malaria stakeholders to identify and support next steps needed to create an accessible and useful data platform that will allow each country to view and share data with each other, including data visualizations, mapping capabilities, and basic analytical tools, likely within DHIS2. This platform can also assist in coordinating the planning and timing of malaria interventions and campaigns along the border in both countries. In addition to the technical needs, PMI will support the coordination of public health leaders from both countries to meet and discuss key cross-border issues, collaborate on intervention selection and planning, and communicate malaria data and future priorities. This cross-border malaria coordination and data sharing will positively impact The Gambia across all levels of the government. At first, in-depth SM&E activities will be focused in the regions selected for elimination, but cross-border data sharing will support health facilities nationwide.

Table 5. Available Malaria Surveillance Sources

Source	Data Collection Activity	2020	2021	2022	2023	2024	2025
Household surveys	Demographic Health Survey	*					*
Household surveys	MIS		*		*		*
Household surveys	MICS						
Household surveys	EPI survey						
Health facility surveys	Service provision assessment						
Health facility surveys	Service availability readiness assessment survey						
Health facility surveys	Other health facility survey						
Malaria surveillance and routine system support	Therapeutic efficacy studies		*			*	
Malaria surveillance and routine system support	Support to parallel malaria surveillance system						
Malaria surveillance and routine system support	Support to HMIS	*	*	*	P	P	P
Malaria surveillance and routine system support	Support to integrated disease surveillance and response system	*	*	*	P	P	P
Malaria surveillance and routine system support	Electronic logistics management information system (eLMIS)						
Malaria surveillance and routine system support	Malaria rapid reporting system						
Other	EUV						
Other	School-based malaria survey						
Other	Knowledge, attitudes, and practices survey, malaria behavior survey				*		
Other	Malaria impact evaluation						
Other	Entomological monitoring surveys				P	P	P

*Non-PMI funded activities; X: completed activities; P: planned activities. HMIS: health management information system; MICS: Multiple Indicator Cluster Survey; MIS: Malaria Indicator Survey

9. Operational Research and Program Evaluation

9.1. PMI Goal and Strategic Approach

One objective of The Gambia's 2021–2025 NMSP was that by 2025, The Gambia would strengthen malaria SM&E and OR systems at all levels to improve decision making for program performance. The NMSP states that the OR agenda will be reviewed and updated to include emerging research issues. Capacity for OR will be strengthened at both program and partner levels. OR activities will be conducted based on priorities to guide program implementation. Findings of the OR will be disseminated to all relevant stakeholders. Collaboration with MRC, University of The Gambia, and other research institutions will be enhanced to promote sharing of findings and progress updates.

The need for the identification of OR priorities has been recognized, and as a new PMI country, discussions identifying OR and program evaluation (PE) needs will be ongoing. The 2020 malaria program report identified OR priorities such as the assessment of slide positivity rate for malaria cases at sentinel sites, including sentinel surveillance, field evaluation of RDTs, and assessment of health facilities with malaria diagnostic tools. However, according to the 2020 malaria program review, there is currently no OR plan developed. There are currently no plans to conduct PMI-funded OR in The Gambia.

Table 6. Non-PMI funded Operational Research/Program Evaluation Studies Planned/Ongoing in The Gambia

Source of Funding	Implementing institution	Research Question/Topic	Current Status/ Timeline
National Institute for Health and Care Research (NIHR) United Kingdom	MRC/Gambia	NIHR Global Health Research Group on Digital Diagnostics for African Health Systems. The project works to develop an evidence-base to support the development, implementation, and impact of digital diagnostics technology in African health systems.	2022–2026
The European & Developing Countries Clinical Trials Partnership	MRC/Gambia	Safety and efficacy of a newly registered artemisinin-based combination (Pyronaridine-Artesunate–Pyramax®) for the treatment of uncomplicated malaria.	2019–2024
Bill & Melinda Gates Foundation	MRC/Gambia	*P. falciparum* infection dynamics and transmission to inform elimination.[5]	2017–2021
United Kingdom Research and Innovation/Joint Global Health Trials	MRC/Gambia	Mass drug administration of ivermectin + dihydroartemisinin in settings with high coverage of standard control interventions[6]	2017–2019

[5] https://mesamalaria.org/mesa-track/p-falciparum-infection-dynamics-and-transmission-inform-elimination-indie

[6] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7714640/

Medicines for Malaria Venture and Shin Poong Pharmaceutical Co., Ltd	MRC/Gambia	A study to determine the efficacy of different treatment regimens of Pyramax (pyronaridine-artesunate) in asymptomatic carriers[7]	2018–2019
United Kingdom Research and Innovation/Joint Global Health Trials	MRC/Gambia	Reactive household-based self-administered treatment against residual malaria transmission: a cluster randomized trial (RHOST)	2016–2018
The European & Developing Countries Clinical Trials Partnership	MRC/Gambia	Maximizing the public health impact of interventions to control malaria in pregnancy.	2016–2018
United Kingdom Research and Innovation/Joint Global Health Trials	MRC/Gambia	Investigating if improved housing provides additional protection against clinical malaria over current best practice[8]	2014–2018

MRC: Medical Research Council.

9.2. Plans and Justification with FY 2023 and FY 2024 Funding

The FY 2023 and FY 2024 funding tables contain a full list of OR/PE activities that PMI proposes to support in The Gambia with FY 2023 and FY 2024 funding.

No PMI OR/PE activities are proposed with FY 2023 or 2024 funding.

10. Capacity Strengthening

10.1. PMI Goal and Strategic Approach

The NMSP states that it is essential to ensure and maintain a full complement of motivated staff for extended periods, particularly given the country's push toward elimination. The MOH will ensure that there is effective leadership and strong program management capacity for planning, implementation, monitoring, and evaluation for a sustainable malaria elimination program. NMCP will strengthen staff expertise in specialized areas and increase the generalized capacity of staff at the central and regional level. NMCP's inclusion of partners and stakeholders in joint planning and review meetings held periodically will help build the staff's capacity in better coordination, planning, and analysis approaches. Finally, NMCP plans to revitalize malaria technical advisory councils and partnerships in the country as motivating mechanisms for the program. Specific capacity-strengthening goals for NMCP during the life of the current NMSP include:

- Build capacity of staff at the central and regional level on program management;
- Train staff in specialized areas, such as entomology, epidemiology, parasitology, monitoring, and evaluation;

[7] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8800175/
[8] https://pubmed.ncbi.nlm.nih.gov/33838737/

- Facilitate staff to attend WHO international training on malaria planning and management;
- Develop a business plan for malaria elimination;
- Conduct high-level advocacy and resource mobilization activities;
- Establish a Malaria Elimination Council; and
- Revitalize and strengthen in-country Partnership to End Malaria at central and regional levels.

10.2. Plans and Justification with FY 2023 and FY 2024 Funding

The FY 2023 and FY 2024 funding tables contain a full list of capacity strengthening activities that PMI proposes to support in The Gambia.

PMI's capacity-strengthening efforts are integrated with the activities previously described in this Malaria Operational Plan (MOP), including funding for:

- Malaria case-based detection and response teams (management/supervision, planning, surveillance, case management, case investigation, foci investigation, good communication practices, SBC engagement with health facility staff, community health staff, and community members—including VHWs).
- Cross-border data sharing between The Gambia and Senegal for routine data and campaign or specific event data and support for cross-border meetings where critical data issues and intervention implementation updates will be discussed (capacity strengthening for data platform managers, data analysts, surveillance officers, and data clerks).
- Entomological surveillance for insecticide-resistance and longitudinal and/or foci-based vector-bionomics monitoring, and development of an *Anopheles stephensi* surveillance and response plan and initiation of surveillance (strengthening the capacity of the RVCOs to coordinate implementation of entomological monitoring activities and training for community surveillance of entomological staff).
- SBC capacity strengthening, including the exploration of the most relevant SBC theory and models for the country's malaria program and planning and strategy development for a new SBC plan to include a dual focus on supporting control and elimination areas and increasing facilitation and coordination skills through regular technical working group meetings).
- Small grants to the U.S. Peace Corps to engage in malaria control and prevention activities, such as community mobilization for SBC and ITN distribution.

11. Staffing and Administration

The PMI program in The Gambia will be led by the USAID Mission Director/Sahel Regional Office or their designee and be overseen on a day-to-day basis by a locally hired senior malaria technical and program expert, known as a foreign service national. The senior malaria expert will oversee technical and administrative aspects of PMI, including finalizing details of project design, implementing malaria prevention and treatment activities, monitoring and evaluation of outcomes and impact, reporting of results, and providing guidance and direction to PMI implementing partners. The senior malaria expert will play a lead role as PMI liaison with NMCP program manager and staff, representing PMI at partner meetings and technical working group events. The PMI interagency team at the USAID Sahel Regional Office and USAID/Washington, and Center for Disease Control and Prevention/Atlanta will provide technical, program and administrative support to the senior malaria technical and program expert on a regular basis.

ANNEX: GAP ANALYSIS TABLES

Table A-1. ITN Gap Analysis Table

Calendar Year	2023	2024	2025
Total country population	2,619,693	2,716,436	2,817,703
Total population at risk for malaria	2,619,693	2,716,436	2,817,703
PMI-targeted at-risk population	278,985	285,680	292,536
Population targeted for ITNs	2,619,693	2,716,436	2,817,703
Continuous distribution needs			
Channel 1: ANC	99,548	103,225	107,073
Channel 1: ANC type of ITN	Single Pyrethroid	Single Pyrethroid	PBO
Channel 2: EPI	90,117	93,445	96,929
Channel 2: EPI type of ITN	Single Pyrethroid	Single Pyrethroid	PBO
Channel 3: School			
Channel 3: School type of ITN			
Channel 4: Community			
Channel 4: Community type of ITN			
Channel 5: Institutional	27,507	28,523	29,586
Channel 5: Type of ITN	Single Pyrethroid	Single Pyrethroid	PBO
Estimated total need for continuous channels	217,173	225,193	233,588
Mass campaign distribution needs			
Mass distribution campaigns			1,565,391
Mass distribution ITN type			Dual AI
Estimated total need for campaigns			1,565,391
Total ITN need: Continuous and campaign	217,173	225,193	1,798,978
Partner contributions			
ITNs carried over from previous year		0	188,307
ITNs from government	0	0	0
Type of ITNs from government			
ITNs from Global Fund	215,863	223,834	1,654,978
Type of ITNs from Global Fund	Single Pyrethroid	Single Pyrethroid	Dual AI

ITNs from other donors			
Type of ITNs from other donors			
ITNs planned with PMI funding		142,180	142,180
Type of ITNs with PMI funding		Dual AI	Dual AI
Total ITNs contribution per calendar year	**215,863**	**413,500**	**2,040,046**
Total ITN surplus (gap)	**(1,310)**	**188,307**	**241,067**

Table A-2. RDT Gap Analysis Table

Calendar Year	2023	2024	2025
Total country population	2,619,693	2,716,436	2,817,703
Population at risk for malaria	2,619,693	2,716,436	2,817,703
PMI-targeted at-risk population	278,985	285,680	292,536
RDT needs			
Total number of projected suspected malaria cases	496,221	471,410	447,839
Percent of suspected malaria cases tested with an RDT	76%	76%	76%
RDT needs (tests)	377,128	358,272	340,358
Needs estimated based on HMIS data			
Partner contributions (tests)			
RDTs from government	68,470	62,067	
RDTs from Global Fund	273,879	248,269	377,127
RDTs from other donors			
RDTs planned with PMI funding		13,157	13,257
Total RDT contributions per calendar year	**342,349**	**323,493**	**390,384**
Stock balance (tests)			
Beginning balance		0	0
- Product need	377,128	358,272	340,358
+ Total contributions (received/expected)	342,349	323,493	390,384
Ending balance	**(34,779)**	**(34,779)**	**50,026**
Desired end of year stock (months of stock)	6	6	6
Desired end of year stock (quantities)	188,564	179,136	170,179
Total surplus (gap)	**(223,343)**	**(213,914)**	**(120,153)**

Table A-3. ACT Gap Analysis Table

Calendar Year	2023	2024	2025
Total country population	2,619,693	2,716,436	2,817,703
Population at risk for malaria	2,619,693	2,716,436	2,817,703
PMI-targeted at-risk population	278,985	285,680	292,536
ACT needs			
Total projected number of malaria cases	132,000	110,000	100,000
Total ACT needs (treatments)	**132,000**	**110,000**	**100,000**
Needs estimated based on HMIS data			
Partner contributions (treatments)			
ACTs from Government	2,762	2,069	0
ACTs from Global Fund	11,050	8,277	0
ACTs from other donors			
ACTs planned with PMI funding		5,263	5,263
Total ACTs contributions per calendar year	**13,812**	**15,609**	**5,263**
Stock balance (treatments)			
Beginning balance		0	0
- Product need	132,000	110,000	100,000
+ Total contributions (received/expected)	13,812	15,609	5,263
Ending balance	**(118,188)**	**(94,391)**	**(94,737)**
Desired end of year stock (months of stock)	6	6	6
Desired end of year stock (quantities)	66,000	55,000	50,000
Total surplus (gap)	**(184,188)**	**(149,391)**	**(144,737)**

Table A-4. Inj. Artesunate Gap Analysis Table

Calendar Year	2023	2024	2025
Injectable artesunate needs			
Projected number of severe cases	3,432	2,860	2,600
Projected number of severe cases among children	2,231	1,859	1,690
Average number of vials required for severe cases among children	4	4	4
Projected number of severe cases among adults	1,201	1,001	910
Average number of vials required for severe cases among adults	9	9	9
Total injectable artesunate needs (vials)	**19,734**	**16,445**	**14,950**
Needs estimated based on HMIS data			
Partner contributions (vials)			
Injectable artesunate from government	n/a	n/a	n/a
Injectable artesunate from Global Fund	n/a	n/a	n/a
Injectable artesunate from other donors			
Injectable artesunate planned with PMI funding	0	0	0
Total injectable artesunate contributions per calendar year	**0**	**0**	**0**
Stock balance (vials)			
Beginning balance		0	0
- Product need	19,734	16,445	14,950
+ Total contributions (received/expected)	0	0	0
Ending balance	**(19,734)**	**(16,445)**	**(14,950)**
Desired end of year stock (months of stock)	6	6	6
Desired end of year stock (quantities)	9,867	8,223	7,475
Total surplus (gap)	**(29,601)**	**(24,668)**	**(22,425)**

Table A-5. SP Gap Analysis Table

Calendar Year	2023	2024	2025
Total country population	2,619,693	2,716,436	2,817,703
Total population at risk for malaria	2,619,693	2,716,436	2,817,703
PMI-targeted at-risk population	278,985	285,680	292,536
SP needs			
Total number of pregnant women	99,548	103,225	107148
Percent of pregnant women expected to receive IPTp1	95%	95%	95%
Percent of pregnant women expected to receive IPTp2	85%	85%	85%
Percent of pregnant women expected to receive IPTp3	80%	80%	80%
Percent of pregnant women expected to receive IPTp4	50%	50%	50%
Total SP needs (doses)	**308,599**	**308,599**	**319,998**
Needs estimated based on other (specify in comments)			
Partner contributions (doses)			
SP from government	7,466	8,258	0
SP from Global Fund	52,735	58,517	0
SP from other donors			
SP planned with PMI funding	0	0	0
Total SP contributions per calendar year	**60,201**	**66,775**	**0**
Stock balance (doses)			
Beginning balance		0	0
- Product need	308,599	308,599	319,998
+ Total contributions (received/expected)	60,201	66,775	0
Ending balance	**(248,398)**	**(241,824)**	**(319,998)**
Desired end of year stock (months of stock)	6	6	6
Desired end of year stock (quantities)	154,299	154,299	159,999
Total surplus (gap)	**(402,697)**	**(396,123)**	**(479,996)**

Table A-6. SMC Gap Analysis Table

Calendar Year	2023	2024
Total population in the SMC targeted age range	322,786	335,788
SMC drug (SP+AQ) needs		
National population 3–11 months targeted for SMC	44,222	46,003
National population 12–59 months targeted for SMC	263,781	274,406
Total national population targeted for SMC	**308,002**	**320,409**
PMI population 3–11 months targeted for SMC	0	0
PMI population 12–59 months targeted for SMC	0	0
Total PMI population targeted for SMC	**0**	**0**
Total SP+AQ needs (co-blisters)	**308,002**	**320,409**
Partner contributions (co-blisters, national)		
SP+AQ carried over from previous year		338,803
SP+AQ from government	0	0
SP+AQ from Global Fund	646,805	672,859
SP+AQ from other donors		
SP+AQ planned with PMI funding	0	0
Total SP+AQ contributions per calendar year	646,805	1,011,661
Total SP+AQ surplus (gap)	**338,803**	**691,252**

Table A-7. Primaquine Gap Analysis Table

Calendar Year	2023	2024	2025
Total country population	2,619,693	2,716,436	2,817,703
Total population at risk for malaria	2,619,693	2,716,436	2,817,703
PMI-targeted at-risk population	278,985	285,680	292,536
Primaquine needs			
Total projected number of malaria cases	4,004	3,524	3,101
Total projected number of Pf cases	3,996	3,516	3,094
Total projected number of Pv cases	8	7	6
Total projected number of mixed cases (Pf + Pv)			
Total primaquine needs (tablets)	**24,200**	**21,296**	**18,741**
Needs estimated based on HMIS data			
Partner contributions (tablets)			
Primaquine from government	0	0	0
Primaquine from Global Fund	0	0	0
Primaquine from other donors			
Primaquine planned with PMI funding		35,500	35,500
Total primaquine contributions per calendar year	**0**	**35,500**	**35,500**
Stock balance (tablets)			
Beginning balance		0	14,204
- Product need	24,200	21,296	18,741
+ Total contributions (received/expected)	0	35,500	35,500
Ending balance	**(24,200)**	**14,204**	**30,963**
Desired end of year stock (months of stock)	6	6	6
Desired end of year stock (quantities)	12,100	10,648	9,370
Total surplus (gap)	**(36,300)**	**3,556**	**21,593**