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Guinea

Malaria Operational Plan FY 2024

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ABBREVIATIONS

ACT	Artemisinin-based combination therapy
AI	Active Ingredient
AL	Artemether-lumefantrine
ANC	Antenatal care
ASPY	Artesunate-pyronaridine
CAG	Community Action Group
CY	Calendar year
DHS	Demographic and Health Survey
DHIS	District Health Information Software
DNPM	*Direction Nationale de la Pharmacie et du Médicament*
DNSFN	*Direction Nationale de la Santé Familiale et de la Nutrition*
DNSCMT	National Directorate of Community Health and Traditional Medicine
eLMIS	Electronic Logistics Management Information System
EPM	Equipment preventive maintenance
FY	Fiscal year
Global Fund	Global Fund to Fight AIDS, Tuberculosis and Malaria
HMIS	health management information system
IPC	Interpersonal Communication
IPTp	Intermittent preventive treatment for pregnant women
IRS	Indoor residual spraying
ITN	Insecticide-treated mosquito net
LNCQM	*Laboratoire national de contrôle qualité des médicaments*
MIP	Malaria in pregnancy
MIS	Malaria Indicator Survey
MoH	Ministry of Health
MOP	Malaria operational plan
NMCP	National Malaria Control Program
PMI	U.S. President's Malaria Initiative
RDT	Rapid diagnostic test
RA	Resident Advisor
RECO	*Relais Communautaire* (community health extension worker)
SBC	Social and behavior change
SM&E	Surveillance, monitoring, and evaluation
SMC	Seasonal malaria chemoprevention

SP	Sulfadoxine-pyrimethamine
SPAQ	Sulfadoxine-pyrimethamine plus amodiaquine
TES	Therapeutic Efficacy Studies
TWG	Technical Working Group
USAID	U.S. Agency for International Development
WHO	World Health Organization

EXECUTIVE SUMMARY

To review specific country context for Guinea please refer to the country malaria profile, which provides an overview of the country malaria situation, key indicators, National Malaria Control Program (NMCP) strategic plan, and 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 three programs across the Greater Mekong Subregion in Southeast Asia to control and eliminate malaria. Guinea began implementation as a PMI partner country in FY 2011.

Rationale for PMI's Approach in Guinea

Though Guinea has made significant health gains over the past 20 years, including a 61 percent reduction in malaria prevalence since the launch of PMI, the all-cause mortality rate of children under the age of five remains among the world's highest. Malaria is the leading cause of clinical consultations, morbidity, and mortality, particularly among children under five years of age. PMI's approach is based on the PMI's five core areas of strategic focus: 1) reach the unreached; 2) strengthen community health systems; 3) keep malaria services resilient; 4) invest locally; and 5) innovate and lead. PMI programming is carefully coordinated with the NMCP, Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund) to ensure geographic coverage of priority malaria interventions.

Overview of Planned Interventions

The proposed FY 2024 PMI funding for Guinea is $15 million. PMI will support the following intervention areas with these funds:

1. Vector Monitoring and Control

PMI will continue to reinforce foundational and innovative vector monitoring and control activities through data quality and triangulation with case data to drive intervention decisions. This will include working with the NMCP, district health offices, university collaborators, and other partners to plan, supervise, conduct, and evaluate entomological and insecticide resistance monitoring through an Integrated Vector Control Technical Working Group (TWG). It is anticipated that community-based entomological monitoring will also be implemented to

have 1) greater coverage and continuity of entomological data, and 2) local capacity to collect this data. During the mass insecticide-treated mosquito nets (ITNs) campaign in calendar year (CY) 2025, PMI will support the procurement of dual active ingredient (AI) nets (specifically chlorfenapyr-based ITNs), and if additional funds are available, PMI will also support the digitalization and distribution of nets in the PMI-focus regions of Labe, Boke and two districts in Kindia and other partner locations. Social and behavior change (SBC) interventions will continue to be implemented to bolster the use and care of ITNs. PMI will not support the ITN campaign in Conakry.

2. Malaria in Pregnancy

Pregnant women receiving at least one dose of intermittent preventive treatment (IPTp) increased dramatically from 4 percent in 2005 to 79 percent in 2018. However, there is a substantial gap between women who receive one dose and those who receive the recommended three doses (just 36 percent receive IPTp3). PMI will continue to focus on promoting antenatal care (ANC) visits to women and their families, including IPTp, and will support provider training on technical skills, improved supervision of providers, and tracking of pregnant women. PMI will support the NMCP to implement the World Health Organization's (WHO's) revised guidelines for the treatment of uncomplicated malaria in the first trimester with artemether-lumefantrine (AL). The new guidelines are reflected in the National Malaria Strategic Plan 2023-2027 and the NMCP plans to update the national protocol later this year.

3. Drug-Based Prevention

PMI will support the continuation of seasonal malaria chemoprevention (SMC) for children 3 to 59 months of age in seven of the 17 currently eligible SMC districts in northern Guinea. This intervention is implemented using a door-to-door approach over a period of four to five months and includes testing household members who report current or recent subjective fever for malaria and treating those who test positive with an artemisinin-based combination therapy (ACT). In addition, an integrated activity focused on vaccination catch-up for children and pregnant women is done during the SMC visit.

4. Case Management

The NMCP is committed to ensuring universal testing of all suspected malaria cases with rapid diagnostic tests or microscopy and prompt treatment of confirmed malaria cases with efficacious antimalarials, primarily in the form of artemisinin-based combination therapies or injectable artemisinin derivatives. PMI supports the NMCP by providing injectable artemisinin derivatives and rectal artesunate to treat severe malaria. PMI provides the necessary training and supportive supervision of healthcare workers in health facilities and at the community level to ensure appropriate testing and treatment practices. With FY 2024 funds, PMI will continue

this support using comprehensive supervision tools that include points significant for malaria care with an increased focus on pre-service training and curricula. PMI will also support the monthly transportation fees of community health workers with FY 2024 funds.

5. Health Supply Chain and Pharmaceutical Management

To ensure the continuous availability of malaria commodities at health facilities, PMI will support the NMCP and its supply chain partners in strengthening drug regulatory capacity and logistics data and commodity delivery management, focusing on district and community levels. Supply chain activities supported with FY 2024 funds will continue to provide life-saving commodities and strengthen supply chain systems, with an increased focus on data quality and triangulation with patient data, interpretation, and use via the interoperability tool connecting drug logistics data in the electronic Logistics Management Information System (eLMIS) and service delivery data from the national District Health Information Software 2 (DHIS2). The interoperability tool is an application programming interface that permits different systems linked to DHIS2 to communicate with each other and display data to users. PMI will fund integrated supportive supervision for the various entities working to improve Guinea's public health supply chain, including the Ministry of Health (MoH), NMCP, and the *Pharmacie Centrale de Guinée-Société Autonome*. PMI will support the teams to prioritize data triangulation between DHIS2 and eLMIS at their quarterly review meetings to ensure accountability and rational use of life-saving malaria commodities.

6. Social and Behavior Change

PMI will support community dialogues through community action groups, radio spots, training for community health workers, and the production of conversation and educational aids, posters, and other print materials. FY 2024 funds will support mass media and interpersonal communication to promote early and frequent ANC attendance and prompt care-seeking for fever as well support the 2025 mass campaign of bed nets. PMI will support the country’s SBC technical working group, workshops and training, and partnerships with local organizations to conduct patient advocacy at the community and facility level.

7. Surveillance, Monitoring, and Evaluation

All 19 PMI-supported districts report all their aggregated monthly data directly into DHIS2 (297 health facilities). Reporting rates are consistently high, with recent improvements in the percentage of reports submitted on time, but data quality gaps remain. Commodities logistics data are entered into the eLMIS, which is integrated with DHIS2. PMI-supported implementing partners will coordinate with NMCP, health management information system (HMIS), and the supply chain teams to conduct integrated quarterly supportive supervision and data quality

reviews. PMI will support heightened collaboration among NMCP, HMIS, PCG-SA, and partners, given the HMIS database and related January 2022–23 upgrades to patient data collection forms (and related data elements) and registers used at all health pyramid levels. PMI will continue to work with NMCP, HMIS, and the WHO to incorporate entomology monitoring and evaluation data, which are currently maintained by the NMCP in MS Excel format, into the national system. These data can be triangulated with any other datasets in the HMIS as needed.

8. Operational Research and Program Evaluation

PMI will not use FY 2024 funds to support operational research and program evaluation.

9. Capacity Strengthening

PMI objectives for health system strengthening activities include training health workers on case management, supply chain management, health information systems strengthening, drug quality monitoring, vector surveillance and monitoring, and NMCP capacity strengthening. FY 2024 funds will also support small project grants to Peace Corps malaria volunteers and NMCP office management, including internet connectivity. These contribute to the government's commitment to quality malaria care provision, health system resources, personnel, and processes.

10. Staffing and Administration

PMI funds an interagency team to oversee the program's technical and administrative aspects. The team consists of resident advisors representing the U.S. Agency for International Development and U.S. Centers for Disease Control and Prevention, a malaria specialist, and a data specialist.

I. CONTEXT & STRATEGY

1. Introduction

Guinea began implementation as a PMI partner country in FY 2011. This FY 2024 Malaria Operational Plan (MOP) presents a detailed implementation plan for Guinea, based on the strategies of PMI and the National Malaria Control Program (NMCP). It was developed in consultation with the 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, describes progress to date, identifies challenges and relevant contextual factors, and provides a description of activities that are planned with FY 2024 funding. For more detailed information on the country's context, please refer to the Guinea malaria profile, which provides an overview of the malaria situation, key indicators, the NMCP strategic plan, and the partner landscape.

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

The U.S. President's Malaria Initiative (PMI) is led by the U.S. Agency for International Development (USAID) and implemented together with the U.S. Centers for Disease Control and Prevention (CDC). Launched in 2005, PMI supports the implementation of malaria prevention and treatment measures – insecticide-treated mosquito nets (ITNs), indoor residual spraying (IRS), accurate diagnosis and prompt treatment with artemisinin-based combination therapies (ACTs), intermittent preventive treatment of pregnant women (IPTp), and drug-based prevention – as well as cross-cutting interventions such as surveillance, monitoring, and evaluation; social and behavior change; and capacity-strengthening. 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 three programs in the Greater Mekong Subregion 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 upon the progress to date in PMI-supported countries, PMI will work with NMPs 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 Guinea

3.1. Malaria Overview for Guinea

Malaria is the number one public health problem. The available data show that, for all age groups combined, malaria is the leading cause of consultation in public health facilities. The country has made important progress in malaria control and prevention, substantially reducing malaria prevalence in children under 5 years of age, annual malaria incidence, and in-patient deaths. These gains have been driven by the rapid scale-up of malaria prevention and control interventions, led by the NMCP and supported by PMI and the Global Fund. A comparison of indicator data from several surveys shows a substantial decrease in the prevalence of malaria parasitemia in children 6–59 months of age between the 2012 and 2016 surveys and a slight increase in 2021. There is substantial regional variation in the ratio of bed net use to access across all regions (see Country Profile, Figure 3). This may partially be related to the timing of national mass bed net campaigns every three years: 2013, 2016, 2019, and 2022. The government has made the fight against malaria one of the priorities of the National Health Development Plan 2015–2024. Thus, it has adhered to all the international initiatives to fight malaria: the African Union Goals, the United Nations 2030 Sustainable Development Goals, and the objectives of the WHO/RDC Global Malaria Elimination Plan 2016-2030.

For more detailed information on malaria indicators, please refer to the Country Malaria Profile.

3.2. Key Challenges and Contextual Factors.

Though Guinea has made significant health gains in the past 20 years, its under-five mortality remains among the world's highest. Malaria is the leading cause of clinical consultations, hospitalizations, and hospital deaths, and is the biggest killer of children under five years of age (over 14 percent in this age group). The 2021 Malaria Indicator Survey (MIS)[1] reflected a malaria prevalence of 17 percent in children 6–59 months of age (by microscopy) compared to 15 percent in the 2016 Multiple Indicator Cluster Survey.[2] High regional variation in malaria parasitemia prevalence continues, with high prevalence in some regions.

Guinea has among the highest maternal mortality rates in sub-Saharan Africa, at 679 per 100,000 women.[3] Nearly half of all women of reproductive age are anemic, often due to a combination of poor birth spacing, high parasite prevalence, and lack of access to or use of health supplies and services. The 2021 MIS showed 6 percent of women did not receive any antenatal care, an improvement from 17 percent reported in 2005.[4]

Progress continues in several areas. The gap between rural and urban access to antenatal care in 2021 (82 percent and 96 percent, respectively) improved from 40 percent and 84 percent, respectively, in 2018. Malaria prevalence in children under five years of age, annual malaria incidence, and in-patient deaths were all reduced between 2005 and 2018. The proportion of women receiving three recommended doses of malaria preventive treatment during pregnancy rose to 50 percent in 2021 from 11 percent in 2012 and 36 percent in 2018. Insecticide-treated bed net use among pregnant women rose to 39 percent from 28 percent in the two previous surveys.

In addition, the situational analysis revealed the following main shortcomings: Insufficient legislative and regulatory framework, absence of a framework for drug prices, the weak culture of accountability and transparency, insufficient institutional capacity and leadership, insufficient public-private partnership, and organizational chart and health map are not well adapted to the current health system challenges.

Maintaining gains will require a concerted effort, including increased host country financing. The government's financial contribution to malaria control remains low despite the fact that the country procured more than one million ITNs in 2022 for the first time ever per its agreement

[1] Institut national de la Statistique (INS) [Guinée], et ICF. Enquête sur les indicateurs du paludisme et de l'anémie en Guinée 2021. (Conakry, Guinea et Rockville, Maryland, USA, 2021): https://dhsprogram.com/pubs/pdf/MIS37/MIS37.pdf.

[2] Institut National de la Statistique (INS), Programme National de Lutte contre le Paludisme (PNLP) et ICF. 2017. Enquête de prévalence parasitaire du paludisme et de l'anémie en Guinée 2016. Rockville, Maryland, USA: https://dhsprogram.com/pubs/pdf/FR332/FR332.pdf.

[3] Institut National de la Statistique and ICF. *Enquête Démographique et de Santé (EDS) en Guinée 2021.* (Conakry, Guinée, and Rockville, Maryland, United States of America, 2022).

[4] Ibid.

with the Global Fund. Significant staff vacancies and capacity gaps persist, with NMCP and Ministry of Health (MoH) staff overcommitted. Additionally, repeated outbreaks of vaccine-preventable disease and viral hemorrhagic fevers stretch an already overburdened health system.

3.3. PMI's Approach for Guinea

Apart from the national-level support to the NMCP, PMI supports malaria prevention and control activities in 13 of 33 districts, plus all six communes of Conakry. Global Fund supports activities in the remaining 20 districts. PMI and Global Fund collaborate to support the NMCP priorities identified in the National Malaria Strategic Plan, 2023-2027. An annual gap analysis is the basis for developing a joint action plan and for budget use negotiations. Both donors use the same materials and tools and collaborate on a number of activities, including policy and guideline development.

The main interventions described in the Guinea National Malaria Strategic Plan include:

- Vector control: Distribution of long-lasting ITNs through mass campaigns and continuous distribution channels; IRS; and larviciding
- Targeted prevention interventions (Intermittent preventive treatment for pregnant women and seasonal malaria chemoprevention [SMC])
- Ensuring laboratory confirmation by rapid diagnostic test (RDT) or microscopy for all suspected cases of malaria, and proper management of all confirmed cases in health facilities and in the community
- Strengthening pharmaceutical management, including improved quantification, storage and distribution, logistics information system, pharmacovigilance, and quality control, as well as strengthening the Guinea Central Pharmacy (*Pharmacie Centrale de Guinée-Société Autonome*)
- Social and behavior change (SBC), including interpersonal communication, mass media, advocacy, and social mobilization
- Strengthening surveillance, monitoring, and evaluation (SM&E) at all levels for the collection and analysis of high-quality patient and entomology data to inform decision-making
- Improving program management at the national, regional, and district levels and strengthening partnerships.

Both PMI and Global Fund support all of the above interventions except larviciding and indoor residual spraying (IRS), both of which do not receive any financial support. PMI supports vector monitoring nationally and therapeutic efficacy studies (TES) at four (two alternating sites annually) sites as well. Mining companies support IRS in at least two districts (Siguiri in Upper Guinea and Lola in Forested Guinea). PMI assists the NMCP to review and revise national documents regarding all vector control interventions.

PMI's overall approach is to maintain interventions and provide technical support in collaboration with NMCP and Global Fund. Annual adjustments to increasing commodity, operating, and administrative costs, health system shocks, and increasing demands are addressed as best as possible with the given funding envelope. Areas of PMI focus include vector monitoring and control; supply chain management; strategic information derived from epidemiology, commodity, and vector data; human resources capacity-strengthening; and health system strengthening, with the goal of maintaining and building on prior year gains at all levels. Because digital data collection and use are increasing among the NMCP, MoH, and funding and implementing partners, PMI will continue to adjust and support these innovations per the national HMIS human resources and physical infrastructure capabilities and capacities.

3.4 Key Changes in this MOP

PMI is working to strategically adjust its role as an ITN facilitator rather than an ITN procurer to maximize its budget judiciously. For the CY 2025 mass campaign, however, PMI will procure dual AI nets (i.e. chlorfenapyr-based ITNs). PMI also anticipates funding distribution in the regions of Labe, Boke, and two districts of Kindia (Dubreka and Coyah). Per the NMCP's interest, PMI will also support the development of community-based entomology surveillance in four sites, pending a pre-pilot (planning, development, and demonstration) in calendar year (CY) 2023.

II. OPERATIONAL PLAN FOR FY 2024

1. Vector Monitoring and Control

1.1. PMI Goal and Strategic Approach

The NMCP's malaria strategic plan promotes an integrated vector management strategy, including vector surveillance, insecticide resistance management, IRS, larval source management, and continuous and mass distributions of ITNs. PMI supports all of these interventions except for IRS and larval source management.

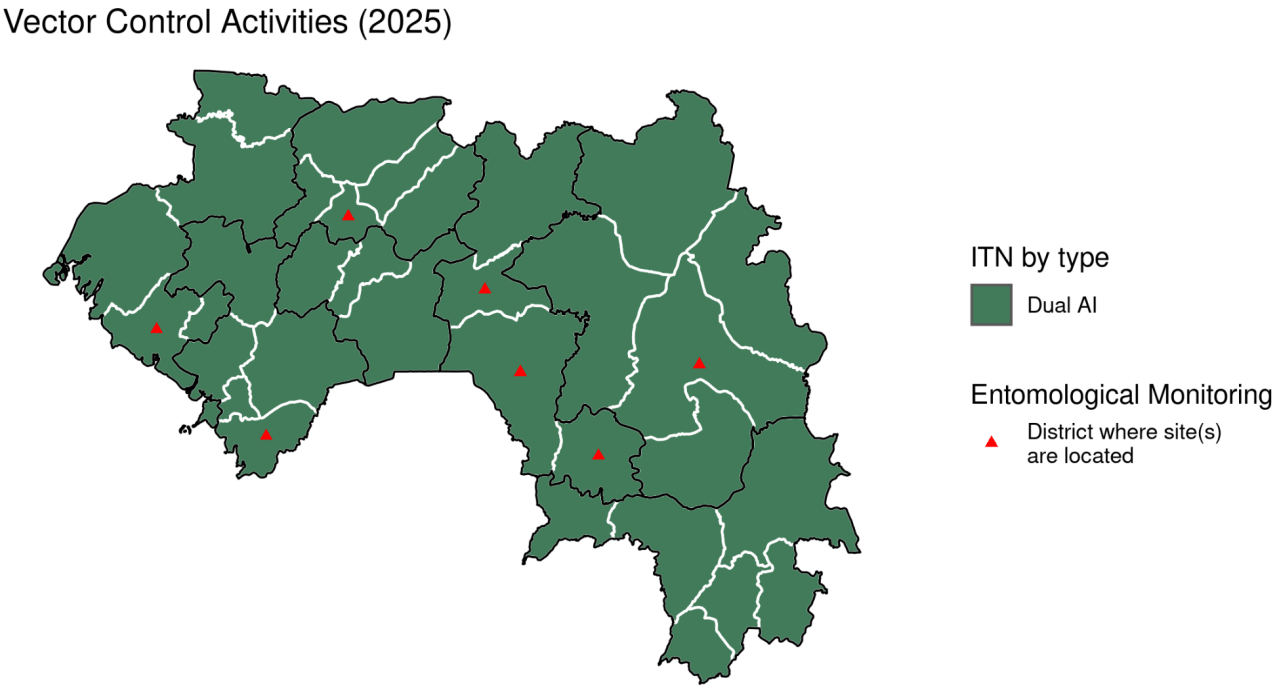
Universal coverage with ITNs is the primary vector control method supported in the country by the Government of Guinea, PMI, the Global Fund, and other partners. Up until CY 2022, only standard ITNs have been distributed in the country. PMI has supported the procurement and distribution of ITNs for both the mass ITN campaign and routine distribution. In CY 2022, PMI also supported the digitalization of the ITN mass campaign and distributed dual AI ITNs in sub-districts of the Forecariah Prefecture. The NMCP is now shifting its strategy to maximize its coverage with PBO ITNs or dual AI ITNs (chlorfenapyr-based ITNs), based on a WHO-supported stratification exercise and bolstered by recent insecticide resistance data showing high resistance levels to all ITN pyrethroids. This approach aligns with WHO and PMI

guidance. For this reason, PMI will support the procurement and distribution of dual AI ITNs (chlorfenapyr-based ITNs).

PMI also supports entomological monitoring activities by 1) conducting longitudinal bionomics monitoring in four village sentinel sites in the Forecariah prefecture to monitor entomological trends in areas that received dual AI ITNs versus areas that received standard pyrethroid-only ITNs; 2) performing a one-time annual insecticide resistance monitoring in seven prefectures (i.e., Boke, Dabola, Faranah, Forecariah, Kankan, Kissidougou, and Labe) with simultaneous supplementary spot checks in six of the seven prefectures (Forecariah excluded) to obtain information on susceptibility levels to different insecticides and some select mosquito indicators where there is no information from longitudinal bionomics surveys; 3) conducting NMCP-led rapid entomological-epidemiological surveys as needed in CY 2025 in response to abnormal signals in routine malaria case data; 4) developing and piloting community-based entomological monitoring in CY 2023 and CY 2024, at the request of the NMCP, to systematize local vector monitoring, and increase Guinea's knowledge base of vector bionomics.

Figure 1 provides a map of the provisional distribution of ITNs and entomological monitoring sites in CY 2025. This map, however, is likely to change. Finalizing ITN distribution is ongoing and new entomological monitoring sites will be selected in CY 2024 and CY 2025 for one-time annual insecticide resistance monitoring with simultaneous spot checks in the country.

Figure 1. Map of Vector Control Activities in Guinea in CY 2025



1.2. Recent Progress (between January 2022 and March 2023)

Progress in CY 2022 entomology activities was significant, including improved knowledge of mosquito bionomics and insecticide resistance status nationally. Please see selected activities and findings, below:

- Shared raw entomology data files (2017-2021) with NMCP for reference and analysis.
- Supported entomological monitoring in seven sentinel sites in seven prefectures, in collaboration/partnership with the NMCP and the district health office. Monitoring activities included insecticide resistance monitoring in seven sites, vector bionomics spot checks in six sites, and longitudinal vector bionomics monitoring in four village sites in the Forecariah prefecture. For more information about entomological monitoring, please refer to the 2022 Entomological Report.
- Provided technical assistance to the NMCP for entomological surveillance and monitoring. Entomological training was provided to NMCP and MoH staff on mosquito identification (in particular *Anopheles stephensi*), trapping, and insecticide resistance testing.
- At the time of writing, the laboratory in Guinea at the Gamal Abdel Nasser University of Conakry is not conducting entomological analysis of mosquito samples and the insectary is not fully functional nor is there a local laboratory in Guinea that is being used for mosquito sample testing. Supported the planning to re-establish of the insectary and laboratory at the Gamal Abdel Nasser University of Conakry. Shared entomology expertise with the NMCP director and prevention unit lead, and the director at the Gamal Abdel Nasser University of Conakry. Planning is still ongoing to make the insectary and laboratory fully functional at the Gamal Abdel Nasser University of Conakry.
- PMI generally supports the procurement and distribution of the most effective ITNs to pregnant women and children under five years of age through antenatal clinics and expanded immunization programs (EPI). In CY 2022, there was a rupture in distribution because 1) it was a mass campaign year, and 2) the NMCP was finalizing their inventory assessment to fulfill AMF requirements and developing a plan to resume the distribution of ITNs via continuous channels. However, since the beginning of May 2023, routine distribution activities have resumed in the PMI-focus districts.
- Supported prevention of malaria in pregnancy (MIP) in accordance with the national policy by providing over 300,000 ITNs via continuous distribution channels before the 2022 mass campaign. The MIP strategy includes providing ITNs at the first antenatal care (ANC) visits.
- Supported and collaborated intensively with NMCP, Global Fund, Against Malaria Foundation, and other partners to conduct the first national digitized bed net campaign in CY 2022, inclusive of population enumeration and distribution using a District Health Information Software (DHIS) 2 field collection tool adapted to the Guinean context. For the campaign, PMI provided 234,900 dual AI nets that were partially distributed in some communes in Forecariah while the remaining quantity is being used for routine

distribution in the same communes. PMI also supported the delivery and distribution of 3,345,550 standard pyrethroid nets provided by the Against Malaria Foundation.
- Supported ITN durability monitoring, by implementing 36-month data collection, monitoring the standard pyrethroid nets from the 2019 cohort.
- Supported facility-community-level SBC activities to improve demand for ITNs, increase appropriate use, promote care, and mitigate misuse. For more information, please refer to the SBC section.
- Provided technical assistance to the NMCP to plan IRS with non-PMI funds and other stakeholders. Despite not having funds to implement IRS, the NMCP continues to express great interest in conducting this activity IRS in coordination with mining companies; while PMI will not provide financial resources for IRS implementation in Guinea, PMI has shared its technical documents on IRS as well as technical documents from the World Health Organization (WHO) as the NMCP continues to try to advocate for support from other donors; PMI/Guinea implementing partner for entomological monitoring has had technical discussions with the NMCP on the matter to provide experience and guidance.

1.3 Plans and Justification for FY 2024 Funding

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

1.3.1. Entomological Monitoring

In FY 2024, PMI will support four principal entomological monitoring activities:

1) Continue performing annual insecticide resistance monitoring in up to eight prefectures with simultaneous supplementary spot checks to obtain information on susceptibility levels to different insecticides and select mosquito indicators where there is no information from longitudinal bionomics surveys;
2) The NMCP has identified community-based entomological monitoring as a priority for vector control in CY 2023 to systematize local vector monitoring and increase Guinea's knowledge base of vector bionomics. Support a pilot in CY 2023-2024 to assess the feasibility of recruiting *Relais Communautaire* (community health extension worker, or RECOs) to conduct entomological monitoring, with the plan to expand in CY 2025 if warranted based on pilot results;
3) Continue to support NMCP-led epidemiological-entomological rapid surveys to investigate unusual signals identified in the routine malaria case data in FY 2025. This will be done under the coordination of PMI's entomological monitoring implementer. Continue to support coordination between the NMCP, district health offices, implementers, and partners to ensure the use of these surveys in decision-making;
4)l Continue to review and update entomology processes and use of data with the NMCP, with greater emphasis placed on better defining the objective(s) of routine entomological monitoring (from CY 2023 to CY 2025). This will include support for training and participation in

workshops, support of technical working groups (TWGs), support for setting up a DHIS2 entomology module, procurement of supplies and equipment as needed, and ongoing support to strengthen capacity at the Gamal Abdel Nasser University of Conakry for in-country mosquito rearing in the insectary, and laboratory analysis of mosquito specimens via training of university staff.

Summary of Distribution and Bionomics of Malaria Vectors in Guinea

Starting in CY 2022, longitudinal bionomics monitoring is only occurring in the Forécariah Prefecture to monitor entomological trends after the deployment of alpha-cypermethrin + chlorfenapyr-based ITNs on entomological indicators. Results from this study have shown that ~85 percent of *Anopheles* identified are *Anopheles gambiae* s.l., making it the most abundant one and the likely primary vector in the prefecture. At the time of drafting this MOP, the determination of the mosquito's specific sibling species in the *Anopheles gambiae* s.l.complex is still being processed. This data will be made available in a supplementary report when the analysis is complete. *Anopheles ziemanni* (15 percent), *Anopheles squamosus* (0.3 percent), *Anopheles nili* (0.05 percent) *Anopheles coustani* (0.03 percent), and other *Anopheles* comprising less than .03 percent were also found, but their role in transmission has not been established in Forécariah yet. Seasonal biting peaks in Forécariah seem to be June to August, but more observation is needed since monitoring just started in June 2022. Based on human landing catches (HLCs), biting seems to be predominately exophagic (60 percent), with peak biting ranging from 11 PM to 5 AM, depending on the site. Exophagic mosquitoes feed outdoors. Studies on preferred resting locations of *Anopheles gambiae* s.l. have not been done, but the indoor resting density by pyrethrum spray catches was 19.5 mosquitoes per house per day in Forécariah in June 2022.

Spot checks in Boffa, Dabola Faranah, Labé, Kankan, and Kissidougou, during the rainy season, have also shown *Anopheles gambiae* s.l as the most abundant *Anopheles* (~91 percent overall; range: ~58 percent in Faranah to ~99 percent in Labé). The compositions of the other *Anopheles* found were similar to those mentioned in Forecariah (i.e. *Anopheles ziemanni* and *Anopheles squamous* were the next abundant *Anopheles*. The overall indoor resting density was 4.7 females per room (range: ~0.4 females per room in Boffa to ~13.1 females per room in Kankan).

Status of Insecticide Resistance in Guinea

In CY 2022, resistance testing was conducted in the sentinel sites of Boffa, Dabola, Faranah, Forécariah, Kankan, Kissidougou, and Labé using the ITNs insecticides, alpha-cypermethrin, deltamethrin, and permethrin (pyrethroid class), and chlorfenapyr (pyrrole class). Because mining companies conduct IRS in some areas of Guinea, the IRS insecticides, pirimiphos-methyl (organophosphate class), and clothianidin (neonicotinoids class) were also tested.

Report of susceptibility: Reportedly, as of 2022, the mortality of *Anopheles gambiae* s.l. after exposure to chlorfenapyr (ITN insecticide) and pirimiphos-methyl was 100 percent in all seven prefectures.

Report of resistance: As of December 2022, in all seven prefectures, resistance to pyrethroids was observed with mean mosquito mortalities ranging from 3 percent to 22 percent at the diagnostic dose; pyrethroid resistance intensity was generally high with resistance observed at 10× the diagnostic dose; pre-exposure to PBO increased the mortality of *Anopheles gambiae* s.l. to alpha-cypermethrin, deltamethrin, and permethrin between 10 percent to 50 percent but did not result in absolute mortality greater than 70 percent. *Anopheles gambiae* s.l. was susceptible to clothianidin in only two of the seven sites (Kissidougou and Labé), possibly resistant in four sites (Forécariah, Boffa, Dabola, and Faranah), and resistant in Kankan (89 percent).

1.3.2. Insecticide-Treated Nets

PMI will continue to support the country for the mass distribution campaign and the routine distribution in FY 2024. PMI will prioritize the procurement of dual AI nets for the 2025 mass distribution campaign, and based on the availability of funds, PMI will support the digitalization of the mass campaign and the distribution in the PMI-focus districts except in Conakry. PMI will support routine distribution in all PMI-focus districts.

Please see the SBC section for details on challenges and opportunities to improve intervention uptake or maintenance.

ITN Distribution in Guinea

ITNs are distributed via mass campaigns every three years, including CY 2022. Continuous distribution channels are: distribution to pregnant women at ANC; distribution to children during vaccination visits through the Expanded Program on Immunization (EPI); and mass distribution via community health extension workers (RECOs, but not limited to them) using a voucher system. Per NMCP, standard ITNs are distributed unless insecticide resistance assay data to all pyrethroids falls under the 98 percent mortality threshold of WHO guidelines and are corroborated by intensity assays. As mentioned above, Forécariah is piloting dual AI ITNs; this is due to high levels of resistance reported to all pyrethroids in the area. Dual AI ITNs were distributed sub-nationally in selected sub-districts as a pilot during the CY 2022 mass ITN campaign and in the ANC and EPI channels from 2022 until the next campaign in CY 2025. In 2022, *Anopheles gambiae* s.l. populations from Guinea had high intensity of insecticide resistance to all pyrethroids. While Figure 1 shows that dual AI ITNs will be distributed throughout the country, the NMCP and partners may still use a mix of PBO and dual AI ITNs for the next ITN campaign in CY 2025, depending on the availability of funding. However,

based on insecticide resistance data, chlorfenapyr-based ITNs may be the ideal net for Guinea.

In CY 2025, there will be a gap of 9,404,752 ITNs for the mass campaign and 166,157 ITNs for continuous distribution. However, discussions with the Government of Guinea and other donors are ongoing to determine their contribution to fill the ITN gap. In the Global Fund Grant Cycle 7, the MoH has requested 6,121,700 dual AI nets for the 2025 mass distribution campaign to cover the needs in their focus zone and has put 2,001,250 dual AI nets in the above allocation. This corresponds to the gap needed to cover PMI focus zones, except for Conakry.

Please refer to the ITN Gap Table in the annex for more detail on planned quantities and distribution channels.

Table 1. Standard Durability Monitoring

Campaign Date	Site	Brand	Baseline	12-month	24-month	36-month
April/May2019	Forécariah	Yorkool® (standard ITN)	Jan 2020	Jun 2020	Jun 2021	Jun 2022
April/May2019	Koundara	PermaNet 2.0® (standard ITN)	Jan 2020	Jun 2020	Jun 2021	Jun 2022

Durability monitoring data collection for the 2019 campaign is complete, but data analysis and writing are ongoing.

1.3.3. Indoor Residual Spraying (IRS)
PMI does not support IRS.

1.3.4 Other Vector Control
PMI does not currently support any other vector control.

2. Malaria in Pregnancy

2.1. PMI Goal and Strategic Approach
PMI's goals are aligned with the 2023-2027 malaria national strategic plan. Intermittent preventive treatment for pregnant women (IPTp) for pregnant women will continue to be provided in health centers and health posts throughout the country. Particular emphasis will be placed on improving the IPTp3 coverage rate. Strengthening collaboration with reproductive and community health programs for training, supervision, supply, and monitoring input

management will continue. The objective is to ensure at least 90 percent of pregnant women at risk of malaria receive at least three doses of IPTp during antenatal care in their last pregnancy by the end of 2027. To this end, the following activities will be carried out: (i) orienting ANC agents and Agents de Santé Communautaires/RECOs on advanced strategies for follow-up and catching up with pregnant women, (ii) RECOs sensitizing and referring pregnant women to the health services, conducting active research (iii) reminding pregnant women and their husbands of ANC appointments by sending them SMS (short message service, or text), (iv) providing health facilities with sulfadoxine-pyrimethamine.

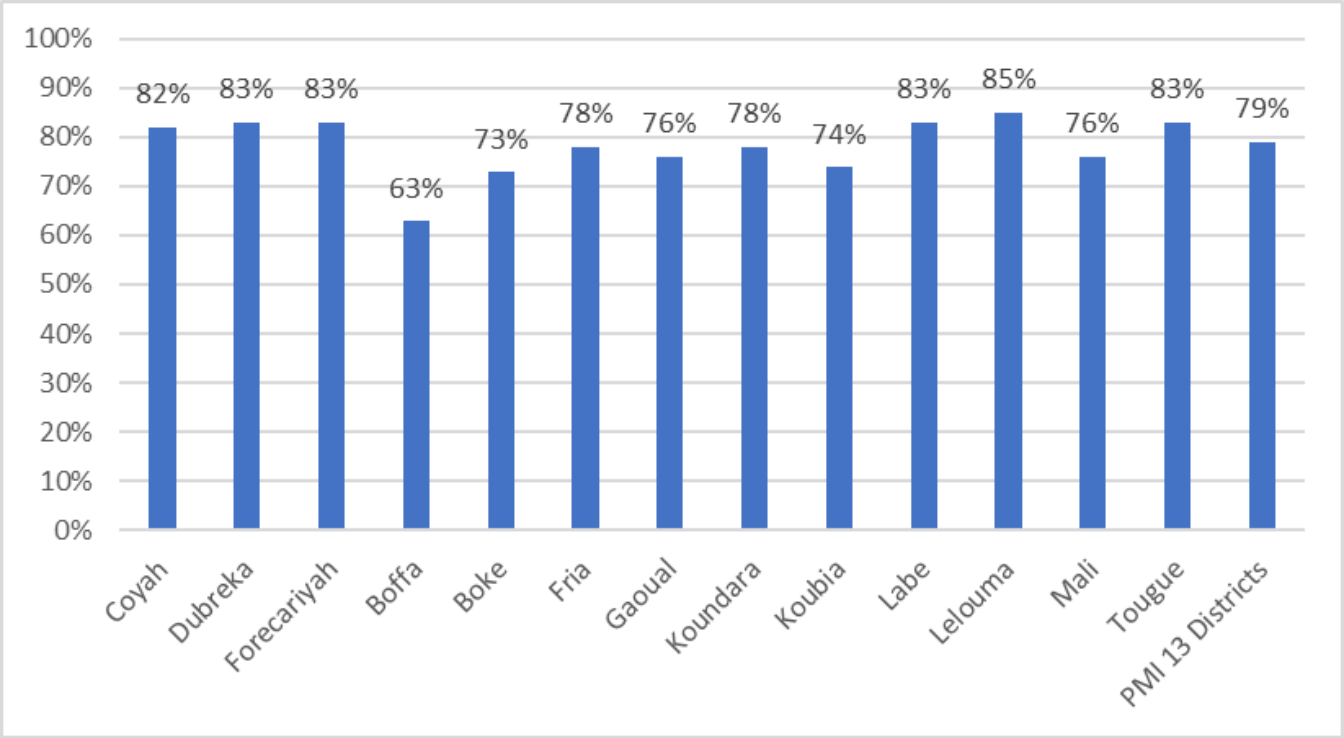
2.2. Recent Progress (between October 2021 and September 2022)

To improve the provision of intermittent preventive treatment (IPTp) of malaria in pregnancy (MIP) during ANC visits, PMI supported the NMCP to conduct on-site training of 208 ANC staff on MIP and use of the ANC data collection tools. PMI distributed 1,071,072 doses of sulfadoxine-pyrimethamine (SP). The project monitored the use of ANC/IPTp services by pregnant women using ANC registers. To promote the importance of IPTp, the project organized roundtable discussions including key stakeholders.To increase uptake of IPTp, PMI also provided refresher training for 888 RECOs who helped refer pregnant women for ANC. The main objectives of this refresher training were (i) Explain the importance of IPTp in preventing malaria for pregnant women and their babies; (ii) Explain IPTp administration protocols (e.g.,when to begin, number of tablets per dose, where pregnant women can receive IPTp, etc.); (iii) Share key message on IPTp promotion; and (iv) Explain the roles of RECOs in improving IPTp uptake (promotion during home visits, referral, etc.).

To strengthen provider capacity to prevent and treat malaria during pregnancy, PMI supported monthly monitoring of ANC/IPTp services used by pregnant women based on the facility's ANC register from October 2021 to March 2022. PMI improved provider supervision and tracking of pregnant women. During the reporting year, PMI financed 186 supervision activities targeting ANC services and IPTp provision during the first two quarters. This activity was not financed during the last two quarters due to the ITNs mass distribution campaign. The supervision visit to health facilities, targeted ANC services to assess the quality of IPTp administration and to help correct issues in the ANC forms.

The proportion of women protected with at least three doses of IPTp in PMI-supported districts is quite high, and surpasses the NMCP target of 60 percent. As shown in Figure 2, the district-level IPTp-3+ coverage in pregnant women attending ANC between January and March 2022 ranged from 63 percent in Boffa to 85 percent in Lelouma, with an average of 79 percent in the 13 PMI-supported districts.

Figure 2: IPTp-3 Coverage of Pregnant Women in the January–March 2022 Cohort in 13 Districts Funded by PMI

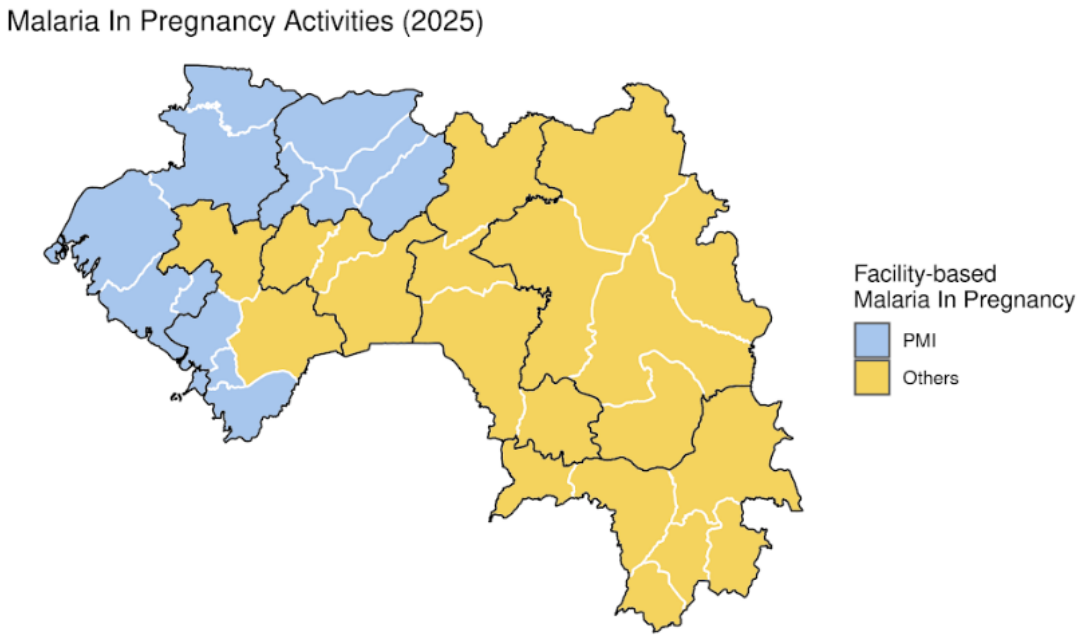


2.3. Plans and Justification for FY 2024 Funding

The FY 2024 funding tables contain a full list of MIP activities that PMI proposes to support.

Guinea will continue to support MIP activities as described in the Recent Progress Section as depicted in Figure 3. PMI is considering additional opportunities for innovative cross health sector interventions benefitting MIP through integrated health programming.

Figure 3: Map of Planned Malaria in Pregnancy Implementation in Guinea, 2025



PMI will continue to fund integrated case management training, including malaria in pregnancy. This training will include health providers in any newly inaugurated health facilities (public, para-public, and private) or any health facilities newly integrated into the HMIS. Training will be followed by post-training monitoring to ensure that competencies are being implemented. PMI will continue to fund RECOs training for active identification and referral of pregnant women to health facilities for ANC and IPTp. The NMCP planned to introduce the use of ACTs during the first trimester for treatment of malaria during pregnancy by 2024 and will continue the case management of uncomplicated and severe malaria as recommended in the national protocol, which is aligned with WHO recommendations

PMI conducted SP resistance marker testing on TES samples. The team also sequenced 869 samples from *Plasmodium falciparum* positive participants in a TES conducted in 2017-2019 in the prefectures of N'Zérékoré, Dabola, Labé, and Forécariah for molecular markers of resistance that included *pfdhfr* (pyrimethamine) and *pfdhps* (sulfadoxine). While all three notable *pfdhfr* mutations were found at near fixation, rates of the key *pfdhps* K540E (3.3-7.7 percent) and A581G (1.1-3.4 percent) mutations were well below WHO thresholds for meaningful SP resistance (prevalence of 95 percent for K540E and 10 percent for A581G). There was no indication of high-level SP resistance in any of these four sites, but SP resistance markers will continue to be included in future molecular surveillance. These results will also inform SMC implementation plans.

PMI has not planned for SP procurement due to the existing collaboration framework between USAID and the Global Fund. In the updated collaboration document, the Global Fund will continue to procure SP to meet national needs.

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

Please see the SBC section for details on challenges and opportunities to improve intervention uptake or maintenance.

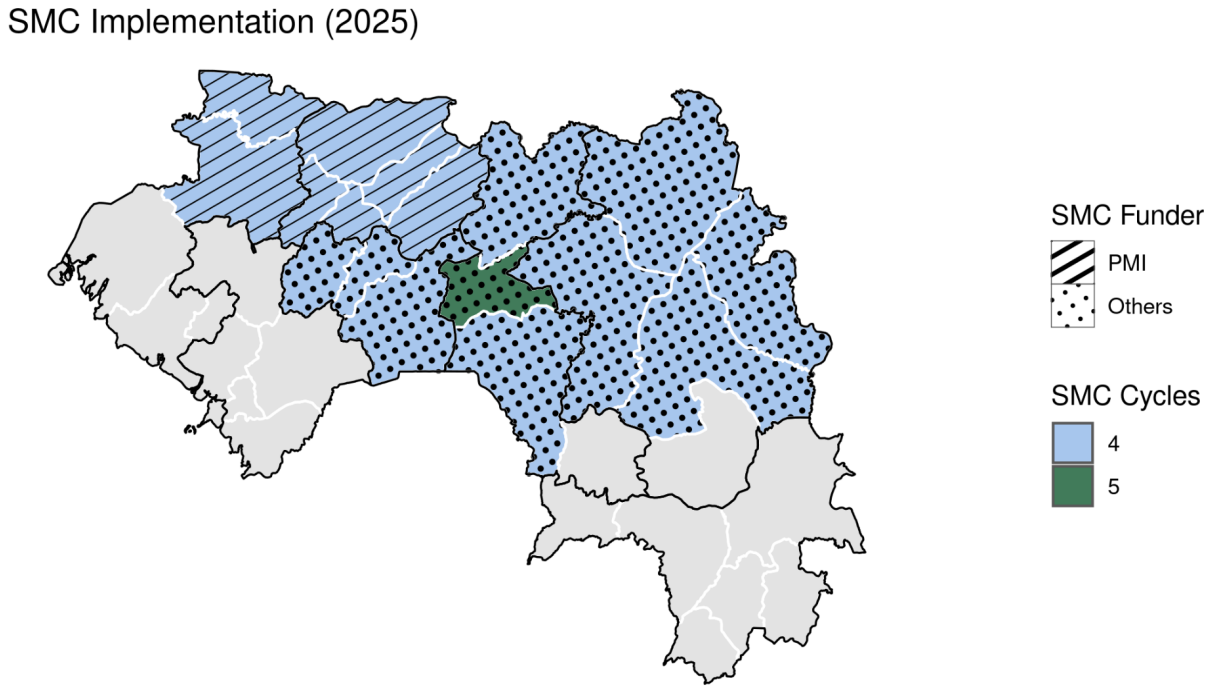
3. Drug-Based Prevention

3.1. Seasonal Malaria Chemoprevention

3.1.1. PMI Goal and Strategic Approach

PMI's goal is to support the malaria national strategic plan. During the implementation of the 2023-2027 strategic plan, one SMC campaign (of 4 or 5 cycles) will be organized per year. These campaigns currently cover 17 health districts, but re-evaluating SMC eligibility based on WHO criteria may lead to new districts being included in future campaigns. The NMCP also plans to use local data to evaluate whether the target population should be extended to include children 5 to 10 years of age and whether some health districts may benefit from a fifth cycle of SMC. For each campaign, a macro-planning will determine the axes of implementation followed by a micro-planning in each district to determine the necessary resources. Integration of SMC with other health activities and SMC campaign digitization will be pursued over the next five years including scaling up in the SMC districts, taking gender, equity and human rights into account. SMC campaigns will be coupled with EPI and ANC catch-up activities to improve vaccination coverage for children and pregnant women. Currently, PMI supports all aspects of SMC implementation, except for procurement of sulfadoxine/pyrimethamine plus amodiaquine (SPAQ), in seven of the 17 eligible districts. The Global Fund provides support for SPAQ procurement to meet national needs and supports implementation in the ten remaining eligible districts. A pilot SMC project extending to a fifth cycle of implementation in Dabola is being supported by the Korean International Cooperation Agency and the Impact SMC Project.

Figure 4. Map of Planned Seasonal Malaria Chemoprevention Implementation in Guinea, Calendar Year 2025



This map shows the prefectures where SMC is implemented with seven prefectures supported by PMI and other 10 prefectures supported by the Global Fund. Whereas most districts conduct four cycles of SMC, a fifth cycle was added in Dabola district as part of a pilot activity targeting approximately 35,000 children from 2021-2023. Continued implementation of a fifth cycle is anticipated, funding permitted, however this is not a PMI-supported district. Preliminary stratification results have shown that adding a fifth cycle in districts where SMC is conducted may be appropriate to provide maximal protection. The NMCP has just received this information and has not yet changed its policy.

3.1.2. Recent Progress (between February 2022 and February 2023)

In 2022, PMI financed SMC, targeting children ages 3–59 months with monthly administration of SPAQ over four cycles in seven districts across two regions. This activity was carried out in all five prefectures of the region of Labé as well as two of five prefectures, Gaoual and Koundara, in Boké Region, from July to October 2022, with a 28 day interval between cycles. Continuing an activity initiated in 2021, during the last cycle in October 2022, the NMCP and EPI programs collaborated to integrate routine childhood vaccination and ANC activities with SMC in the seven targeted prefectures of Labé and Boké Regions.

For the 2022 SMC campaign, PMI supported:

- SBC activities (radio spots, roundtable events and interactive radio programs, advocacy meetings, mobile caravans, and village meetings) focused on demand

generation at the community level.

- Training of 2,337 distribution agents (1,110 women) and 348 social mobilizers on SMC procedures.
- Distribution of SPAQ through a door-to-door SMC campaign, reaching 344,849 children 3 to 59 months of age (out of 339,247 targeted). Ninety-three percent of these children received four cycles. PMI targeted 1,360,584 children in all 17 SMC-eligible districts, and administrative data shows coverage with four cycles exceeded this target (101 percent).
- Approximately 44,000 children in Dabola of 46,112 children targeted (95 percent coverage) received a fifth cycle as part of a pilot project supported by IMPACT SMC.
- Training community health workers to facilitate testing, treatment, and referral of febrile patients for malaria during the four cycles of the SMC campaign in all 17 districts.
- Significant reduction of reliance on paper forms to ensure quality data collection, measure impact of distribution in the community, and make decisions in real time. The NMCP, with the technical and financial support of its partners, opted for a new approach based on using new information and communication technologies for development, a DHIS2-based module for field data collection. During this reporting year, digital data collection was carried out for supervision, independent monitoring, and data collection at the health center level.
- During the fourth SMC cycle in October, vaccination, ANC activities, and testing and treatment for fevers or referral for follow-up care were integrated in the five prefectures of Labé and the two prefectures of Boké. Approximately 16,866 patients were tested for malaria, 4,104 cases were positive and treated except the 160 cases referred. Furthermore, the SMC distributors identified 4,290 children who were not completely vaccinated and 2,641 pregnant women who were not up to date for ANC services. Among the 4,290 children identified, 84 percent received their vaccines. Among the 2,641 women identified, 84 percent received their ANC services. This was done in conjunction with the local Vaccine Alliance (i.e., Gavi, The Vaccine Alliance, formerly the Global Alliance for Vaccines and Immunization) office and Ministries, vaccination, community health, and maternal and child health. Gavi provided financial assistance for this integrated health campaign activity.
- Monitoring activities, including training independent monitors to track 10 households per village during distribution and 30 households per health center after distribution to validate coverage and adherence estimates for each cycle.
- NMCP planning and post-implementation validation meetings.
- SP resistance marker testing on TES samples; see results above in the MIP section.

Figure 5: Catch-up EPI and ANC Immunization Coverage Among Children and Pregnant Women Identified as Having Missing Doses in Households Receiving SMC in PMI-supported SMC Districts, 2022

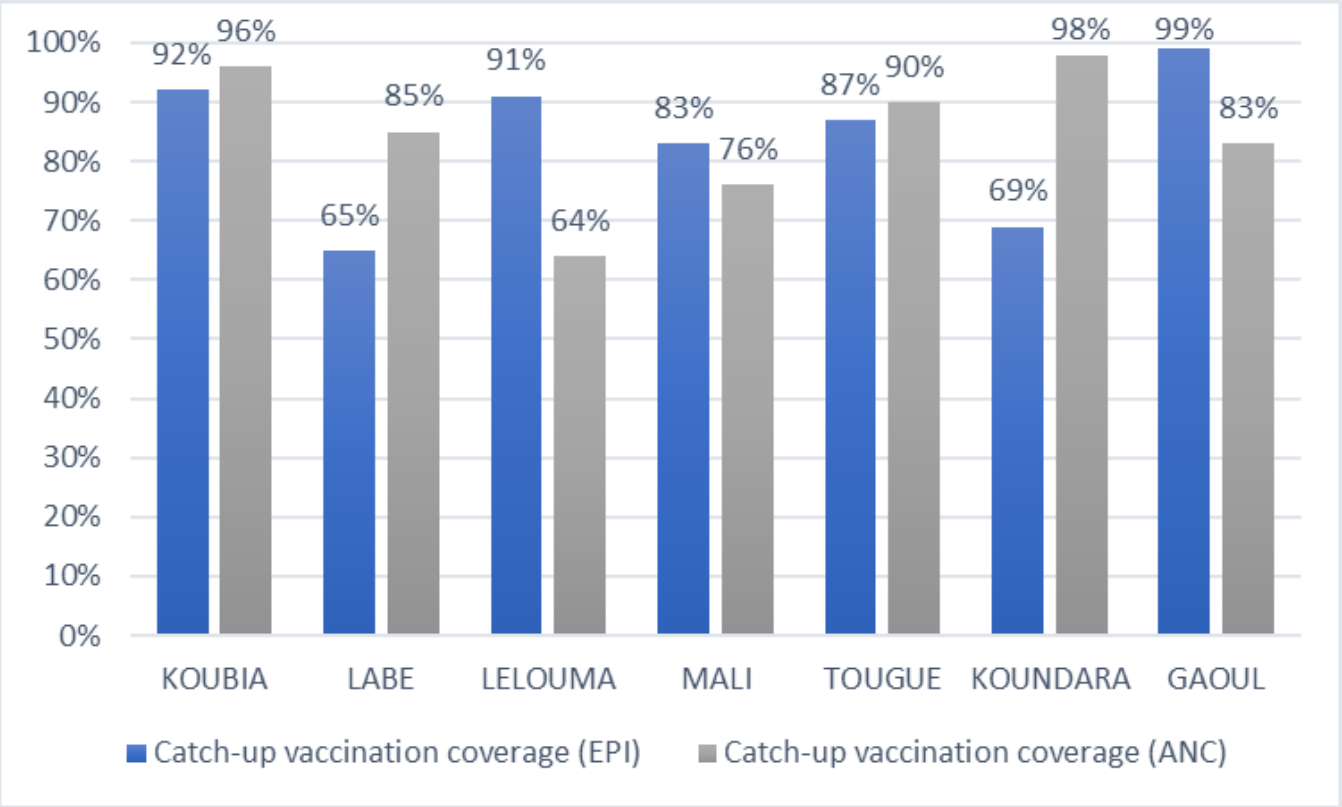


Figure 5 shows results of the 2022 SMC campaign's integrated vaccination activities targeting young children and pregnant women in households receiving the fourth cycle of SMC. The vaccination and ANC cards of children and pregnant women in households receiving SMC were reviewed to identify those who were missing vaccine doses or who were behind on ANC visits. The proportion of these children and pregnant women with missing doses who received catch-up vaccines are shown, by district, in the seven PMI-supported SMC districts in Boke and Labé regions. Vaccination catch-up coverage in children ranges from 65 percent in Labé to 99 percent in Gaoual. Vaccination catch-up on tetanus for pregnant women ranges from 64 percent in Lelouma to 98 percent in Koundara.

3.1.3. Plans and Justification for FY 2024 Funding

The FY 2024 funding tables contain a full list of SMC activities that PMI proposes to support.

Guinea began implementing SMC in 2015 in six health districts in the northern part of the country. The number of districts gradually expanded to seven PMI-supported districts, with ten additional districts supported by Global Fund.

In FY 2024, PMI will continue to support SMC as described above in the Recent Progress section.

Please refer to the SPAQ Gap Table in annex for more detail on the planned quantities and distribution channels.

4. Case Management

4.1. PMI Goal and Strategic Approach

According to the new NMCP strategy covering 2023–2027, case management objectives include: 90 percent of suspected malaria cases receive parasitological testing (i.e., RDT, microscopy); 90 percent of confirmed cases of uncomplicated malaria in health facilities receive proper antimalarial treatment according to national guidelines; 90 percent of severe malaria cases confirmed in health facilities receive correct antimalarial treatment according to national guidelines; lastly, 90 percent of cases of uncomplicated malaria confirmed by community relays receive correct antimalarial treatment within 24 hours.

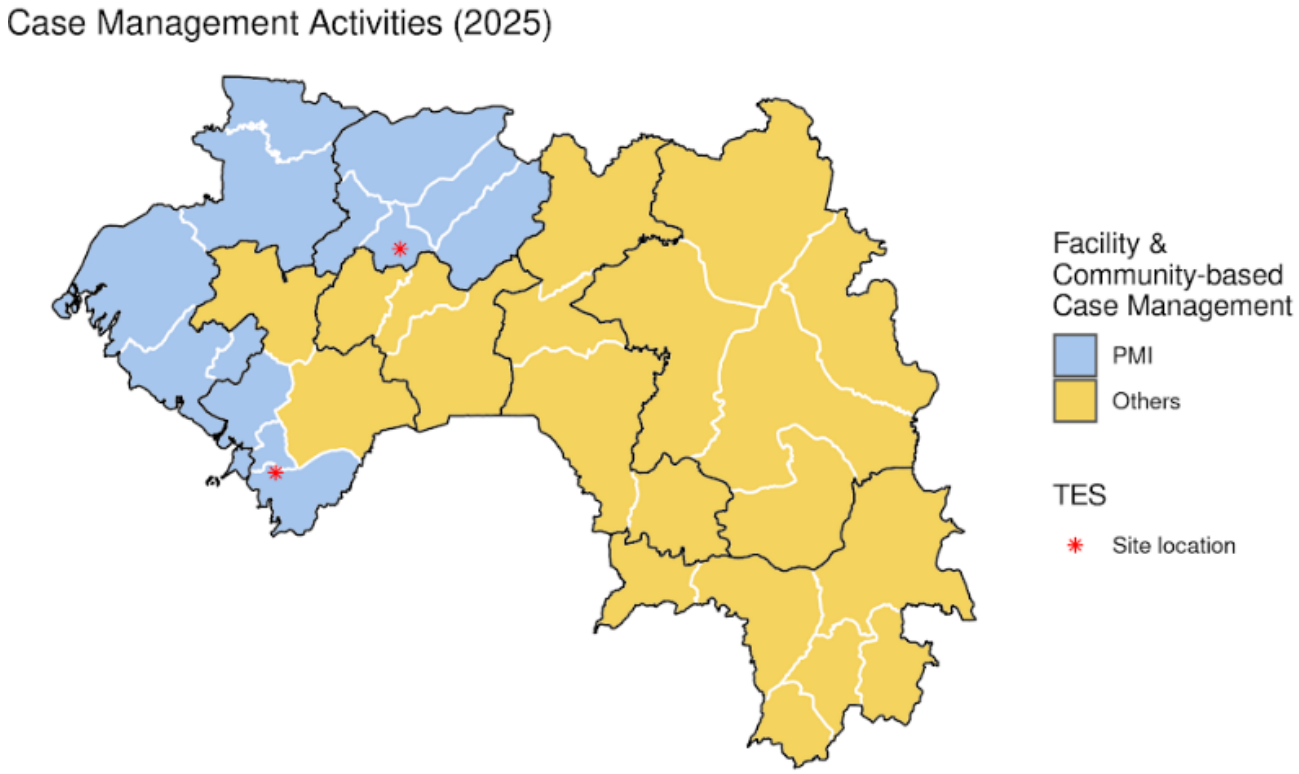
PMI supports regular monitoring of the availability of antimalarial commodities in health facilities to avoid stockouts via eLMIS. Within the framework of integration and sharing, collaboration with other services, programs and partners involved in case management (Directorate of Health Facilities, Reproductive Health, National Reproductive Health, National Laboratory Directorate, etc.) will be improved. These Directorates will be involved in development of normative documents, provider capacity-strengthening, monitoring activities and supervision of the actors.

Malaria community case management is supported within the framework of the integrated package of services of the RECOs. This intervention is conducted in close collaboration with the National Directorate of Community Health and Traditional Medicine and other organizations working at the community level. In order to intensify community-based management of malaria, the NMCP plans to continue to strengthen the capacity of the RECOs and provide them with malaria control commodities. The NMCP will continue to collaborate with the National Directorate of Community Health and Traditional Medicine, health districts and health centers to ensure integrated supervision of community health workers responsible for community-based malaria case management. PMI supports all aspects of this approach through support to national-level policy and programmatic activities, commodity procurement, and community-level health worker performance. Based on the joint framework between PMI and the Global Fund to guide and structure malaria programming, PMI agreed to procure medical products for laboratories and severe malaria, while the Global Fund agreed to procure RDTs, SMC commodities, IPTp medication for pregnant women, and medication for uncomplicated malaria. Additionally, PMI supports outreach training and supportive supervision activities in 18 districts and the Global Fund supports 20 districts (see Figure 6). PMI will also continue to support annual therapeutic efficacy monitoring of four sentinel sites, alternating two sites per year.
Through USAID Guinea's integrated project awarded in December 2022, PMI will continue to fund integrated community-based case management through support to the MoH to train,

equip, and supervise RECOS at a ratio of one RECO for every 650 community members in accordance with the national community health policy. PMI also provides stipends for transportation fees to ensure RECOs can attend monthly meetings and replenish their RDT and ACT supplies. PMI's support for RECOs will be complemented with funding from other USAID Guinea health programs, including maternal and child health and family planning. To better align with Guinea's 2018 community health strategy, PMI is working through the integrated project to set up sustainable systems to replace monthly transportation stipends with reliable RECO salaries using validated government pay schedules. The vision for USAID, PMI, Global Fund, and other partners is to encourage the government of Guinea to pay RECO salaries. Advocacy efforts to date have resulted in a new law, signed in February 2023, that clarifies responsibilities of local and central government to pay salaries. USAID and its partners will continue advocacy efforts to ensure full implementation of this law.

To respond to malaria service delivery challenges due to the COVID-19 pandemic, the NMCP continues to use the draft national guidelines to combat malaria in the context of COVID-19. The differential diagnosis between malaria and COVID-19 is a major concern for providers because of the similarity of the symptoms (e.g., fever, headache, muscle aches, etc.).

Figure 6. Map of Case Management, Community Health and Malaria in Pregnancy Service Delivery Activities in Guinea, Calendar Year 2025



4.2. Recent Progress (between April 2022 and April 2023)

National Level Case Management Activities

- Conducted supervisions of malaria diagnostic activities of laboratory technicians in health facilities, assessing the quality of services provided and reinforcing competencies where needed.
- Conducted on-site training for 1,264 health providers of the facilities identified during supervision visits as needing additional support. Training included various modules to strengthen the health providers' capacities, including ways to increase the use of IPTp during ANC and EPI visits and to conduct integrated malaria case management (which includes routine ITN distribution as well as the treatment of severe malaria using injectable artesunate).
- Collaborated and coordinated with other relevant country government officials, partners, and stakeholders (e.g., Maternal and Child Health, Ministry of Population) and supported national-level coordination meetings (e.g., malaria case management technical working groups, or TWGs).

Commodities

- PMI collaborated with the NMCP, the Central Pharmacy of Guinea and other stakeholders to coordinate delivery and receipt of 270,000 vials of injectable artesunate.
- In addition, PMI distributed 1,622,048 RDTs and 971,003 ACTs to facilities, improving availability of diagnostic and treatment services.
- PMI procured supplies and equipment for RECOs.
- PMI procured laboratory commodities for microscopy and TES support.

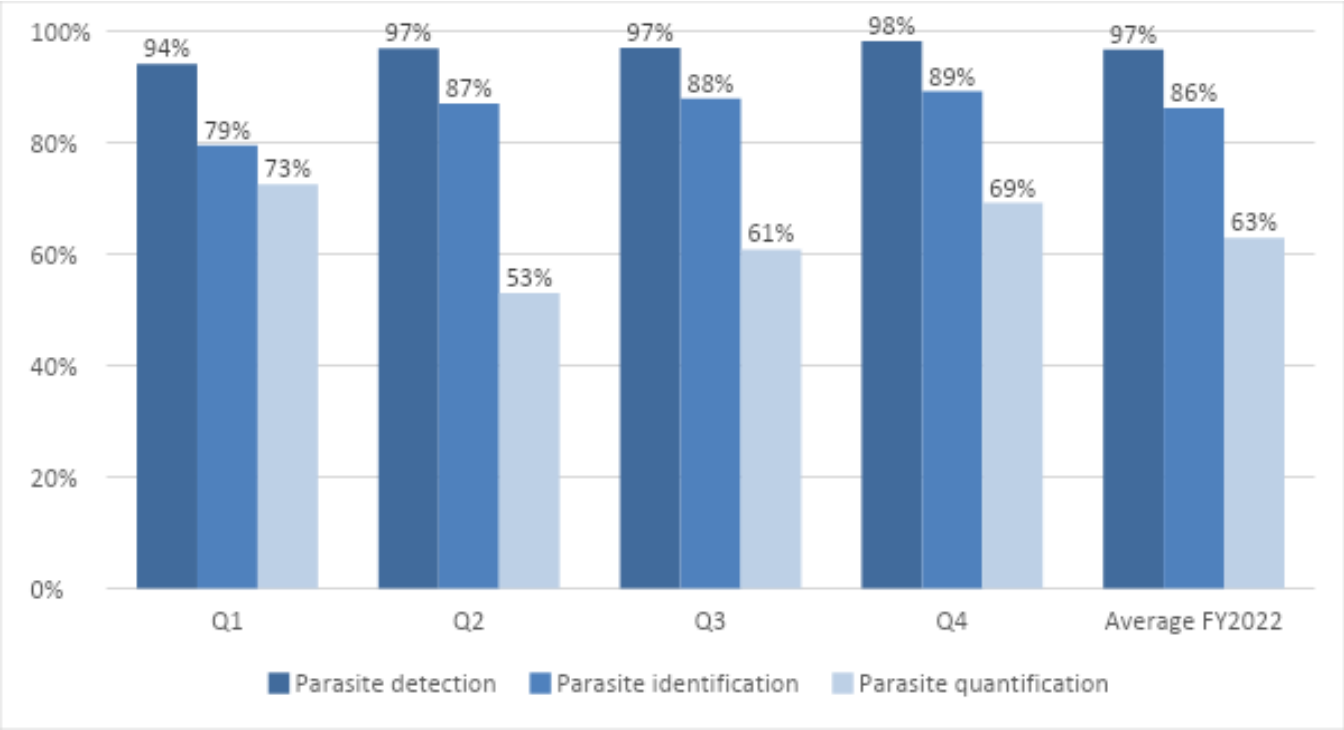
Facility Level

- PMI supported health facility supervisions to assess laboratories' performance. These supervision visits included tests of technicians' diagnostic skills in reading patient slides (Figure 7). Supervision visits covered 58 health facilities and 1,027 laboratory technicians in malaria diagnosis. All supervision results in parasite detection, identification and parasite quantification were above the WHO standard which is 80 percent in detection and identification and 50 percent in quantification. The overall performance in the PMI zone was 97 percent in parasite detection, 86 percent in parasite identification and 63 percent in parasite quantification. For additional detail on microscopy performance over time, please see Figure 7.
- PMI provided on-site training to 1,528 health providers on malaria case management.

Community Level

- Provided routine support (transportation fees, supplies and RDTs/ACTs) to RECOs who conducted home visits, tested 356,446 people for malaria, and treated 149,823 malaria cases.

Figure 7: Monitoring the Evolution of Diagnostic Performance in the Prefectures Supported by PMI in 2022



Note: Performance indicators show results of microscopist readings of real patient blood slides as compared to results reported by an expert microscopist as the gold standard.

Please note that recent progress with monitoring antimalarial efficacy and the TES approach is presented in the Plans and Justification for FY 2024 Funding section below.

4.3. Plans and Justification for FY 2024 Funding

The FY 2024 funding tables contain a full list of case management activities that PMI proposes to support.

National Level Case Management Activities

Below is a list of national-level case management activities planned with FY 2024 funding:
PMI will continue to fund the case management TWG and work with the NMCP to implement a comprehensive quality assurance and control plan for malaria diagnostics, primarily microscopy, at different levels of the health system. This will include refresher training on malaria microscopy, microscope maintenance, and regular supervision of microscopy performance in health facilities, including systematic review of a predetermined number of positive and negative blood smears collected in the health facility, as well use of the NMCP slide bank. Quality assurance and quality control for RDTs, based on observation and supportive supervision of health workers and RECOs, will take place during supervisions.
PMI will continue to finance routine TESs and monitor Guinea's first-line ACTs, artemether-lumefantrine (AL) and artesunate-pyronaridine (ASPY). Results based on efficacy

monitoring of Guinea's first-line ACTs will be generated every two years from four sentinel sites, enrolling patients at two sites one year and the remaining two sites the following year. Funds from the FY 2024 MOP will cover monitoring activities in two sites: Dabola and N'zerekore. Support will also include procuring specialized TES commodities such as filter papers.

Commodities

- Procure injectable artesunate vials for use in public hospitals and communal medical centers.
- Procure rectal artesunate suppositories for use in public and private health centers.
- Procure other diagnostic-related commodities: microscope consumables (syringes, reagents, slides, and maintenance materials for previously purchased microscopes).
- Procure supplies for TES laboratory needs.
- PMI has not planned for the procurement of ACTs or RDTs due to the existing collaboration framework between USAID and the Global Fund.

Please refer to the ACT, RDT, injectable artesunate, and artesunate suppository Gap Tables in annex for more detail on planned quantities and distribution channels.

Facility Level (may include private sector if relevant)

PMI will continue to support refresher training in malaria case management, including diagnosis, treatment of uncomplicated malaria, and referral and management of severe malaria for a portion of public and private health care workers. PMI will finance the supportive supervision of case management practices (inclusive of diagnosis by RDT and treatment) at all levels of the health care system, including public and private hospitals, health centers, health posts, and RECOss in PMI zones using comprehensive malaria-specific supervision tools. PMI will now shift to increase focus on pre-service training and curricula to ensure that new health facility staff begin their careers sufficiently trained in malaria case management.

Community Level

PMI continues to pay travel stipends for RECOs to enable them to restock malaria commodities and participate in monthly data review meetings. PMI resources will be complemented by maternal and child health and family planning resources, reflecting the integrated role RECOs play in their community. USAID Guinea is working with the donor community to find a sustainable solution for the payment of RECOs salaries as recommended by the national policy. Additionally, USAID will continue to work with donors to ensure that local government law signed in February 2023 is enforced. The goal is to find a solution that will allow the government, after a defined period of time, to be fully responsible for the payment of RECOs salaries. While these discussions are underway, PMI will fund travel allowances, equipment, and training for RECOs.

Monitoring Antimalarial Efficacy

Guinea has a total of four fixed sites for therapeutic efficacy monitoring throughout the country: Maferinyah, Labé, Dabola, and Nzérekoré. Normally, two sites are active and rotate every other year. These studies prospectively assess the efficacy of and tolerance to ACTs used for managing simple malaria cases in children with uncomplicated malaria. Currently, TESs evaluate AL and ASPY.

Results: In the September 2021-February 2022 TES in N'Zerekore and Dabola, a total of 420 patients were included in the study at both sites. Of these, 184 (43.8 percent) participants belonged to the ASPY arm and 236 (56.2 percent) to the AL arm. The preliminary results of this study show an adequate clinical and parasitological response rate of 94.2 percent for ASPY in Dabola, 97.3 percent for ASPY in N'Zerekore, 92.6 percent for AL in Dabola, and 97.4 percent for AL in N'Zerekore.

Table 2. Ongoing and Planned Therapeutic Efficacy Studies

Ongoing Therapeutic Efficacy Studies			
Year	**Site name**	**Treatment arm(s)**	**Plan for laboratory testing of samples**
2023	Maferinyah Labé	AL, As-Pyr AL, As-Pyr	• PARMA* Hub in Senegal (1)
2023- 2024	Dabola N'zerekore	AL, As-Pyr AL, As-Pyr	• PARMA Hub in Senegal (1)
Planned TESs (funded with previous or current MOP)			
Year	**Site name**	**Treatment arm(s)**	**Plan for laboratory testing of samples**
2024-2025	Maferinyah Labé	AL, As-pyr AL, As-pyr	PARMA Hub in Senegal (1) or Guinea (2)

AL=Artemether Lumefantrine, As-Pyr=Artesunate-Pyronaridine
*PMI-supported Antimalarial Resistance Monitoring in Africa
[1] Testing is planned to include an expanded list of molecular markers, including *dhfr* and *dhps*.
[2] Pending technology transfer from PARMA-Senegal to Guinea research center.

Please see the SBC section for details on challenges and opportunities to improve intervention uptake or maintenance.

Other Planned Case Management Activities

Guinea will continue to support the planned activities as described in the Recent Progress section.

5. Health Supply Chain and Pharmaceutical Management

5.1. PMI Goal and Strategic Approach

PMI supports the national strategic plan to enable the pharmaceutical system to provide access to malaria diagnosis and treatment to clients at health facilities and the community level. PMI supports the government's strategy through supply chain and pharmaceutical assistance to the National Directorate of Pharmacy and Medicines (Direction Nationale de la Pharmacie et du Médicament [DNPM]), the central pharmacy of Guinea (Pharmacie Centrale de Guinée, Societé Autonome [PCG-SA]), and health facilities to ensure consistent availability of life saving malaria commodities. PMI also procures malaria medicines, ITNs (depending on the availability of funds), and laboratory supplies for the NMCP. PMI is exploring private-sector solutions to public health supply chain challenges, including adopting global standards to trace and track medical products in the national supply chain. The initiative will foster accountability and transparency and mitigate the prevalence of falsified health commodities. PMI is implementing a strategy to reduce stockout rates for all malaria commodities to less than 10 percent at all service delivery points.

PMI's principal supply chain investments aim to improve malaria commodity availability at service delivery sites through forecasting and supply planning, procurement of severe malaria commodities and of laboratory supplies, management information system, warehousing and distribution technical assistance, and technical support for a regional warehouse expansion project. Additional details on Guinea's health supply chain system are available in the country profile.

PMI will provide technical assistance to Guinea's DNPM and strengthen its technical capacity to carry out drug regulatory functions and achieve international accreditation. The National Quality Control Laboratory*, Laboratoire national de contrôle qualité des médicaments* (LNCQM), conducts quality testing of medical products to facilitate decision-making by DNPM. The PMI supports DNPM to ensure the quality of medicines and mitigate the threat of falsified medicines through risk-based post-market surveillance.

5.2. Recent Progress (between October 2021 and September 2022)

PMI has:

- Financed the organization of various coordination mechanisms at the central and regional levels of the supply chain system. These coordination mechanisms aim to ensure an improvement in the availability of health commodities in the country. Specifically, PMI funded eight Supply Chain Management Technical Working Group (TWG-SCM or GT-GAS) meetings of the NMCP aimed at increasing the capacity of the MoH to centralize and harmonize the management of the supply chain, lead allocation of resources for supply chain investments and ultimately promote efficiency in supply chain management for purposes of ensuring greater availability of health products.

- Supported the participation of two technical staff in a training workshop organized in Bujumbura (Burundi) to ensure further understanding of the Quantification Analytics Tools (QAT), especially the concept of forecasting. Benefits of the training include an improved understanding of the difference between supply planning and forecasting, the process flow of forecasting in QAT and the development of the ability to update unit settings. This training activity will enable technical staff of the project to strengthen the capacity of program managers to improve the national quantification exercise, optimize health product procurement and delivery schedules, monitor the stock status of health products, and share data with external platforms and key stakeholders.
- Collaborated with the NMCP, DNPM and DNSFN (*Direction Nationale de la Santé Familiale et de la Nutrition*) to finance and conduct the End-use Verification (EUV) survey. This activity provided an opportunity for selected Pharmacy students trained with PMI funding in health supply chain management at University La Source to develop field experience of the national health supply chain. The results of this survey will be used to develop strategic plans for improving the national availability and monitoring the rational use of antimalarial products health facilities.
- Funded a Data Quality Assessment (DQA) that will determine the average level of supply chain data reliability. Students who benefited from the recent training of health SCM at the University La Source were used as data collectors for this DQA exercise. DQA is a standard tool that assesses the quality of data submitted to the country's eLMIS at all levels of the supply chain, including storage sites and service delivery points (SDPs). To ensure a national representation of results, a sampling methodology using a two-staged approach was used. The relevant results of this exercise are expected to be released after the reporting period.
- Collaborated with MoH to fund Guinea's efforts to improve efficient waste management by organizing the collection of over 76 tons of out-of-use pharmaceutical products in six (6) health regions of the country. These results are in addition to the validation of two strategic documents (*National Guide for the Management of Out of Use Pharmaceutical Products in Guinea* and *National Plan for the Management of Out of Use Pharmaceutical Products*) that will help various stakeholders in the public and private sector to ensure the sustainability of effective national waste management. The documents will also be helpful for the coordination, supervision, destruction, and disposal of out of use pharmaceutical products.

PMI also contributed to the following pharmaceutical and regulatory system strengthening activities:

- Assisted LNCQM in improving its QMS to conform with ISO/IEC 17025 standards and is strengthening its technical analysts' capacity to conduct quality testing per the ISO accreditation roadmap developed last year.
- Supported development and validation of a collaborative framework between LNCQM and DNPM that delineates agreed areas of collaboration and their individual responsibilities. The director of the DNPM participated in LNCQM's first

management review meeting in September, demonstrating his institution's commitment to this agreement.
- Conducted a training on dossier evaluation for DNPM's dossier evaluation committee.
- Procured five pieces of analytical equipment for the LNCQM.
- Trained 47 technical personnel trained on QA and QC topics, and 20 quality documents drafted that are in varying stages of review and approval.
- Provided support to DNPM's PMS-TWG to start implementing the second, risk-based post market surveillance, including support in: (i) Developing the 2022 risk-based post market surveillance protocol and (ii) Procuring minilabs and laboratory reagents for testing.
- Supported the institutionalization of an equipment preventive maintenance program at LNCQM through: (i) Practical training on equipment preventive maintenance, (ii) Developing key protocols for equipment preventive maintenance, and (iii) Developing a list of spare parts for analytical equipment.
- Supported the revision of the testing fees structure at LNCQM to ensure the laboratory is capable of charging fees that would improve its sustainability.
- Provided technical assistance to develop specifications and bid documents for constructing a new pharmaceutical warehouse in Coyah. As a result, MoH successfully launched the Request for Proposal (RFP) and attained a critical milestone in the last quarter of 2022. The new warehouse, upon completion, will increase the Government of Guinea's capacity to store malaria commodities in a temperature-controlled and secure space.

PMI's principal supply chain investments aimed at improving malaria commodity availability at service delivery sites included forecasting and supply planning, eLMIS, warehousing and distribution technical assistance, direct warehousing and delivery of commodities to health sites. In conjunction with these interventions the availability of RDTs commodities increased from a 5 percent stockout rate to a 3 percent stockout rate as well as the availability of injectable artesunate with a decrease of the stockout rate from 49 percent to 21 percent in FY 2021. For ACTs, we only observe a decrease in availability for the adult presentation with a stockout rate increase from 8 percent to 21 percent from 2021. For other ACTs presentations, availability has remained the same over the past 12 months. This could be explained by the change in supply chain managers at the district level due to the arrival of the new authorities, on one hand, and by the change of many stock managers at the delivery points who are not sufficiently equipped to prepare orders, resulting in an underestimation of the quantity of antimalarial products needed in the health facilities on the other hand. The interference of activities such as the ITN distribution campaigns and the maternal and child health campaign was also observed, which did not allow for sufficient formative supervision at the stock delivery points.

5.3. Plans and Justification with FY 2024 Funding

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

PMI will continue to support electronic and physical supply chain and pharmaceutical system strengthening activities with technical assistance as described in the recent progress section.

Another priority for PMI with FY 2024 funding is supporting the MoH's efforts to improve commodity availability and data management at the last mile and achieve effective coordination across all levels of the supply chain.The support will ensure that health facilities have adequate malaria commodities for service delivery within the clinics at the community level, including TA on inventory management and reporting.

The eLMIS remains a critical source of supply chain data for planning and implementation. PMI will continue to support the MoH and health facilities to compile, analyze, and share critical data with stakeholders for decision making. The data improvement activities will include the comparison of eLMIS values and calculations, DHIS2 data, and physical stock data to ensure accountability and rational use of malaria commodities. PMI will continue supporting the triangulation of logistical data and epidemiological data.

PMI will support the semi-autonomous PCG-SA to implement its strategic objectives, including secure and timely delivery of health products to clinics while ensuring accurate inventory management at all storage locations.

Finally, PMI will continue to support improvement of the governance for medical product QA systems and improve country and regional regulatory systems to assure the quality of medical products in the public and private sectors.

6. Social and Behavior Change

6.1. PMI Goal and Strategic Approach

PMI's SBC support to the NMCP's Malaria SBC Strategy fully aligns with and contributes to the attainment of its SBC objectives at the national, regional, prefectural, and community levels. PMI's support is achieved through data-driven, coordinated communication and non-communication interventions deployed across PMI geographic focus areas. Through partnerships with local media organizations, community-based organizations, and collaboration with town criers and community health workers, PMI supports the NMCP's efforts to expand mass media and community level interpersonal communication activities aimed at increasing correct and consistent ITN use and care, prompt care-seeking for fever, uptake of RDT tests and IPTp, and provider adherence to diagnostic results for treatment with ACTs. At the national level PMI provides technical assistance, support for capacity-strengthening activities including for coordination, and the development of materials and relevant guidelines. PMI has supported

the revision of the SBC section in the new Malaria National Strategic Plan (2023–2027). At the district level, PMI continues to support the adaptation of the Malaria National Strategic Plan to local contexts, develop work plans and materials, and support partner coordination efforts.

Finally, PMI supports the generation, analysis, and translation of malaria SBC evidence, through waves of monthly behavioral surveys done during the households visits into easily digestible formats, tailored to multiple audiences and informing near real-time adaptations to ongoing malaria SBC program implementation. For instance, to gauge the effectiveness of SBC activities on prevention, diagnosis, care, and treatment, regional teams and NGO field agents conducted a survey on which mass media communication activities about malaria had reached the communities and on people's level of understanding of the key messages disseminated through these activities. They conducted the survey in 6,904 households in the regions of Boké, Kindia, and Labé. In the Boké region, 79 percent of the households interviewed claimed to have seen or heard a message on malaria on TV or on the radio. The prefecture of Gaoual had the highest rate (97 percent) while Fria had the lowest (70 percent). Among the 79 percent of households interviewed who said they saw or heard a message about malaria in the Boké region, 75 percent said that the message was clear and understandable while 2 percent said that it was incomprehensible.

NMCP's strategic plan aims to reach 90 percent coverage levels in both prevention and case management interventions. There has been significant recent progress in key behavioral outcomes: The proportion of use of ITNs has increased from 19 percent (Demographic and Health Survey, DHS 2012) to 62 percent (EIPAG 2021); the proportion of women who benefited from IPT3+ from increased from 11 percent (DHS 2012) to 36 percent (DHS 2018). To support these objectives, the strategy calls for increased and strengthened interpersonal communication at the individual and community levels; mass media communication, including television, national and local radio, internet, and printed support materials; and social mobilization to increase support from community members and leaders.

PMI finances the technical assistance to the SBC Technical Working Group overseen and convened by the NMCP SBC unit and composed of representatives from other MoH divisions and technical and financial partners working in malaria control. The TWG's role is to assist the SBC unit to better coordinate and harmonize SBC tools, approaches, and methodologies. PMI also finances SBC activities such as community mobilization and interpersonal communication in PMI zones, while the Global Fund supports activities in the remainder of the country. These interventions have contributed to improving the use of services.

6.2. Recent Progress (between April 2022 to April 2023)

To address more than one target behavior, PMI supported the following cross-cutting SBC activities:

- Supported community action groups in conducting 606 group discussions and educational talks to increase knowledge about malaria and promote the practice of

healthy behaviors related to malaria prevention and treatment. These discussions took place in health centers and public places such as soccer fields, marketplaces, hair salons, and sewing salons. These sensitization sessions helped to identify some commonly shared notions that hinder the use of malaria products and services in the communities.The facilitators addressed these concerns with reliable and practical information.

- Worked with the NMCP to review, develop, pre-test, produce, and disseminate a new storyboard for RECOs, civil society organizations (CSOs), and community-based organizations (CBOs) to use during home visits, mobile clinics, group discussions with community action groups, and at health facilities during routine visits. The storyboard was also given to the teams of enumeration agents and social mobilizers for the 2022 ITN mass distribution campaign.
- In coordination with RBM, Speak Up Africa through *Jeunesse Secours*, and CRS**,** supported the April 1, 2022 official launch of the advocacy campaign "On the way to Kigali," a new impetus for the elimination of malaria in the context of the COVID-19 health crisis. This launch marks the start of the new phase of the pooling of activities to combat malaria and neglected tropical diseases (NTDs).
- Used mobile caravans to inform and educate communities during the different phases of the net mass distribution and the SMC campaigns. Mobile caravan staff spread awareness of when the teams were planning to visit and the importance of keeping children ages 3–59 months at home so they would benefit from the first dose of drugs. The staff also explained that, because of COVID-19, mothers and caregivers will give the first dose to their children under the supervision of distributors and then counsel them on the importance of giving their children the additional two doses correctly. This strategy resulted in strong participation in the campaign.

A cross-cutting issue identified in a 2018 study on knowledge, attitudes, and perceptions was access to information on health and malaria prevention or treatment caused by: inefficiency of communication channels; poor choice of sensitization periods (broadcasting times or information about malaria); the non-involvement of local authorities in sensitization; language problems (some workers are unable to communicate well in the local languages of the grassroots populations); illiteracy, and the inaccessibility of radio waves, especially rural radio in some localities.

Significant barriers to access are distance from health facilities, transportation costs, perception of need to pay for care, and women needing permission from their husbands to take children or go themselves for care. Other challenges or barriers to uptake or maintenance of specific behaviors are detailed below.

To specifically increase uptake of IPTp3, PMI:

- Supported the use of SMS to remind pregnant women about their ANC visits in the prefectures of Boffa and Koundara.

- Broadcast radio spots and TV spots on the importance of ANC and IPTp

One challenge related to the adoption and maintenance of early and repeat ANC visits and IPTp is that eligible mothers have difficulty accessing ANC at health centers and certain integrated health posts. On the provider side, challenges include:

- Health workers do not daily update their ANC registers in part due to the lack of information of the outcome of pregnancy and the taking of SP. To remedy this, PMI supported on-the-job training given to ANC providers on how to fill out the ANC register correctly.
- ANC agents did not use the storyboard tool during awareness and counseling sessions. PMI supported formative supervisions focused on explaining the importance of communication between the provider and the patient to help patients understand the benefits of respecting ANC appointments and the dangers of malaria for the pregnant woman and her baby. Also to reinforce the key messages to be conveyed during the awareness sessions.
- Inadequate counseling by providers during ANC visits to encourage women to respect their ANC appointments.

As for challenges around prompt care seeking for fever, it was difficult for SBC activities to reach parents and caregivers of young children, especially those without radios. PMI's use of mobile caravans, as described below, was one approach to mitigate this challenge. Other challenges include:

- Parents do not always believe that fever is serious and in need of care.
- Over-reliance or misuse of traditional treatments or self diagnosis and medication.

Some of the challenges around health worker adherence to case management guidelines include:

- Stockout of malaria commodities and adherence to national guidelines and protocols, especially in hospitals/CMCs and private health facilities.
- Low use of rectal artesunate at the community level leading to the expiration of this drug. As a result, PMI will support the NMCP to disseminate appropriately the national guidelines, organize refresher training and increase on site training specifically on the use of rectal artesunate for children between six months and six years, coaching and supervision visits. This is a priority of the new bilateral project supported by PMI. PMI will also continue to monitor the distribution of malaria commodities and ensure that health facilities and RECOs receive the quantities they have ordered when available.
- Not adhering to or being aware of guidelines that malaria diagnosis and treatment services are free. This perpetuation by providers makes patients or parents think they will have to pay and thus they do not seek care.

To increase regular and correct use of ITNs among families, especially during Guinea's 2022 mass distribution campaign, PMI:

- Produced radio and television spots (public service announcements) that promoted the importance of correct and consistent ITN use for the general population. A total of 2,323 radio spots and 256 television spots were broadcast through 27 public and private radio stations and three television stations. There were also public service announcements about the promotion of regular and correct use of ITNs and care-seeking.
- Supported RECOs in conducting 524,456 door-to-door visits to monitor the regular and correct use of ITNs and, if needed, to hang ITNs and disseminate key messages on IPTp and malaria case management reaching out to 2,227,083 people.
- Carried out of the "School and Religious Leaders against Malaria" strategy through the implementation of 2,500 awareness-raising activities conducted in 596 mosques that promote early seeking care and regular and correct use of ITNs, reaching out 193,656 people (including 56,542 women) and the school peers educators realized 368 awareness activities in 103 schools, reaching out 29,130 girls and 24,449 boys.
- Supported specific messaging on the use of dual insecticide-treated nets as part of the study in selected sub-districts of Forecariah.
- Supported Guinea's 2022 ITN mass distribution campaign, specifically through:
    - Support to the SBC TWG, which focused on preparations for the communication activities
    - Development, pre-testing, and production of communication materials and support materials for all steps of the mass distribution campaign (enumeration and voucher distribution, ITN distribution, and social mobilization
    - A workshop on communicating about the campaign for 106 journalists from the 13 prefectures and the five communes of Conakry. The journalists committed to support the campaign and contribute to the communication of malaria campaign messages.
    - Interactive radio shows that allowed people to call in and report not been visited by the enumeration teams. This allowed enumeration teams to be redeployed to give the households vouchers. The format promoted social norms because listeners who were already enumerated were also called to encourage the community to participate in the enumeration and promote net use.
    - Involved three town criers around each health center in Conakry and equipped them with megaphone to support social mobilization.
    - Collaborated with the *Société Nationale des Chemins de Fer de Guinée* (SNCFG) to intensify communication through the Conakry Express Train. Through the radio on board the train, information on the distribution campaign was read in Poular, Soussou, and Malinké with interpersonal talks led by the speakers to encourage passengers to get ITNs from distribution sites. The radio shows took place during the five days of the distributions at the rate of six broadcasts per day for a total of 30 broadcasts, reaching 31,218 passengers.

Challenges related to net use include:

- Families in selected Forecariah sub-districts for a dual ITN study did not hang new nets. Discussions at the national and district level on how to address this are in process, though funding to re-iterate guidance has not been available at this writing.
- Community members believe that they are allergic to mosquito nets and do not want to sleep under them.

6.3. Plans and Justification with FY 2024 Funding

The FY 2024 funding tables contain a full list of SBC activities that PMI proposes to support.

PMI plans to focus SBC support on early and frequent ANC attendance and prompt care seeking for fever for children under five years of age through mass media and interpersonal communication (e.g., through religious leaders, community action groups, and community health workers).

Table 3. Priority Behaviors

Behavior	Target Population	Geographic Focus	Programming to Address Behavior
Early and frequent ANC attendance	Pregnant women and their family members	13 health districts and 6 communes of Conakry	• Conduct outreach activities in which health care workers provide routine preventive services for eligible populations who have difficulties reaching health facilities. • Continue outreach activities with religious leaders in mosques. • Continue the peer to peer, community, household and health providers level IPC
Prompt care seeking for fever for children under five years of age	Heads of the households, mothers, guardians of children under five years of age	13 health districts and 6 communes of Conakry	• Continue the peer to peer, community, household and health providers level IPC informed by data in prompt care-seeking • Community dialogues to increase demand for services and trust in facilities • Continue outreach activities with religious leaders in mosques. • Provide technical assistance to media stations for production and airing of radio shows and spots to promote prompt care-seeking

IPC: interpersonal communication.

Additional Support Activities:

Guinea's next ITN mass distribution campaign is in CY 2025, so some FY 2024 funds will support associated SBC. It is anticipated that the activities will be similar to those of the 2022 campaign described above.

There is a need to collect more data on the specific behavioral factors for prompt care-seeking and those factors associated with provider behavior for diagnosis and treatment of malaria. Through USAID's new integrated health bilateral, PMI in calendar year 2023 will contribute to a

knowledge, attitudes, and practices survey and focus group discussions (FGDs) with health care providers at both the community and facility level. The FGDs will use the Provider Behavior Ecosystem Map to understand how provider behavior is influenced by system-wide factors-focusing on the need for systemic thinking and incorporating systems adjustments for improved access. The results of the survey and FGDs will further inform FY 2024 programs.

In order to continue needed SBC capacity-strengthening at both the central and decentralized levels -- with increased level of effort at the central level -- with FY 2024 funds PMI will support:

- Technical and financial support to the regular meetings of the TWGs at the national and regional levels. This includes the concept of "National Innovation Teams," which are composed of stakeholders from the MoH and partners in activities to oversee and implement SBC programs in the region.
- Capacity-strengthening of key players and stakeholders for effective SBC design and implementation of activities.
- Work with DPS SBC focal points, religious leaders, and other community actors to validate, test, and broadcast malaria messages on a fully integrated health campaign.
- Capacity-strengthening and supervision of community action groups
- Pilot in targeted communities an adapted version of the "Empathways" tool and the "Community-Clinic Partner Package" which use community dialogues to strengthen links between the community, health providers, and health facilities

7. Surveillance, Monitoring, and Evaluation

7.1. PMI Goal and Strategic Approach

PMI collaborates with the NMCP, WHO, World Bank, Gavi, CRS, RTI and their sub-recipients in providing technical assistance and resources for SM&E activities. Following the NMCP strategy and the SM&E needs, PMI and the NMCP have prioritized a set of data collection, visualization and analysis interventions. These include nationally representative household surveys (DHS/MIS), and health facility surveys. Also included is support to the routine health information system through activities such as harmonizing patient data forms and registers, addressing gaps in data system configuration, documentation, architecture and governance and maintenance of servers. Support for data review and analysis includes activities such as triangulating case, supply chain, and entomology data, support for monthly data review meetings and producing monthly and annual bulletins.

7.2. Recent Progress (between April 2022 and April 2023)

PMI supported the NMCP between April 2022 and April 2023 during a period of several transitions. Notably, a change in the configuration of the national HMIS, its leadership, and incomplete training or alignment with data collection forms and registers resulted in incomplete element and indicator capture nationally during this period. While a national focus on community health is a key focus of NMCP, PMI and other malaria partners, considerations and planning within the national digital health strategy to absorb additional data collected at that

level are needed. Coordination efforts are underway to maximize harmonized activities and sufficient funding per MoH action plans.

PMI supported the following activities at the central level:

- Writing and coordination of the 2018-22 program performance review, including significant updates on issues surrounding data management, intervention approaches, addition of full scope of entomology data (2017-2021).
- Writing and coordination of the 2023-2027 national malaria strategic plan, emphasizing reinforcement of data management, use, triangulation at all levels for patient, supply chain, and entomology activities. Addition of 2022 entomology monitoring and surveillance data.
- The execution of the 2023 WHO sub-national tailoring exercise, which is a refinement of the 2021 HBHI model. Assistance to NMCP in discussing intervention priorities given model results.
- Preparation of NMCP application for GC7
- The production and distribution of field reporting tools for the RECOs to efficiently contribute to an improved reporting of community data in HFs monthly reports for more accurate supply chain visibility
- Given its limited budget, PMI worked with SNIS, NMCP, Community Health, IPs on discussions around collection of monthly aggregate routine data at lower health levels (health post, RECO) to mitigate further physical, documentation, and HR burdens on all aspects of the HMIS.
- The training of national trainers on mass bed net campaign enumeration, distribution, social mobilization, and digitalization
- Participation in and support of technical working groups of the first nationally digitized mass distribution campaign among multi-agency and multi-national partners: planning, information communication and technology for development, M&E, SBC, logistics. This was a significant departure from previous campaigns and done under significant time and funding constraints.
- Supported a technical training of the Information Systems Modernization Service staff of the MoH on the back-end management (e.g., physical infrastructure, digital and physical security, maintenance of back-ups, documentation) of routine DHIS2
- Facilitated meetings of MoH TWGs: case management, prevention, malaria and integrated vector control entomology, patient, logistics M&E, SBC, SMC microplanning.
- Developed and validated monitoring and evaluation tools and communication materials for social and behavioral change campaigns in collaboration with The National Campaign Coordinating Committee (NCCC), a part of the Ministry of Community Health
- Participated in the regional malaria quarterly review meetings
- Provided epidemiologic commentary on, production and dissemination of monthly and annual national malaria bulletins, which impelled necessary discussions with HMIS on element and indicator structure changes in-process.
- Conducted EUV with the MoH through (NMCP and DNPM) during July 2022

- Data Quality Assessment (DQA) of the national electronic logistic management information system (eLMIS) in collaboration with the MoH, PCG
- Supportive training and reinforcement to SNIS, Information Systems Modernization Service, BSD, PCG, NMCP on the interoperability between eLMIS and DHIS2.
- Collaborated with the German International Development Agency (GIZ) to fund the technical training of MoH's Information Systems Modernization Service staff on the management of DHIS2. The 4-week training ensured the participation of representatives from MoH, GIZ, and PMI's implementing partner to gain required competence in the configuration (aggregated data), installation and administration of DHIS2, and the identification of tasks for the daily management of the platform.

PMI supported the following activities at the regional and district levels:

- Quarterly regional data review meetings in four regions (Boké, Labé, Kindia, Conakry), with participation from 13 districts and six Conakry communes.
- Monthly follow-up meetings in health centers and DPS, followed by data quality assessment (DQA) and supportive supervision activities in facilities identified at the monthly meetings as having data aberrations.
- Supportive training and reinforcement on the interoperability between eLMIS and DHIS2 for district data managers, health center staff (medical and pharmacy).
- As part of the national bed net campaign, enumeration and distribution activities in the regions of Boké, Labé in Quarter 3; and Kindia and Conraky in Quarter 4. This necessarily involved an enormous burden of data management, anticipated and not (e.g. civil strife in Conakry). The training of regional and prefectural trainers on enumeration, distribution, social mobilization, and digitalization

7.3. Plans and Justification with FY 2024 Funding

Guinea will continue to support SM&E activities as described in the Recent Progress section. The FY 2024 funding tables contain a full list of SM&E activities that PMI proposes to support.

Table 4. Available Malaria Surveillance Sources

Source	Data Collection Activity	2020	2021	2022	2023	2024	2025
Household Surveys	Demographic Health Survey				P		
Household Surveys	Malaria Indicator Survey	(X)	X			*	
Household Surveys	Multiple Indicator Cluster Survey						*
Household Surveys	Expanded Program on Immunization Survey						
Health Facility Surveys	Service Provision Assessment						
Health Facility Surveys	Service Availability Readiness Assessment Survey	X					*

Health Facility Surveys	Other Health Facility Survey	X					
Malaria Surveillance and Routine System Support	Therapeutic Efficacy Studies	X	X	X	P	P	P
Malaria Surveillance and Routine System Support	Support to Parallel Malaria Surveillance System						
Malaria Surveillance and Routine System Support	Support to HMIS	X	X	X	P	P	P
Malaria Surveillance and Routine System Support	Support to Integrated Disease Surveillance and Response	*	*	*	X*	X*	
Malaria Surveillance and Routine System Support	Electronic Logistics Management Information System	X	X	X	P	P	P
Malaria Surveillance and Routine System Support	Malaria Rapid Reporting System						
Other	End Use Verification Survey	X	X	P	P	P	
Other	School-based Malaria Survey						
Other	Knowledge, Attitudes and Practices Survey, Malaria Behavior Survey					P	
Other	Malaria Impact Evaluation						
Other	Entomologic Monitoring Surveys	X	X	X	P	P	P

*Non-PMI funded activities
↠ Due to COVID-19, the MIS was delayed from 2020 to 2021
X denotes completed activities and P denotes planned activities
HMIS: health management information system

8. Operational Research and Program Evaluation

8.1. PMI Goal and Strategic Approach

The NMCP will conduct impact evaluations of interventions throughout the implementation of the national strategic plan and at the end of 2027. They will focus on the availability and use of services, morbidity, mortality and the socio-economic impact of malaria.The strategic plan's performance framework defines the indicators to be measured, the targets to be achieved, the time periods for achievement and the type of survey to be conducted
PMI is not funding OR/PE at this time.

Table 5. Non-PMI Funded Operational Research/Program Evaluation Studies Planned/Ongoing in Guinea

Source of Funding	Implementing institution	Research Question/Topic	Current status/ timeline
Global Fund	NMCP	TBD	CY 2023

8.2. Plans and Justification with FY 2024 Funding

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

9. Capacity Strengthening

9.1. PMI Goal and Strategic Approach

PMI objectives for health system strengthening activities include training of health workers on case management, supply chain management, health information systems strengthening, drug quality monitoring, and NMCP capacity-strengthening. These contribute to the government's strategy by renewing financial investment and technical commitment to quality malaria care provision, health system resources, personnel, and processes.

9.2. Recent Progress (between April 2022 and April 2023)

PMI provided continued support for capacity-strengthening within the NMCP last year.
PMI also supported NMCP TWGs' monthly meetings. Topics discussed during the year were the organization of the digitized 2022 ITN mass campaign in the COVID-19 context including enumeration and distribution, the 2022 SMC campaign, supply chain monitoring and evaluation, entomology monitoring and evaluation. As in CY 2022, PMI will fund the registration and travel for the NMCP Coordinator to the annual ASTMH conference through CY 2025.

9.3. Plans and Justification with FY 2024 Funding

The FY 2024 funding tables contain a full list of capacity-strengthening activities that PMI proposes to support.

Now that volunteers have returned to Guinea, FY 2024 funds will support a third-year Peace Corps malaria volunteer in CY 2025 to coordinate and support malaria activities.

10. Staffing and Administration

Four health professionals oversee PMI. The interagency team is led by the USAID Health Office Director and her Deputy and consists of resident advisors representing USAID and CDC, and two locally hired experts known as foreign service nationals (specialists in malaria and data). The PMI interagency team works together to oversee all technical and administrative aspects of PMI, 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.

ANNEX: GAP ANALYSIS TABLES

Table A-1. ITN Gap Analysis Table

Calendar Year	2023	2024	2025
Total country population	16,346,879	16,787,755	17,236,717
Total population at risk for malaria	16,346,879	16,787,755	17,236,717
PMI-targeted at-risk population	16,346,879	16,787,755	17,236,717
Population targeted for ITNs	16,346,879	16,787,755	17,236,717
Continuous distribution needs			
Channel 1: ANC	735,610	755,449	775,652
Channel 1: ANC Type of ITN	Dual AI and Single Pyrethroid	Dual AI	Dual AI
Channel 2: EPI	653,875	671,510	689,469
Channel 2: EPI Type of ITN	Dual AI and Single Pyrethroid	Dual AI	Dual AI
Channel 3: School			
Channel 3: School type of ITN			
Channel 4: Community			
Channel 4: Community type of ITN			
Channel 5:			
Channel 5: Type of ITN			
Estimated Total need for continuous channels	1,389,485	1,426,959	1,465,121
Mass campaign distribution needs			
Mass distribution campaigns			10,054,752
Mass distribution ITN type	Dual AI and Single Pyrethroid	Dual AI	Dual AI
Estimated total need for campaigns			10,054,752
Total ITN need: continuous and campaign	**1,389,485**	**1,426,959**	**11,519,873**
Partner contributions			
ITNs carried over from previous year	998,141	998,141	1,298,964
ITNs from Government			
Type of ITNs from Government			
ITNs from Global Fund	1,250,661	1,426,959	0
Type of ITNs from Global Fund	Dual AI and Single Pyrethroid	Dual AI	Dual AI
ITNs from other donors			
Type of ITNs from other donors			
ITNs planned with PMI funding	138,824	300,823	650,000
Type of ITNs with PMI funding	Single Pyrethroid	Single Pyrethroid	Dual AI
Total ITNs contribution per calendar year	**2,387,626**	**2,725,923**	**1,948,964**
Total ITN surplus (gap)	**998,141**	**1,298,964**	**(9,570,909)**

AI: active ingredient; ANC: antenatal care; EPI: expanded program on immunization; ITN: insecticide-treated mosquito net.

Table A-2. RDT Gap Analysis Table

Calendar Year	2023	2024	2025
Total country population	16,346,879	16,787,755	17,236,717
Population at risk for malaria	16,346,879	16,787,755	17,236,717
PMI-targeted at-risk population	16,346,879	16,787,755	17,236,717
RDT needs			
Total number of projected suspected malaria cases	4,258,710	4,208,457	4,158,798
Percent of suspected malaria cases tested with an RDT	94.1%	94.0%	93.9%
RDT needs (tests)	**4,811,221**	**4,946,897**	**5,076,506**
Needs estimated based on consumption data			
Partner contributions (tests)			
RDTs from Government			
RDTs from Global Fund	5,000,550	0	0
RDTs from other donors			
RDTs planned with PMI funding	0	0	0
Total RDT contributions per calendar year	**5,000,550**	**0**	**0**
Stock balance (tests)			
Beginning balance	6,898,507	7,087,836	2,140,939
- Product need	4,811,221	4,946,897	5,076,506
+ Total contributions (received/expected)	5,000,550	0	0
Ending Balance	**7,087,836**	**2,140,939**	**(2,935,567)**
Desired end of year stock (months of stock)	10	10	10
Desired end of year stock (quantities)	4,009,351	4,122,414	4,230,422
Total surplus (gap)	**3,078,485**	**(1,981,475)**	**(7,165,989)**

RDT: rapid diagnostic tests

Table A-3: Artemisinin-based Combination Treatments Gap Analysis Table

Calendar Year	2023	2024	2025
Total country population	16,346,879	16,787,755	17,236,717
Population at risk for malaria	16,346,879	16,787,755	17,236,717
PMI-targeted at-risk population	16,346,879	16,787,755	17,236,717
ACT needs			
Total projected number of malaria cases	4,481,946	4,661,223	4,847,672
Total ACT needs (treatments)	3,450,970	**3,548,287**	**3,641,252**
Needs estimated based on consumption data			
Partner contributions (treatments)			
ACTs from Government			
ACTs from Global Fund	4,210,410	0	0
ACTs from other donors			
ACTs planned with PMI funding	0	0	0
Total ACTs contributions per calendar year	**4,210,410**	**0**	**0**
Stock balance (treatments)			
Beginning balance	2,735,768	3,495,208	0
- Product need	3,450,970	3,548,287	3,641,252
+ Total contributions (received/expected)	4,210,410	0	0
Ending balance	***3,495,208***	***(53,079)***	***(3,641,252)***
Desired end of year stock (months of stock)	10	10	10
Desired end of year stock (quantities)	*2,875,808*	*2,956,906*	*3,034,377*
Total surplus (gap)	***619,400***	***(3,009,984)***	***(6,674,629)***

ACT: artemisinin-based combination therapy

Table A-4: Injectable Artesunate Gap Analysis Table

Calendar Year	2023	2024	2025
Injectable artesunate needs			
Projected number of severe cases	215,390	189,713	159,638
Projected number of severe cases among children	88,310	77,782	65,452
Average number of vials required for severe cases among children	3	3	3
Projected number of severe cases among adults	127,080	111,931	94,186
Average number of vials required for severe cases among adults	9	9	9
Total injectable artesunate needs (vials)	**1,408,651**	**1,240,723**	**1,044,033**
Needs estimated based on HMIS data			
Partner contributions (vials)			
Injectable artesunate from Government			
Injectable artesunate from Global Fund			
Injectable artesunate from other donors			
Injectable artesunate planned with PMI funding	751,735	1,023,972	701,724
Total injectable artesunate contributions per calendar year	**751,735**	**1,023,972**	**701,724**
Stock balance (vials)			
Beginning balance	144,608	0	0
- Product need	1,408,651	1,240,723	1,044,033
+ Total contributions (received/expected)	751,735	1,023,972	701,724
Ending balance	**(512,308)**	**(216,751)**	**(342,309)**
Desired end of year stock (months of stock)	10	10	10
Desired end of year stock (quantities)	1,173,876	1,033,936	870,027
Total surplus (gap)	**(1,686,183)**	**(1,250,687)**	**(1,212,336)**

Table A-5: Artesunate Suppository Gap Analysis Table

Calendar Year	2023	2024	2025
Artesunate suppository needs			
# of severe cases expected to require pre-referral dose (or expected to require pre-referral dose based on # of providers for the service)	66771	58811	49488
Total Artesunate Suppository Needs (suppositories)	**66,771**	**58,811**	**49,488**
Needs estimated based on HMIS data			
Partner contributions (suppositories)			
Artesunate suppositories from Government			
Artesunate suppositories from Global Fund			
Artesunate suppositories from other donors			
Artesunate suppositories planned with PMI funding	25,866	15,925	39,166
Total artesunate suppositories available	**25,866**	**15,925**	**39,166**
Stock balance (suppositories)			
Beginning balance	9,154	0	0
- Product need	66,771	58,811	49,488
+ Total contributions (received/expected)	25,866	15,925	39,166
Ending balance	**(31,751)**	**(42,886)**	**(10,322)**
Desired end of year stock (months of stock)	6	6	6
Desired end of year stock (quantities)	33,385	29,406	24,744
Total surplus (gap)	**(65,136)**	**(72,292)**	**(35,066)**

Table A-6: Sulfadoxine-Pyrimethamine Gap Analysis Table

Calendar Year	2023	2024	2025
Total country population	16,346,879	16,787,755	17,236,717
Total population at-risk for malaria	16,346,879	16,787,755	17,236,717
PMI targeted at risk population	16,346,879	16,787,755	17,236,717
SP Needs			
Total # of pregnant women	735,610	755,449	775,652
% of pregnant women expected to receive IPTp1	95%	95%	95%
% of pregnant women expected to receive IPTp2	85%	85%	85%
% of pregnant women expected to receive IPTp3	77%	77%	77%
% of pregnant women expected to receive IPTp4	73%	73%	73%
Total SP needs (doses)	**2,424,863**	**2,490,262**	**2,556,860**
Needs estimated based on consumption data			
Partner contributions (doses)			
SP from Government			
SP from Global Fund	2,424,863		
SP from other donors			
SP planned with PMI funding			
Total SP contributions per calendar year	**2,424,863**	**0**	**0**
Stock balance (doses)			
Beginning balance	3,200,000	3,200,000	709,738
- Product need	2,424,863	2,490,262	2,556,860
+ Total contributions (received/expected)	2,424,863	0	0
Ending balance	**3,200,000**	**709,738**	**(1,847,122)**
Desired end of year stock (months of stock)	10	10	10
Desired end of year stock (quantities)	2,020,719	2,075,218	2,130,717
Total surplus (gap)	**1,179,281**	**(1,365,480)**	**(3,977,839)**

Table A-7: Seasonal Malaria Chemoprevention Gap Analysis Table

Calendar Year	2023	2024	2025
Total population in the SMC targeted age range	1,195,426	1,226,507	1,258,396
SMC drug (SP+AQ) needs			
National population 3-11 months of age targeted for SMC	239,085	245,301	251,679
National population 12-59 months of age targeted for SMC	956,341	981,206	1,006,717
Total national population targeted for SMC	**1,195,426**	**1,226,507**	**1,258,396**
PMI population 3-11 months of age targeted for SMC	81,814	83,941	86,123
PMI population 12-59 months of age targeted for SMC	327,255	335,764	344,494
Total PMI population targeted for SMC	**409,069**	**419,705**	**430,617**
Total SP+AQ needs (co-blisters)	**5,271,830**	**5,408,897**	**5,549,528**
Partner contributions (co-blisters, national)			
SP+AQ carried over from previous year	1,868,441	1,868,441	1,868,441
SP+AQ from Government			
SP+AQ from Global Fund	5,271,830	5,408,897	5,549,528
SP+AQ from other donors			
SP+AQ planned with PMI funding			
Total SP+AQ contributions per calendar year	7,140,271	7,277,338	7,417,969
Total SP+AQ surplus (gap)	**1,868,441**	**1,868,441**	**1,868,441**

Table A-8: Primaquine Gap Analysis Table

Calendar Year	2023	2024	2025
Total country population	16,346,879	16,787,755	17,236,717
Total population at risk for malaria	16,346,879	16,787,755	17,236,717
PMI-targeted at-risk population	16,346,879	16,787,755	17,236,717
Primaquine needs			
Total projected # of malaria cases	4,481,946	4,661,223	4,847,672
Total projected # of Pf cases			
Total projected # of Pv cases			
Total projected # of mixed cases (Pf + Pv)			
Total primaquine needs (tablets)			
Partner contributions (tablets)			
Primaquine from Government			
Primaquine from Global Fund			
Primaquine from other donors			
Primaquine planned with PMI funding			
Total primaquine contributions per calendar year	**0**	**0**	**0**
Stock balance (tablets)			
Beginning balance		0	0
- Product need			
+ Total contributions (received/expected)	0	0	0
Ending balance	**0**	**0**	**0**
Desired end of year stock (months of stock)	6	6	6
Desired end of year stock (quantities)	0	0	0
Total surplus (gap)	**0**	**0**	**0**