Burundi

Malaria Operational Plan FY 2023

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This Fiscal Year (FY) 2023 Malaria Operational Plan (MOP) has been approved by the USAID Malaria Division and reflects collaborative discussions with the National Malaria Control Program and other partners. Funding available to support outlined plans relies on the final FY 2023 appropriation from the U.S. Congress. Any updates will be reflected in revised postings.

This document was prepared in the early months of 2022 as the COVID-19 pandemic continued to evolve worldwide, including in Burundi. The effects of the pandemic on malaria control and elimination work in 2023 are difficult to predict. However, because U.S. congressional appropriations for the President's Malaria Initiative (PMI) are specific to work against malaria and any appropriations for work against the COVID-19 are specific for that purpose and planned through separate future U.S. Government planning processes, this FY 2023 MOP will not specifically address the malaria-COVID-19 interface and will reassess any complementary work through timely reprogramming in countries.

CONTENTS

ABBREVIATIONS

ABREMA	*Autorité Burundaise de Régulation des Médicaments à Usage Humain et des Aliments*
ACT	Artemisinin-based Combination Therapy
AI	Active Ingredient
AL	Artemether-lumefantrine
ANC	Antenatal Care
CAMEBU	*Central des Achats des Médicaments Essentiels du Burundi*
CDC	U.S. Centers for Disease Control and Prevention
CHW	Community Health Worker
CY	Calendar year
DHIS2	District Health Information Software 2
DHS	Demographic and Health Survey
DSNIS	*Direction Système National d'Information Sanitaire*
ELISA	Enzyme-Linked Immunosorbent Assay
eLMIS	electronic Logistic Management Information System
EPI	Expanded Program on Immunization
EUV	End-use Verification Survey
FP	Family Planning
FY	Fiscal Year
Global Fund	Global Fund to Fight AIDS, Tuberculosis, and Malaria
GOB	Government of Burundi
GS1	Global Standards 1
HBR	Human Biting Rate
HMIS	Health Management Information System
iCCM	Integrated Community Case Management
INSP	*Institut National de Santé Publique*
IPC	Interpersonal communication
IPTp	Intermittent Preventive Treatment for Pregnant Women
IRS	Indoor Residual Spraying
ITN	Insecticide-treated Mosquito Net
LMIS	Logistic Management Information System
MCH	Maternal and Child Health
MIP	Malaria in Pregnancy
MOP	Malaria Operational Plan
MSF	*Médecins sans Frontières*
NMCP	National Malaria Control Program
PBF	Performance-based Financing
PBO	Piperonyl Butoxide

PCR	Polymerase Chain Reaction
PECADOM	*Prise en charge à domicile* (home-based care – malaria community case management for all ages)
PMI	U.S. President's Malaria Initiative
PNSR	*Programme National de Santé de la Reproduction*
ProCCM	Proactive Community Case Management
Q	Quarter
RAS	Rectal Artesunate Suppositories
RDT	Rapid Diagnostic Test
SBC	Social and Behavior Change
SM&E	Surveillance, Monitoring, and Evaluation
SP	Sulfadoxine-Pyrimethamine
TBD	To Be Determined
TES	Therapeutic Efficacy Study
UNDP	United Nations Development Programme
USAID	U.S. Agency for International Development
WHO	World Health Organization

EXECUTIVE SUMMARY

To review specific country context for Burundi, please refer to the Country Malaria Profile, which provides an overview of the country's malaria situation, key indicators, the National Malaria Control Program (NMCP) Strategic Plan, and the partner landscape.

The U.S. Agency for International Development (USAID) delivers cost-effective, lifesaving malaria interventions alongside catalytic technical and operational assistance to support Burundi to end malaria. USAID supports implementation of malaria prevention and treatment measures, as well as cross-cutting interventions in alignment with guidance from the U.S. President's Malaria Initiative (PMI). 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. USAID has been a proud partner in Burundi's fight against malaria since 2010.

Rationale for USAID's Approach in Burundi

USAID is the second-largest donor in Burundi's fight against malaria, with an average annual malaria budget of $8 million that strategically leverages Global Fund to Fight AIDS, Tuberculosis, and Malaria investments to address the country's overall needs. USAID support covers the procurement of malaria commodities, strengthening national capacity for surveillance, monitoring and evaluation; vector control interventions; facility and community-based case management; and malaria in pregnancy (MIP) interventions both in the public and the private sector, targeting malaria high burden provinces.

Overview of Planned Interventions

The proposed FY 2023 USAID malaria funding for Burundi is $8 million. USAID will support the following intervention areas with these funds.

1. Vector Monitoring and Control

USAID supports the Burundi vector control strategy through the routine distribution of insecticide treated mosquito nets (ITNs) at antenatal care (ANC) clinics and immunization services, entomological monitoring, and technical assistance to the NMCP indoor residual spray (IRS) implementation.

With FY 2023 funds, USAID will:

- Procure ITNs for routine distribution for pregnant women attending the first antenatal care (ANC1) visit and children under five years of age.
- Continue to strengthen local capacity in entomology.

- Provide technical assistance for the implementation of IRS campaigns and monitoring the performance of the insecticides used.
- Support insecticide resistance monitoring in nine sentinel sites and support the NMCP-managed insectary which serves to maintain *Anopheles gambiae s.s.* strains, identify *Anopheles* mosquitoes from various sentinel sites, and perform other lab tests.
- Conduct the 12-month data collection for net durability monitoring covering the 2022 mass distribution campaign.

2. Malaria in Pregnancy

USAID supports the full package of MIP activities in the national strategy. Low performance in ANC4 attendance and intermittent preventive treatment for pregnant women (IPTp) uptake led to a rapid assessment conducted in 2021 by the NMCP with the financial support of USAID, the results of which will guide the MIP improvement plan.

With FY 2023 funds, the priorities to continue improving MIP are:

- Support training sessions/refresher training in ANC, MIP prevention, and MIP treatment for facility health providers.
- Organize coaching sessions and supportive supervision for both facility and community providers.
- Print and distribute jobs aids for facility and community providers.
- Focus on service integration for comprehensive care to pregnant women for improved quality of care.
- Improve community health worker involvement in sulfadoxine-pyrimethamine uptake through social and behavior change (SBC).
- Expand digital health at the community level to monitor referral of pregnant women for IPTp and ITNs.

3. Case Management

USAID support is fully aligned with the national strategy on case management, promoting a comprehensive case management strategy, including testing of all cases of suspected uncomplicated malaria, prompt and effective treatment with artemisinin-based combination therapy (ACT), and referral and appropriate treatment of severe malaria at facility and community level.

With FY 2023 funds, USAID will continue to improve the quality of malaria services provided at health facilities and at community levels through:

- Procuring malaria diagnosis and treatment commodities.

- Expanding case management both at public and private health clinics and increasing supervision for both community and facility health providers.
- Strengthening integrated community case management (iCCM) and community case management of malaria for all ages *(Prise en charge à domicile* or PECADOM) in the six U.S. Government-supported provinces.
- Expanding iCCM of childhood illness and PECADOM in the four malaria high burden provinces and roll out proactive community case management at these four provinces.

4. Health Supply Chain and Pharmaceutical Management

USAID's objective is to ensure uninterrupted supply of health commodities in the country.

FY 2023 funds will serve:

- To support the supply chain logistics and pharmaceutical management systems at the national, district, and health facility levels.
- To provide supportive supervision and capacity building at all levels.
- To coordinate efforts with NMCP to improve stock availability at health facilities and community levels.
- To improve the logistics management information system, including the implementation of electronic Logistic Management Information System (eLMIS).
- To conduct an end-use verification survey to assess the stock situation in order to inform quantification and malaria diagnosis and treatment at facility and community level.

5. Social and Behavior Change

USAID's SBC support to the NMCP's malaria SBC strategy fully aligns with the objectives at all levels of the health system.

With FY 2023 funds, USAID will continue:

- To provide technical assistance to NMCP to implement the revised national malaria SBC strategy, with an emphasis on activities geared towards health providers at facility and community levels.
- To implement the new SBC strategy in supported districts.
- To define and monitor measurable indicators for prompt care-seeking for fever for children under five years of age, adherence to case management guidelines, early ANC, and IPTp uptake.

6. Surveillance, Monitoring, and Evaluation

USAID Burundi's support for malaria SM&E is fully aligned with the national strategy and aims to strengthen the decision-maker's capacity and systems to generate, analyze, and use high-quality malaria health information for decision-making at all levels of the health system.

With FY 2023 funds, USAID's support for SM&E technical assistance will include capacity strengthening in accordance with the assessment of SM&E capacity conducted in 2021 by the NMCP, development of protocols, strengthening the SM&E technical working group, developing quarterly malaria bulletins, and contributing to interoperability between systems (eLMIS, District Health Information Software 2, Open Clinic).

I. CONTEXT AND STRATEGY

1. Introduction

USAID has been investing in Burundi's fight against malaria since Fiscal Year (FY) 2010. This FY 2023 Malaria Operational Plan (MOP) presents a detailed implementation plan for Burundi, based on the strategies of the U.S. Agency for International Development (USAID) 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 USAID is proposing build on investments made by partners to improve and expand malaria-related services, including the Global Fund to Fight AIDS, Tuberculosis, and Malaria (Global Fund). This document provides an overview of the strategies and interventions in Burundi, describes progress to date, identifies challenges and relevant contextual factors, and provides a description of activities that are planned with FY 2023 funding. For more detailed information on the country context, please refer to the Country Malaria Profile, which provides an overview of the country's malaria situation, key indicators, the NMCP Strategic Plan, and the partner landscape.

2. Rationale for USAID's Approach in Burundi

2.1. Malaria Overview for Burundi

Malaria is the leading cause of morbidity and mortality in Burundi with 6,158,102 malaria cases reported in 2021, an incidence rate of 606 per 1,000 inhabitants.[1] Malaria incidence generally peaks from March to June and October to December, associated with annual rainy seasons. Malaria is responsible for 14.5 percent of in-hospital deaths, with case fatality among hospitalized patients at 1.1 percent in 2021. The most vulnerable population are children under five years of age and pregnant women. Thirty-two out of the 49 health districts with high incidence (450–269 cases of malaria per 1,000 inhabitants) are located mostly in the north, northwest and southeast. Burundi has faced recent upsurges in malaria cases: the 2017 declared epidemic impacted 23 health districts and in 2019, an upsurge (that passed the epidemic threshold but was not declared as such) affected 36 health districts. The outbreaks consistently occurred in the same districts, in the three northern provinces of Kirundo, Muyinga, and Cankuzo.

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

[1] National Health Information System (*Direction Système National d'Information Sanitaire* or DSNIS), 2021

2.2. Key Challenges and Contextual Factors

Burundi emerged from over a decade of protracted civil war in 2000, with the signing of the Arusha Peace Accord. Burundi's first democratic election after the civil war was held in 2005. However, Burundi faced a new upsurge of political instability and violence in 2015 brought on by a disputed election. The repercussions are still being felt at the socio-economic level, affecting households' financial access to health care and food. Burundi has one of the highest stunting rates in the world at 52.2 percent.[2]

Since the presidential election in 2020, there has been a changing environment toward building peace. Despite this positive context, the health system remains fragile and vulnerable, and had difficulty controlling recent malaria upsurges associated with the two seasonal peaks from March to June and October to December due to weak malaria surveillance systems.

With financial and technical support from USAID, Global Fund, and other donors, the NMCP is implementing a comprehensive package of malaria control activities, including case management, entomological monitoring, mass distribution of and routine distribution of insecticide-treated mosquito nets (ITNs) to pregnant women and children under five years of age, social and behavior change (SBC), and indoor residual spraying (IRS). Burundi's malaria program continues to face challenges, such as:

1. Low quality of case management: Only 73 percent of malaria cases in children under five years of age were treated with artemisinin-based combination therapy (ACT) according to the national protocol while the National Malaria Strategic Plan aims to have 100 percent of children treated according to national malaria guidelines.[3]
2. Low coverage of community-based case management: In 2020, 4,920 community health workers (CHWs) are implementing integrated community case management (iCCM) covering only 40 percent of the targeted population.
3. Low uptake of intermittent preventive treatment for pregnant women (IPTp), 76.6 percent of pregnant women attending antenatal care (ANC) received IPTp1, 65.2 percent received IPTp2, and 50.6 percent received IPTp3+.[4]
4. Frequent stockouts reported at health facilities and district level: 10–28 percent of health facilities reported stockouts of the various presentations of artemether-lumefantrine (AL) on the day of the End-use Verification (EUV) survey.[5]

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[2] Demographic and Health Survey (DHS) 2016-2017
[3] EUV Survey Report 2021
[4] District Health Information Software 2 (DHIS2) 2021
[5] EUV Survey Report 2021

Burundi is in the eastern African zone, close to the region where the new species of *An. stephensi*, which is resistant to traditional malaria prevention methods, has already appeared. This situation calls for rigorous entomological surveillance, especially in urban areas, where this new species is most prevalent.

2.3. USAID Malaria Program's Approach for Burundi

USAID is the second-largest donor in Burundi's fight against malaria, with an average annual malaria budget of $8 million that strategically leverages the Global Fund investments to address the country's overall needs. USAID support targeted routine ITN distribution, and procurement of other malaria commodities (ACT, rapid diagnostic test [RDT], injectable artesunate, sulfadoxine-pyrimethamine [SP], and rectal artesunate suppositories [RAS], each as needed) for distribution nationwide. USAID supports an integrated maternal and child health (MCH)/family planning (FP)/malaria project both at community and public health facilities in six provinces: Kirundo, Karusi, Muyinga, Bururi, Makamba, and Rumonge, including 16 districts, 15 hospitals, and 390 facilities. USAID invests in service delivery provision in the private sector, targeting 250 private and faith-based clinics. USAID supports FP, MCH, and malaria service provision to four provinces: Gitega, Cibitoke, Cankuzo, and Rutana in malaria high burden zones not covered by other donors targeting community interventions.

2.4. Key Changes in this MOP

The FY 2023 MOP budget is largely in line with FY 2022. A key difference from the previous year is that the FY 2022 MOP did not include procurement of RDTs, due to a lack of need based on Global Fund procurement, while a need has been quantified for USAID to fill for FY 2023. In the meantime, the FY 2022 MOP included SP and RAS due to need expressed at that time, but these will not be procured with the FY 2023 MOP funds due to planned Global Fund procurement. It should also be noted that the Global Fund is Burundi's largest investor in malaria control, with a budget of $65,570,729 for the 2021-2023 grant. This funding covers the full range of strategies for malaria control, including procurement of 85 percent of the country's annual malaria commodities, logistical support for ITN mass distribution campaigns, and support for IRS in four districts (for which USAID provides technical assistance). The new Global Fund grant for 2024–2026 development has not started at the time of the writing of this MOP; therefore, the quantities for commodities planned for FY 2024 by Global Fund are not available. Due to budget constraints, USAID will continue to collaborate with United Nations Development Programme (UNDP), the current principal recipient of the Global Fund grant, to cover gaps for commodities with the 2021–2023 budget savings if possible.

Additionally, the FY 2023 MOP includes a line item for a to be determined (TBD) bilateral mechanism that will focus on community-level service delivery and community

health system strengthening. As a part of this focus, USAID will work to enhance the community performance-based financing (PBF) mechanism used by the Government of Burundi (GOB) to incentivize CHWs. While supporting the GOB to enhance the governance of its PBF program and support activities to lay the groundwork for direct compensation of CHWs, USAID will train and incentivize additional CHWs to fill the household coverage gap in the eight highest burden provinces of Kirundo, Karusi, Muyinga, Makamba, Cibitoke, Rutana, Gitega, and Cankuso, based on specific indicators linked directly to the program.

II. OPERATIONAL PLAN FOR FY 2023

1. Vector Monitoring and Control

1.1. USAID Goal and Strategic Approach

The NMCP specific objectives in malaria vector control are to ensure universal coverage through rapid scale-up of cost-effective prevention interventions by 2023:

- At least 95 percent of households have ITNs distributed during mass distribution campaigns.
- At least 95 percent of pregnant women who come for ANC1 receive ITNs.
- At least 95 percent of children coming for measles and rubella vaccination receive ITNs.
- At least 80 percent of children under five years of age sleeping under an ITN.
- At least 80 percent of pregnant women sleeping under an ITN.
- At least 95 percent of households in the target zone receive ITNs during continuous distribution.
- At least 95 percent of households in the target zone are covered by IRS in target areas.

The NMCP's approach to malaria vector control in Burundi refers to two key interventions: 1) ITN provision through both mass campaigns, distribution via the community channel and routine distribution, and 2) the implementation of IRS. Evidence on insecticide susceptibility of vectors from entomological monitoring (supported by USAID since 2015) is used to guide decisions on both IRS products and ITNs in Burundi.

USAID supports the Burundi vector control strategy through procuring ITNs and routinely distributing them at ANC clinics and Expanded Program on Immunization (EPI) channels nationwide. Additionally, USAID provides funding to build capacity in entomological monitoring. Global Fund supports mass campaigns every three years, with the next campaign planned in quarter (Q) three of the calendar year (CY) 2022.

USAID also provides technical assistance for IRS implementation by other partners, including environmental compliance, testing of insecticide resistance, IRS operation standardization across partners in accordance with international standards, and monitoring the insecticide decay on sprayed walls after IRS.

USAID supports nine sentinel sites for entomological data collection, located in Kirundo, Cibitoke, Bubanza, Cankuzo, Ngozi, Rutana, Makamba, Gitega, and Bururi provinces. Monitoring is conducted using three collection methods, including pyrethrum spray catches, U.S. Centers for Disease Control and Prevention (CDC) light traps, and human

landing catches. Since FY 2022, the Global Fund also supports nine sentinel sites: Bujumbura (Isale), Bujumbura Mairie (Bujumbura Nord), Karusi (Buhiga), Kayanza (Gahombo), Muyinga (Muyinga), Mwaro (Kibumbu), Muramvya (Kiganda), Ruyigi (Kinyinya), and Rumonge (Rumonge). These 18 sentinel sites will help the country to have information on vector behavior and insecticide resistance monitoring across the entire country annually.

Figure 1. Map of Vector Control Activities in Burundi

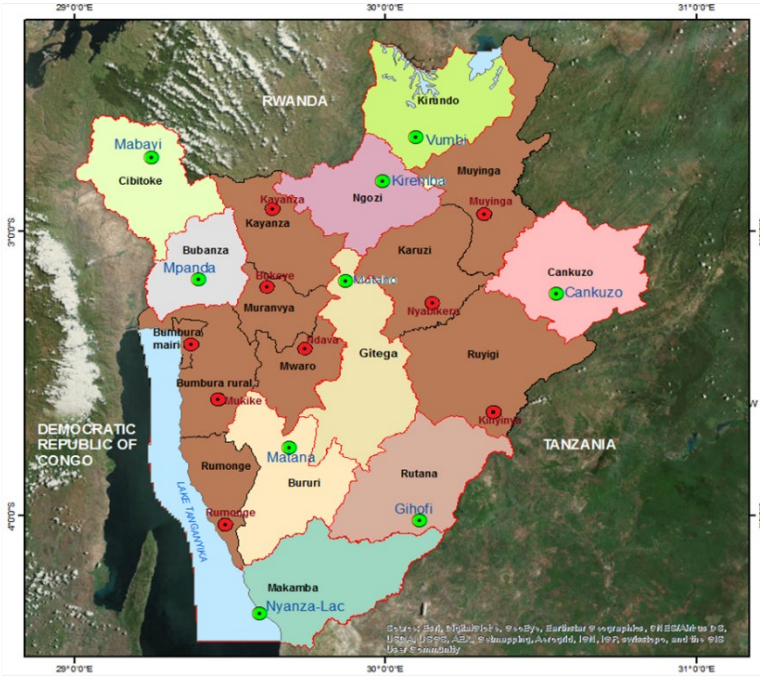

Figure 1 shows the nine sentinel sites supported by USAID for entomological data collection (green dots). They are located in Cankuzo, Gihofi, Kiremba, Mabayi, Matana, Mpanda, Mutaho, Nyanza-Lac, and Vumbi. The nine new sentinel sites in Global Fund-supported sites are shown in red. The implementing partner collects data on a monthly basis on vector species composition, behavior, and susceptibility to insecticides used in vector control in Burundi.

The IRS is conducted in six health districts: Muyinga, Gashoho, Kiremba, and Buye with support from the Global Fund, and in Cankuzo and Murore with support from World Vision International.

The distribution of ITNs through the community is being carried out in two health districts, Giteranyi and Ngozi, with support from the Global Fund.

The 2022 mass distribution campaign targets 43 health districts not covered for IRS and ITN distribution through the community channel.

1.2. Recent Progress (between October 2020 and September 2021)

Entomological Monitoring

During this period of implementation, USAID :

- Supported entomological monitoring activities in nine sentinel sites in collaboration/partnership with the NMCP. Monitoring activities included insecticide resistance monitoring, vector bionomics monitoring, and insecticide residual efficacy monitoring. For more information about entomological monitoring, please refer to the 2020-2021 Entomological Report.
- Supported community-based entomology activities. The VectorLink entomology team involved 18 community members in mosquito collection at each sentinel site. They are in charge of larval survey, mosquitoes captured on humans, mosquitoes captured with CDC light traps, as well as with pyrethrum spray catches.
- Supported activities collecting data on human-vector behavior in the same nine sites.
- Provided technical assistance to the *Institut National de Santé Publique* (INSP) at the NMCP for entomological monitoring. VectorLink and INSP collaborated to create a second insectary located in the INSP office that represents a back-up in the case of flooding or contamination of the susceptible mosquito strain at the Gihanga insectary. A unit at the INSP was refurbished in 2021 with the financial support of USAID.
- Supported NMCP to identify nine sentinel sites for entomological data collection to complement the USAID-supported nine sentinel sites. Vectorlink will continue to provide technical assistance for these sites to become functional.
- Supported SBC activities at all levels to improve demand for ITNs, increase appropriate use, promote care, and mitigate against misuse.

Summary of Distribution and Bionomics of Malaria Vectors in Burundi

According to the 2020–2021 Entomological Report, the primary vectors are *An. gambiae* and *An. funestus*, and the secondary vectors are *An. ziemanni, An. coustani, An. squamosus,* and *An. maculipalpis*. Peak transmission seasons are from March to June and October to December. The biting rating is calculated from direct human biting rate (HBR) and varies over time in sentinel sites. The biting activities were significantly higher outdoors with 0.55 bites/person/hour than indoors with 0.46 bites/person/hour (p= 0.015) for *An. gambiae*. The highest biting rates were observed at Mpanda (Bubanza province) from October to May. The lowest HBRs were observed at Matana (Bururi province), Gihofi (Rutana province), and Kiremba (Ngozi province) during the same October to May period. The preferred resting location is indoors, and the peak

biting time is from 12am to 6am. The preferred host is human. There is a higher abundance of *An. gambiae* over *An. funestus* in all sentinel sites, except at Mabayi, where *An. funestus* is the predominant species.

Status of Insecticide Resistance in Burundi
Insecticide resistance monitoring was conducted in nine sentinel sites from October 2020 to November 2021. Of the nine sentinel sites, Kiremba (Ngozi province) received IRS and the others are the non-IRS sites of Cankuzo (Cankuzo province), Gihofi (Rutana province), Mabayi (Cibitoke province), Matana (Bururi province), Mpanda (Bubanza province), Mutaho (Gitega province), Nyanza-Lac (Makamba province), and Vumbi (Kirundo province) .

The 2020–2021 Entomological Monitoring Report showed resistance of malaria vectors to permethrin in Nyanza Lac with 84 percent mortality. A partial restoration of the susceptibility to permethrin was observed after exposure to piperonyl butoxide (PBO) prior to permethrin with an increase of 13 percent of mortality. A possible malaria vector resistance to deltamethrin was observed in Gihofi with 96 percent mortality; otherwise, the vector is susceptible to pyrethroids at most sentinel sites. The vector is fully susceptible to clothianidin, a mixture of clothianidin and deltamethrin, pirimiphos-methyl, and bendiocarb.

Insecticide-Treated Nets
ITN distribution: In Burundi, ITNs are distributed via mass campaigns every three years. USAID has collaborated with other donors for the macro-planning and the micro-planning for the 2022 mass campaign. The Global Fund is supporting this activity nationwide, including piloting the digitalization of the micro-planning in two districts (Bujumbura Mairie Sud and Kabezi).

The country plans to introduce the dual active ingredient (AI) ITN in its 2022 mass distribution campaign. Based on vector susceptibility to insecticides, three types of ITNs will be distributed as follows: standard nets will cover 13 health districts (Isare, Kabezi, Rwibaga, Bururi, Matana, Rutovu, Bujumbura Centre, Bujumbura Nord, Bujumbura Sud, Kiganda, Muramvya, Fota, and Kibumbu), PBO nets to nine districts (Busoni, Kirundo, Mukenke, Vumbi, Bukinanyana, Cibitoke, Mabayi, Makamba, and Nyanza-Lac), and dual AI ITN will cover 21 health districts (Ruyigi, Kinyinya, Gisuru, Butezi, Rutana, Gihofi, Rumonge, Bugarama, Musema, Kayanza, Gahombo, Nyabikere, Buhiga, Ryansoro, Mutaho, Kibuye, Gitega, Murore, Cankuzo, Mpanda, and Bubanza).

USAID provided technical assistance for the planning of the 2022 mass distribution campaign, which will distribute 6,609,431 ITNs comprised of 1,506,102 standard nets, 1,824,630 PBO nets, and 3,278,699 dual AI nets to 9,824,522 habitants targeted by the mass campaign out of 12,837,743 habitants nationwide. Among the six districts not

covered, there are four (Buye, Kiremba, Gashoho, and Muyinga) where IRS is being implemented and the two covered with continuous distribution (Ngozi and Giteranyi). The mass distribution campaign is funded by the Global Fund in collaboration with Against Malaria Foundation, World Health Organization (WHO), NMCP, UNDP, and subrecipients of Global Fund grants.

Routine distribution channels are fully supported by USAID, focusing on ITN distribution to pregnant women at ANC and at EPI clinics for children under five years of age. USAID supported the procurement and distribution of 632,985 standard nets,128,755 PBO nets, and 203,819 dual AI nets to pregnant women and children under five years of age through routine channels.

Continuous distribution channels supported by the Global Fund consist of net distribution via CHWs using a voucher system in Ngozi and Giteranyi districts.

Durability monitoring

USAID supported ITN durability monitoring, by implementing a 12-month data collection and monitoring of the PBO and standard nets from the 2019 cohort in January 2021.

Table 1. Standard Durability Monitoring

Standard durability monitoring is planned following the 2022 mass distribution as shown in the table below:

Campaign Date	Site	Brand	Baseline	12-month	24-month	36-month
Mass campaign 2019	Kirundo (Vumbi)/ Muyinga (Gashoho)	PermaNet 3.0/ Yorkool	August 2020	January 2021	April 2022	discontinued*
Mass campaign 2022	Kirundo (Vumbi)/ Muyinga (Gashoho)/ TBD Dual AI province	PermaNet 3.0/ Yorkool/ Dual AI	planned	planned	planned	planned

*The country and VectorLink decided to discontinue the 36-months data collection due to potential bias in the endline study given that there will be new nets distributed in 2022 through the mass distribution campaign, six months prior to the end of monitoring.

Indoor Residual Spraying

USAID support for IRS in Burundi is limited to providing technical assistance to NMCP in the planning, implementation, data collection, and protocol/guideline development to ensure the quality of its operation. The majority of the support is related to entomologic monitoring that informs selection of insecticides in IRS.

1.3. Plans and Justification for FY 2023 Funding

The FY 2023 funding tables contain a full list of vector monitoring and control activities that USAID proposes to support in Burundi with FY 2023 funding. Please visit www.pmi.gov/resources/malaria-operational-plans-mops for these FY 2023 funding tables.

1.3.1. Entomological Monitoring

USAID will continue to support entomological monitoring activities as described in the Recent Progress section. This data will feed into the durability monitoring for standard, Dual AI, and PBO ITNs to inform decision-making.

The backup insectarium of INSP will be equipped with the required material in order to establish a susceptible *An. gambiae* Kisumu colony and run enzyme-linked immunosorbent assay (ELISA), reagents will be procured through USAID support. ELISA is an immunological assay commonly used to measure antibodies, antigens, proteins and glycoproteins in biological samples.

VectorLink will continue to provide technical assistance for the nine Global Fund-supported sentinel sites to become functional.

1.3.2. Insecticide-Treated Nets

USAID will continue to support procurement and distribution of ITNs through continuous distribution. USAID also supports SBC to improve use and care of ITNs and to mitigate against misuse. USAID will continue to support standard durability monitoring of three types of nets (dual AI, standard and PBO) to be distributed in 2022.

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

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

1.3.3. Indoor Residual Spraying

USAID will continue to provide technical assistance to NMCP on IRS. Although Burundi's IRS needs are not covered by available funding, USAID Burundi's malaria budget is insufficient to consider investing in IRS implementation at this time; however, the inclusion of IRS implementation would be beneficial to the program.

2. Malaria in Pregnancy

2.1. USAID Goal and Strategic Approach

USAID supports the full package of malaria in pregnancy (MIP) activities in the national strategy. USAID and NMCP collaborate to achieve the NMCP's goal of ensuring the

timely provision of ITNs at the first ANC visit, a minimum of three doses of IPTp starting at the 13th week of gestation, and effective case management of malaria cases during pregnancy. USAID is supporting integrated malaria, FP, and MCH service delivery in 16 of the 49 health districts and in 390 health facilities. As such, the integration of MIP in maternal health care puts women at the center of care to enhance their experience of pregnancy and ensures safe delivery and appropriate care for the newborn.

While the proportion of pregnant women attending ANC1 who received an ITN has increased from 76.3 percent in 2020 to 86.8 percent in 2021, the progress towards uptake of IPTp by pregnant women attending ANC visits remains weak; the Statistical Yearbook 2021 showed that 54 percent received IPTp3+ in 2020 and 50.6 percent in 2021. The under-performance in MIP implementation led to missed opportunities for pregnant women to access high quality services.

While nearly all women attend at least one ANC visit with a skilled provider, there are remaining challenges in the frequency and timing of ANC visits. The ANC attendance rate for a visit in the first trimester increased from 21 percent in 2010 to 47 percent in 2016–17 and 79.5 percent in 2021, according to the Statistical Yearbook. The ANC attendance rate for four or more visits has increased from 33 percent in 2010 and 49 percent in 2016–2017 but decreased at 35.9 percent in 2021. The drop-off of pregnant women between the first ANC and fourth ANC visits limits delivery of a comprehensive ANC package.

To understand the low uptake of IPTp, the Tubiteho project conducted a rapid assessment on Burundi's IPTp implementation strategy. The results of the 2021 rapid assessment on IPTp found that, among the 444 women included in the study, 38.5 percent of pregnant women received IPTp3+, 57.2 percent received at least IPTp2, and 69.9 percent received at least IPTp1 during their pregnancy. Among the 157 health facilities visited, only 100 facilities (63.3 percent) had providers trained on MIP. SP tablets were provided by 36.2 percent of providers not trained on MIP. Stockout of SP tablets on the day of the visit were reported by 31 facilities.

The following recommendations emerged from the assessment: improve the management of SP to avoid stockouts, conduct training sessions on MIP, and provide frequent supervision to providers to increase IPTp uptake, including strategy to improve adherence to ANC visits, extend the MIP services to gynecologist consultation to decrease IPTp missed-opportunities at urban areas, provide full coverage of MIP service provision to pregnant women, and involve CHWs to help in tracing IPTp uptake in the community.

This evidence will allow NMCP and the *Programme national de santé de la reproduction* (PNSR) to develop a roadmap to improve the quality of MIP service, including the

revision of national guidelines around ANC visits, IPTp uptake, the training plan, and the supervision plan by March 2023.

2.2. Recent Progress (between October 2020 and September 2021)

- Conducted rapid assessment on Burundi's IPTp implementation strategy.
- Trained 213 CHWs to conduct interpersonal communication (IPC) sessions towards pregnant women for early ANC visits, reaching 1,664 pregnant women.
- Produced and broadcasted 12 radio programs and three radio spots for mass sensitization on early prenatal consultation, use of ITNs, IPTp uptake.

2.3. Plans and Justification for FY2023 Funding

The FY 2023 funding tables contain a full list of malaria in pregnancy activities that USAID proposes to support in Burundi with FY 2023 funding. Please visit www.pmi.gov/resources/malaria-operational-plans-mops for these FY 2023 funding tables.

USAID will continue to support the full package of MIP interventions and strengthen the quality of care to improve pregnancy outcomes. The specific activities to be financed with FY 2023 funding will include:

- Support the training, coaching, and supportive supervision of health workers in all U.S. Government-supported districts on the ANC core package with an emphasis on malaria and service integration for comprehensive care to pregnant women. The ANC core package includes four main categories of care: identification of preexisting conditions, early detection of complications, health promotion and disease prevention, and birth preparedness.
- Support the printing and distribution of job aids related to the ANC core package to support the training and coaching sessions.
- Support the quarterly supportive supervision of health workers to improve implementation of the directly observed therapy strategy for SP during ANC visits, to adapt and implement evidence-based strategies to motivate pregnant women to attend early ANC visits, to improve ITN and IPTp uptake, and to increase the number of pregnant women attending other ANC visits (e.g., training midwives for group ANC).
- Procure three types of ITNs (standard, PBO, and AI dual) for routine distribution through ANC.
- Strengthen SBC interventions, especially IPC sessions for pregnant women in targeted communities.
- Improve community health workers' involvement in ANC referral to increase IPTp uptake and expand digital health at community level to monitor referral

of pregnant women for IPTp and ITNs from community to facility via the Connecting with Sara mobile application.

Please refer to the **SP Gap Table** in the 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

USAID does not support seasonal malaria chemoprevention and/or other drug-based prevention in Burundi.

4. Case Management

4.1. USAID Goal and Strategic Approach

The NMCP's strategic plan and treatment guidelines promotes a comprehensive case management strategy, including universal, quality-assured parasitological testing of all cases of suspected uncomplicated malaria, prompt and effective treatment with ACT of all cases of parasitologically confirmed uncomplicated malaria, and urgent referral and appropriate treatment of severe malaria at facility and community level. USAID supports all aspects of this approach through support to national level policy and programmatic activities, commodity procurement, and improvement of facility- and community-level health worker performance.

USAID supports nationwide procurement of malaria RDTs, ACTs, and injectable and rectal artesunate, accounting for approximately 40 percent of procured malaria commodities; the Global Fund supports the procurement of remaining 60 percent.

USAID supports integrated malaria, FP, and MCH service delivery in 16 of the 49 health districts and 390 health facilities. Malaria funding supports training and coaching for health care providers at facility and community levels on quality malaria service delivery, strengthening the supervision tools and provision of logistic support to districts for the quarterly supportive supervision visits.

USAID also supports 250 private and faith-based clinics in 14 provinces to offer a high-quality of malaria, FP, and MCH services, including engaging with communities using demand creation agents to promote service availability. Malaria funding supports the capacity strengthening of health care providers through training and coaching sessions on quality malaria service delivery, logistic support to districts for quarterly supervision, and strengthening data reporting in DHIS2.

USAID supports (through equipment, training, and supervision) CHWs trained to deliver community-based case management services that include 1,445 CHWs trained on iCCM, including pre-referral RAS in 16 health districts and 1,962 CHWs who have been additionally trained on PECADOM (*prise en charge à domicile* or home-based care), a strategy of community case management of malaria for all ages, and pre-referral RAS, in nine of these 16 districts. It is planned to expand the PECADOM strategy to nine additional districts. USAID will support community case management through iCCM and/or PECADOM in 25 districts with that planned expansion. Pending that expansion, PECADOM will be implemented alongside iCCM in all but two of the provinces that USAID supports (Rumonge and Bururi, provinces in which community case management of malaria will continue to be delivered exclusively to children under five years of age via iCCM) to tailor interventions high burden provinces.

USAID does not currently provide direct routine payment to CHWs. USAID plans to train and incentivize (through PBF and transportation fees) additional CHWs in the 25 districts while supporting the GOB to strengthen the governance of the PBF program used as the national CHW payment system. The PBF program is funded by the GOB, World Bank, and the Belgium and Netherlands cooperation agencies. The biggest current challenges faced by the community health system are low household coverage, high workload for CHWs, frequent commodities stockouts, insufficient supportive supervision, and insufficient data reported into the Health Management Information System (HMIS) system and poor data quality. USAID is working with the MOH, the NMCP, and other partners to address these challenges.

Figure 2. Map of Case Management, Community Health and MIP Service Delivery Activities in Burundi

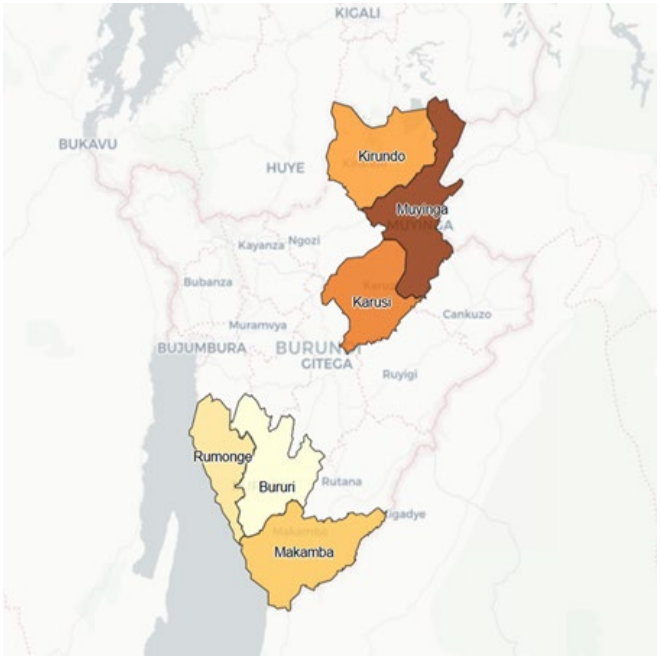

Figure 2 shows the six provinces, including the 16 health districts and 390 health facilities, currently supported by USAID with a focus on MCH/FP/malaria and cross-cutting aspects related to SBC, and delivery provision in public facilities and at the community level.

Table 2. Community Case Management Model by Geographic Area

Province	Districts	Community Case Management Model
Rumonge	Bugarama, Rumonge	iCCM only
Bururi	Bururi, Matana, Rutovu	iCCM only
Makamba	Makamba, Nyanza-Lac	PECADOM+iCCM
Karusi	Buhiga, Nyabikere	PECADOM+iCCM
Kirundo	Kirundo, Busoni, Mukenke, Vumbi	PECADOM+iCCM
Muyinga	Muyinga, Gashoho, Giteranyi	PECADOM+iCCM
Cibitoke	Bukinanyana, Mabayi, Cibitoke	PECADOM+iCCM
Rutana	Rutana, Gihofi	PECADOM+iCCM
Gitega	Gitega, Kibuye,	PECADOM+iCCM
Cankuzo	Murore, Cankuzo	PECADOM+iCCM

4.2. Recent Progress (between October 2020 and September 2021)

USAID has helped the Ministry of Health to achieve progress below:

National Level Case Management Activities

- Developed or updated central level policies (Malaria National Strategic Plan 2021-2027, National Supply Chain Strategic Plan 2021-2025, PECADOM National Guidelines, National Protocol on Mobile Clinics for Harmonization).
- Supported NMCP to hold four malaria coordination meetings as well as four thematic groups meetings to prepare these coordination meetings.
- Supported the *Autorité Burundaise de Régulation des Médicaments à Usage Humain et des Aliments* (ABREMA) to hold nine monthly coordination meetings of the thematic group to share issues around active distribution and discuss appropriate solutions.
- Supported the development of a quality-of-care improvement plan for private clinics.

- Collaborated and coordinated with other relevant country government officials, partners and stakeholders (MCH, Surveillance and Data Systems, Community Health Department).
- Convened and led five national level coordination meetings (technical working groups, advisory board meeting).
- Developed an electronic supervision checklist

Commodities

- Supported the procurement and distribution of 4,942,875 malaria RDTs, accounting for approximately 56 percent of nationwide needs.
- Supported the procurement and distribution of 2,802,120 ACTs, accounting for approximately 40 percent of nationwide needs.
- Supported the procurement and distribution of 811,947 ITNs, accounting for approximately 92 percent of nationwide needs.
- Supported the procurement and distribution of 105,795 vials of injectable artesunate, accounting for approximately 6 percent of nationwide needs.
- Supported the procurement and distribution of 20,072 boxes of RAS, accounting for approximately 100 percent of nationwide needs.

Facility Level

- Conducted two malaria case management in-service training meetings for 80 health care providers from 80 private clinics located in 21 districts in two provinces, Gitega and Ngozi.
- Developed, printed, and distributed the National Malaria Protocol to newly trained providers.
- Trained 71 health care providers from the Kirundo health district on national malaria management guidelines.
- Trained five supervisors in on-site training and supportive supervision.
- Conducted 16 on-site training and supportive supervision visits in 175 public health facilities and eight health districts.
- Conducted 21 on-site training and supportive supervision visits in 65 private facilities through collaboration between private sector associations and district health teams.

Community Level

- Trained 53 trainers on PECADOM from Kirundo and Muyinga provinces.
- Developed and equipped CHWs with tools for their daily work on iCCM and PECADOM.
- Supported active testing and treating by health facility providers via mobile clinics in 46 hard to reach zones in seven districts.
- Conducted 10 on-site training and supportive supervision or mentorship visits reaching 556 CHWs from Giteranyi, Mukenke, and Vumbi health districts

All these activities have contributed to improve the quality of malaria case management and reduce stockout rate at health facilities.

Please note that recent progress with monitoring antimalarial efficacy and the Therapeutic Efficacy Study (TES) approach is presented in the **Plans and Justification for FY 2023 Funding** section below.

4.3. Plans and Justification for FY 2023 Funding

The FY 2023 funding tables contain a full list of case management activities that USAID proposes to support in Burundi with FY 2023 funding. Please visit www.pmi.gov/resources/malaria-operational-plans-mops for these FY 2023 funding tables.

National Level Case Management Activities
USAID Burundi will continue to support national level case management activities as described in the Recent Progress section. With FY 2023 funding, a specific focus will be placed on the following activities to promote and standardize implementation at private sector with national documents:

- Develop the national private sector case management strategy.
- Support the review and update of existing on-site training and supportive supervision materials/checklists.
- Develop a training plan and the program implementation plan.
- Strengthen quality assurance of malaria diagnostics in private health facilities and laboratories through training and professional development and laboratory supervision.
- Support a national workshop for both public and private sectors to share and discuss lessons learned from the implementation of case management activities.

Commodities
To ensure uninterrupted supply of malaria commodities in Burundi, USAID will continue to procure malaria commodities, strengthen the supply chain management support, and provide related technical assistance on forecasting, supply planning, procurement, storage, distribution and inventory management. USAID will also support the EUV survey and electronic Logistic Management Information System (eLMIS) implementation along with other partners. USAID support for commodities leverages the commodities procured by the Global Fund.

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

Facility Level
USAID will continue to strengthen the quality of care in six provinces, including 16 out of the 49 health districts and 390 public health facilities through its integrated malaria, FP, and MCH service delivery project.

Additionally, USAID will continue to expand and strengthen the quality-of-care in private clinics, reaching 250 health facilities. The support includes capacity strengthening through training and coaching of private health care providers on quality service delivery, printing and distributing related job aids, strengthening the capacity of the district teams by updating the supportive supervision materials and checklists, and providing logistic support to districts for quarterly supportive supervisions. USAID will continue to support the quality-of-care improvement plan both for public facilities and for private clinics.

Community Level
USAID will continue to strengthen the quality of PECADOM, as well as iCCM and pre-referral RAS for severe malaria, with training and supportive supervision of community health workers in eight malaria high burden provinces.

USAID will work in collaboration with NMCP and other donors to strengthen community systems and increase CHW performance, including filling the gap of CHWs where needed through recruitment, ensuring regular supportive supervision for capacity strengthening, ensuring availability of commodities, collection and validation of data, and strengthening the referral system especially for the consistent management of severe malaria cases.

While supporting the GOB to increase the governance in managing the funds for the PBF program for the CHW payment, USAID will support training for CHWs who will be newly trained to deliver PECADOM services in four provinces in order to increase CHW saturation and provide financial incentives through the PBF program. It is estimated that USAID will be training and providing PBF incentives for 750 CHWs. Malaria funds used for these financial incentives will make up approximately 25 percent of USAID's support for CHW incentives, which will be complemented by MCH and FP funds. This integrated funding situates the estimated monthly cost of $150 per CHW group (comprising 5–10 CHWs), 25 percent of which is well within USAID Burundi's malaria budget. Concurrently, USAID will support activities to lay the groundwork for alternative compensation schemes for CHWs, including a feasibility assessment of routine salaries or stipends in order to ensure future sustainability of the CHW system.

USAID/Burundi also plans to support the roll-out of Proactive community case management (ProCCM). Beginning in FY 2022, USAID plans to support a gradual roll-out of ProCCM. The approach will be implemented in three provinces in the northern

Provinces (Kirundo, Muyinga, and Karusi) classified as malaria very high burden zones. These are also areas where mobile clinics (active testing and treatment by health providers to hard-to-reach zones during peak season) are currently implemented, and the ProCCM approach will enable continuous proactive case management services in these areas.

Monitoring Antimalarial Efficacy

USAID does not plan to support any TES as they are funded by WHO as described in Table 3.

Table 3. Ongoing and Planned Therapeutic Efficacy Studies

Ongoing TES funded by WHO			
Year	**Site name**	**Treatment arm(s)**	**Plan for laboratory testing of samples**
2021	Buhiga (Karusi), Mutoyi (Gitega), and Kigobe (Mairie de Bujumbura)	AL*	Measurement of parasitological efficacy by thick drop at the site laboratory Polymerase Chain Reaction (PCR) analysis at *Institut Pasteur* (Paris, France)
Planned TESs (funded by WHO)			
Year	**Site name**	**Treatment arm(s)**	**Plan for laboratory testing of samples**
2023	Buhiga (Karusi), Mutoyi (Gitega), and Kigobe (Mairie de Bujumbura)	AL*	Measurement of parasitological efficacy by thick drop at the site laboratory PCR analysis at *Institut Pasteur* (Paris, France)

*AL: artemether-lumefantrine

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

5. Health Supply Chain and Pharmaceutical Management

5.1. USAID Goal and Strategic Approach

USAID's objective is to ensure uninterrupted supply of health commodities in the country (see description of Burundi's supply chain system and strategy in the Burundi Malaria Profile). The support includes procurement and supply chain management support to the Ministry of Health as well as providing related systems strengthening technical assistance for comprehensive supply chain management. As part of PMI's stockout reduction strategy, USAID Burundi is pursuing a stockout target of less than 10 percent.

5.2. Recent Progress (between October 2020 and September 2021)

USAID's principal supply chain investments aimed at improving malaria commodity availability at service delivery include:

- Forecasting and supply planning by supporting the NMCP for malaria commodities quantification, setting timeline for procurement in conjunction with UNDP/Global Fund, working closely with ABREMA for products reception and storage at *Central des Achats des Médicaments Essentiels du Burundi* (CAMEBU), the central storage warehouse.
- Improving the stock management at all levels by strengthening Logistic Management Information System (LMIS) and providing technical support for the eLMIS implementation.
- Warehousing and distribution technical assistance by working with CAMEBU to establish and share the quarterly distribution timeline in the districts and providing logistic support to CAMEBU for that distribution.
- The technical assistance also consists of supporting the biannual inventory at CAMEBU and quarterly inventory at district levels, and logistic support to ABREMA and districts for supportive supervision.

Although stockout of key malaria commodities at the community level remains a concern, there was a recent increase in the availability of these commodities at the facility level. The stockout rate at service delivery points has decreased from 1.8 percent in Q4 FY 2020 to 0.9 percent in Q4 FY 2021 mainly due to active distribution of malaria commodities. The active distribution is a push system, in which the national medical store organizes on a regular basis, the distribution of district commodities based on their needs to reduce stock out at service delivery point.

- USAID provided technical and financial support to the NMCP to conduct the EUV surveys for evidence-based decision-making related to malaria commodities at services delivery points and district levels.
- USAID provided technical assistance to the Ministry of Health to plan for eLMIS implementation, including development of selection criteria for an appropriate eLMIS software.
- USAID provided technical assistance to ABREMA for the development of a comprehensive operational plan for Global Standards 1 (GS1) compliance, including the incorporation of GS1 into the eLMIS in order to improve the quality assurance for malaria commodities.
- Convened and led four national level coordination meetings (technical working groups, eLMIS advisory board meeting) which led to a consensus on the eLMIS Implementation Revised Roadmap CY 2022–2023.

5.3. Plans and Justification with FY 2023 Funding

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

FY 2023 funding. Please visit www.pmi.gov/resources/malaria-operational-plans-mops for these FY 2023 funding tables.

USAID will continue to support all activities as described in the Recent Progress section with emphasis on eLMIS implementation, community-level drug availability, and a replenishment system to strengthen the supply chain management at country level. USAID will be supporting a National Supply Chain Assessment in 2022. The results will inform future planning to strengthen the supply chain system.

6. Social and Behavior Change

6.1. USAID Goal and Strategic Approach

USAID's SBC support to the NMCP's malaria SBC strategy fully aligns with the objectives for all levels of the health system. USAID's support is achieved through coordinated communication and non-communication interventions deployed across USAID geographic focus areas. Through partnerships with local media organizations, community-based organizations, and collaboration with community volunteers, USAID supports the NMCP's efforts to expand mass media and community-level IPC activities aimed at increasing correct and consistent ITN use and care, prompt care-seeking for fever, uptake of IPTp, and provider adherence to diagnostic results for treatment with ACTs, as well as SP provision to pregnant women starting at their second trimester of pregnancy. At the national and district levels, USAID provides technical assistance, support for capacity strengthening activities, including for coordination, and the development of materials and relevant guidelines.

USAID plans to support ongoing efforts to revise the national SBC strategy with more emphasis on interpersonal communication and other relevant guidelines to align with the NMCP strategic plan 2021-2027.

At the district level, USAID continues to support the adaptation of the national SBC strategy to local contexts, develop work plans and materials, and support partner coordination efforts.

Recent Progress (between October 2020 and September 2021)
To increase correct and consistent ITN use and care, prompt care-seeking for fever, uptake of IPTp, following interventions were implemented toward the population.

- Mass media
    - Supported 12 community radio stations to produce and broadcast a radio spot on the theme of "Zero Malaria Starts With Me."
    - Supported the production and broadcasting of two additional radio spots focused on malaria prevention as part of COVID-19.

    - Supported the production of a radio drama “Agashi” to disseminate key health messages, such as messaging to promote the use of ITNs.
    - Conducted an awareness campaign to promote early care-seeking and ITN use during malaria seasonal peaks in high transmission areas through theaters groups, road shows, and outreach messages on early consultation in case of fever and demonstration of net use.
    - Produced video messages to combat misinformation about malaria.

- Interpersonal communication

    - Produced and distributed books with malaria awareness messages targeting individuals.

- Community mobilization

    - Developed outreach messages focused on proper net use and early care-seeking for use by CHWs during outreach activities.
    - Developed awareness messages to accompany the malaria active test and treat campaign in hard to reach zones.
    - Reinforced community dialogue sessions in Kirundo, Muyinga, and Karusi provinces. Community leaders were trained on the community dialogue approach by the NMCP, and small group discussions were conducted based on issues identified in the communities by community themselves. Each group has a roadmap based on identified health issues, including malaria, solutions to solve them, timeline for solutions implementation, and regular assessment.
    - Conducted social mobilization during the celebration of World Malaria Day.

- Information data collection activities and communication technology

    - Introduced a digital health tool for SBC in two health districts of Buhiga et Nyabikere.
    - The digital tool, named Connecting with Sara, enables tracking and monitoring of beneficiaries, including their health referrals. Ninety-eight CHWs were trained to track and interact with beneficiaries via cell phone. The intervention is now focusing on access to and use of nets by pregnant women and children under five years of age in households. After a home visit, CHW refers eligible people to pick up the nets at the health facility, ensure they get them, and send messages on proper net use between home visits.

- Capacity building

- Coached 120 community leaders from Kirundo, Muyinga and Karusi provinces on community dialogue implementation to increase adherence to malaria prevention methods.
- Trained 202 CHWs from the Vumbi and Mukenke districts on interpersonal communication techniques.

Due to the COVID-19 context, not all of the planned activities were implemented because of the implementation of prevention measures, gathering people with road shows, theaters, and IPC were reduced in 2021; only radio spots were used.

These interventions keep the population informed during the COVID-19 pandemic and help to increase the ITNs coverage in USG- supported districts.

Challenges
Greater SBC investment and attention is needed to improve the uptake and maintenance of desired behaviors to prevent malaria and seek appropriate care. This will require the involvement of health care providers, community leaders, and especially CHWs, with the ultimate goal of lifting these stubborn bottlenecks:

- **ITNs:** The 2016–2017 DHS shows that the ratio of ITN access to use in Burundi is very high, ranging between 0.83 in Bururi to 1.21 in Karusi. It should be noted, however, that this high use to access ratio is calculated from both low access (32 percent) and low use (35 percent). While there is a need to increase access to ITNs, the low overall percentage of household members using an ITN indicates a need for strong SBC activities promoting net use to accompany efforts to increase ITN access.
- **MIP:** Burundi continues to be far from the desired target of 80 percent for ANC1 and 50 percent for ANC4, set by the Reproductive, Maternal, Neonatal, Child and Adolescent Health National Strategic Plan 2019-2023. The drop-off of pregnant women between the first ANC and fourth ANC visits limits delivery of a comprehensive ANC package, including IPTp. While the proportion of pregnant women attending ANC1 who receive an ITN has increased from 76.3 percent in 2020 to 86.8 percent in 2021, the progress towards uptake of IPTp by pregnant women attending ANC visits remains weak. The 2021 Statistical Yearbook showed that 54 percent received IPTp3+ in 2020 and 51 percent in 2021.
- **Case Management:** DHIS2 data from 2021 revealed that the hospital malaria case fatality rate was 0.9 percent and highlighted the number of severe malaria cases at 300,733 of which 55.5 percent (167,012) cases are children under five years of age. This suggests the need for an SBC strategy to promote adherence to seeking early fever care to reduce and avoid malaria deaths and be in line with the National Malaria Control Strategic Plan 2021-

2027 goal of zero malaria deaths by 2023 through the improvement of prompt care-seeking.

- **Service Delivery:** Low quality of case management remains a challenge: only 73 percent of malaria cases in children under five years of age were treated according to the national protocol while the National Malaria Strategic Plan aims to have 100 percent of children treated according to national malaria guidelines, according to the 2021 EUV survey report. The SBC strategy will focus on updating and printing job aids to help providers in their daily work.

6.2. Plans and Justification with FY 2023 Funding

The FY 2023 funding tables contain a full list of SBC activities that USAID proposes to support in Burundi with FY 2023 funding. Please visit www.pmi.gov/resources/malaria-operational-plans-mops for these FY 2023 funding tables.

With FY 2023 funding, USAID will contribute to the national efforts to develop a relevant SBC strategy and introduce new SBC approaches to increase IPTp uptake and improve case management and service delivery. Newly available data, including results from ITN durability monitoring on use and care of ITNs distributed through the 2022 mass campaign, a behavior study planned for 2022 and supported by *Médecins Sans Frontières* Belgium, and a USAID-supported rapid assessment on IPTp implementation strategy conducted in 2021, will inform SBC strategies interventions. The emphasis will be on IPC rather than mass communication to ensure impact.

While USAID supports SBC activities that promote the uptake and maintenance of all key malaria interventions, the following behaviors will be prioritized with FY 2023 funds:

Table 4. Priority Behaviors to Address

Behavior	Target Population	Geographic Focus	Programming to Address Behavior
Prompt care-seeking for fever for children under five years of age	Parents of children under five years of age, CHWs, and health facility based providers	8 provinces	• Conduct community and household level IPC for prompt care-seeking. • Continue to use community radio to disseminate message around early seeking of care.
Adherence to the national case management guidelines	Health facility based providers and CHWs	8 provinces	• Promote improved quality of care at health facilities through community feedback on care at health facilities. • Continue to share the National Malaria Protocol job aids related to case management. • Promote the training and coaching on quality case management.

Behavior	Target Population	Geographic Focus	Programming to Address Behavior
Improve demand for ITNs, increase appropriate use, promote care, and mitigate against misuse	Health facility based providers and CHWs	18 provinces	• Conduct community and household level IPC best net usage. • Use community radio to disseminate messages around best net usage. • Mass communication through religious leaders on net use.
Early ANC and IPTp uptake	Pregnant women, CHWs and Health facility based providers	8 provinces	• Conduct community and household level IPC for early ANC and IPTp advantages by CHWs. • Community radio. • Service communication by health care providers.

6.3. Additional Support Activities

There is a need for continued SBC capacity building at both the national and subnational levels, with increased level of effort at the state level. To bolster the NMCP communication team capacity for the planning, design, implementation, and evaluation of SBC activities, USAID will continue to support:

- Coordination at the national level through targeted support to improve the effectiveness of the SBC Technical Working Group.
- District-level specific SBC focal persons to increase coordination and ensure the impact of SBC investments, specifically.
- Strengthening capacity of key players and stakeholders for effective SBC design, implementation, and evaluation.
- Capacity strengthening for NMCP staff on the use of data to inform SBC program priorities and strategies.
- Provide technical assistance to update the NMCP communication plan and link it to the SBC strategy.

7. Surveillance, Monitoring, and Evaluation

7.1. USAID Goal and Strategic Approach

USAID Burundi's support for malaria surveillance, monitoring, and evaluation (SM&E) is fully aligned with the national strategy and aims to strengthen the country's capacity and systems to generate high-quality malaria health information for decision-making at local, national, and global levels, with the ultimate goal of reducing malaria burden.

In support of the NMCP strategy and needs in Burundi, USAID and the NMCP have prioritized interventions such as health facility surveys, support for quarterly data review

meetings to increase data use at the peripheral level, and production of quarterly bulletins.

7.2. Recent Progress (between October 2020 and September 2021)

USAID supported the following activities at the central level:

- Evaluated the NMCP's SM&E capacity using the Capacity Assessment Toolkit to identify strengths and gaps and make recommendations to strengthen and develop the NMCP's SM&E unit capacity strengthening plan.
- Developed a national curriculum on SM&E for health care workers.
- Produced four quarterly malaria bulletins.
- Participated in the mid-term review of the National Malaria Strategic Plan 2018–2023.
- Introduced the Malaria Routine Data Quality Assessment tool.
- Established a national malaria SM&E and operational research technical working group bringing together the NMCP, the national department of HMIS, and other organizations (donor organizations, civil society organizations, etc.) to effectively coordinate malaria interventions.
- Convened four national level coordination meetings (technical working groups).

These activities were conducted to identify the gaps and develop a capacity building plan to serve as advocacy tools to mobilize resources to continue support the NMCP capacity building.

USAID supported the following activities at the district level in all 49 health districts:

- Organized five district malaria data quality review meetings at the provincial level.
- Convened four district-level workshops and data-driven meetings to share lessons learned and best practices and to promote data use and improve practices in Bururi, Makamba, and Rumonge provinces.
- Conducted monthly data quality assessments.

The key challenges in Burundi regarding the availability, use, and analysis of quality data are the following:

- Lack of district level analysis of their own data and data use for decision-making despite the quarterly validation meetings in which they are the principal actors. This results in provinces and districts unable to deploy a response to mitigate malaria seasonal peaks at district level.
- Lack of coaching sessions to community health worker groups (*groupements d'agents de santé communautaire*) on collection and submission of complete

and accurate malaria community data. This is both a funding issue and a systems issue. The health facility-based health promotion technician who is in charge of CHW supervision often does not have time or resources for the supervision required to improve data quality and use at the community level.

7.3. Plans and Justification with FY 2023 Funding

The FY 2023 funding tables contain a full list of SM&E activities that USAID proposes to support in Burundi with FY 2023 funding. Please visit www.pmi.gov/resources/malaria-operational-plans-mops for these FY 2023 funding tables.

USAID will continue to support activities as described in the Recent Progress section and focus on strengthening activities in the higher burden provinces and districts and at the central level. The technical assistance will include capacity strengthening, development of protocols, strengthening the surveillance monitoring and evaluation technical working group, developing the malaria quarterly bulletins, and contributing financially and by technical assistance to the interoperability between systems eLMIS, DHIS2, and Open Clinic.

Table 5. 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						
Household Surveys	Multiple Indicator Cluster Survey						
Household Surveys	EPI survey						
Health Facility Surveys	Service Provision Assessment			P*			
Health Facility Surveys	Service Availability Readiness Assessment survey			P*			
Health Facility Surveys	Other Health Facility Survey						
Malaria Surveillance and Routine System Support	Therapeutic Efficacy Studies		X		P*		
Malaria Surveillance and Routine System Support	Support to Parallel Malaria Surveillance System	X	X				
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	P	P	P
Malaria Surveillance and Routine System Support	Malaria Rapid Reporting System	X*	X*	X*	P*	P*	P*

Source	Data Collection Activity	2020	2021	2022	2023	2024	2025
Other	End-use Verification	X	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	X	X	X

*Asterisk denotes non-USAID-funded activities, X denotes completed activities and P denotes planned activities.

8. Operational Research and Program Evaluation

USAID Burundi is not planning to support Operational Research and Program Evaluation due to budget constraints.

Table 6. Non-USAID funded Operational Research/Program Evaluation Studies Planned/Ongoing in Burundi

Source of Funding	Implementing institution	Research Question/Topic	Current status/ timeline
Global Fund	NMCP to contract with an institution	Conduct the Quality-of-Care Survey in 2022	Planned for 2022
Global Fund	NMCP to contract with an institution	Conduct a Matchbox study to assess equity in malaria programs and identify the vulnerable population. The Malaria Matchbox Toolkit is designed to support the identification of gaps and generate useful information to guide malaria program planning. It should be implemented alongside national malaria program reviews (comprehensive malaria program review, mid-term review or annual review) to identify equity gaps that will guide the revision or development of the national malaria strategic plan.	Planned for 2022

9. Staffing and Administration

A team of health professionals oversees the USAID malaria program in Burundi. The team consists of a senior malaria advisor, a locally hired expert supported by three cross-cutting staff, including one monitoring and evaluation specialist, one program management specialist in charge of supply chain/laboratory, and one program management assistant. The team works together to oversee all technical and administrative aspects of the USAID malaria program, including finalizing details of the project design, implementing malaria prevention and treatment activities, monitoring and evaluation of outcomes and impact, reporting of results, and providing guidance and direction to USAID implementing partners.

ANNEX: GAP ANALYSIS TABLES

Table A-1. ITN Gap Analysis Table

Calendar Year	2022	2023	2024
Total country population	12,837,743	13,097,399	13,353,053
Total population at risk for malaria	12,837,743	13,097,399	13,353,053
PMI-targeted at-risk population	12,837,743	13,097,399	13,353,053
Population targeted for ITNs	1,799,783	1,835,371	1,869,716
Continuous Distribution Needs			
Channel 1: ANC	609,793	622,126	634,270
Channel 1: ANC Type of ITN	All three (Dual AI, PBO and Single Pyrethroid)	All three (Dual AI, PBO and Single Pyrethroid)	All three (Dual AI, PBO and Single Pyrethroid)
Channel 2: EPI	439,051	447,931	456,674
Channel 2: EPI Type of ITN	All three (Dual AI, PBO and Single Pyrethroid)	All three (Dual AI, PBO and Single Pyrethroid)	All three (Dual AI, PBO and Single Pyrethroid)
Channel 3: School	0	0	0
Channel 3: School Type of ITN			
Channel 4: Community	200,965	232,411	375,648
Channel 4: Community Type of ITN	Single Pyrethroid	Single Pyrethroid	Single Pyrethroid
Channel 5:			
Channel 5: Type of ITN			
Estimated Total Need for Continuous Channels	1,249,809	1,302,468	1,466,592
Mass Campaign Distribution Needs			
Mass distribution campaigns	6,609,431	0	0
Mass distribution ITN type	All three (Dual AI, PBO and Single Pyrethroid)		
Estimated Total Need for Campaigns	6,609,431	0	0
Total ITN Need: Continuous and Campaign	**7,859,240**	**1,302,468**	**1,466,592**
Partner Contributions			
ITNs carried over from previous year	764,236	647,645	512,741
ITNs from Government	0	0	0
Type of ITNs from Government			
ITNs from Global Fund	6,777,090	171,683	TBD
Type of ITNs from Global Fund	All three (Dual AI, PBO and Single Pyrethroid)	Single Pyrethroid	
ITNs from other donors			
Type of ITNs from other donors			

Calendar Year	2022	2023	2024
ITNs planned with PMI funding	965,559	995,881	1,090,944
Type of ITNs with PMI funding	All three (Dual AI, PBO and Single Pyrethroid)	All three (Dual AI, PBO and Single Pyrethroid)	All three (Dual AI, PBO and Single Pyrethroid)
Total ITNs Contribution Per Calendar Year	**8,506,885**	**1,815,209**	**1,603,685**
Total ITN Surplus (Gap)	**647,645**	**512,741**	**137,093**

Table A-2. RDT Gap Analysis Table

Calendar Year	2022	2023	2024
Total country population	12,837,743	13,097,399	13,353,053
Population at risk for malaria	12,837,743	13,097,399	13,353,053
PMI-targeted at-risk population	12,837,743	13,097,399	13,353,053
RDT Needs			
Total number of projected suspected malaria cases	12,595,861	9,445,206	13,098,462
Percent of suspected malaria cases tested with an RDT	95%	95%	95%
RDT Needs (tests)	**11,966,068**	**8,972,946**	**12,443,539**
Needs Estimated based on HMIS Data			
Partner Contributions (tests)			
RDTs from Government	0	472,400	*0*
RDTs from Global Fund	12,797,750	3,994,394	TBD
RDTs from other donors	215,400	0	TBD
RDTs planned with PMI funding	1,692,250	0	1,522,603
Total RDT Contributions per Calendar Year	**14,705,400**	**4,466,794**	**1,522,603**
Stock Balance (tests)			
Beginning Balance	3,119,225	5,858,557	1,352,405
- Product Need	11,966,068	8,972,946	12,443,539
+ Total Contributions (received/expected)	14,705,400	4,466,794	1,522,603
Ending Balance	**5,858,557**	**1,352,405**	**(9,568,531)**
Desired End of Year Stock (months of stock)	6	9	6
Desired End of Year Stock (quantities)	5,983,034	6,729,709	6,221,769
Total Surplus (Gap)	**(124,477)**	**(5,377,304)**	**(15,790,300)**

Table A-3. ACT Gap Analysis Table

Calendar Year	2022	2023	2024
Total country population	12,837,743	13,097,399	13,353,053
Population at risk for malaria	12,837,743	13,097,399	13,353,053
PMI-targeted at-risk population	12,837,743	13,097,399	13,353,053
ACT Needs			
Total projected number of malaria cases	6,659,040	4,993,387	6,924,750
Total ACT Needs (treatments)	**6,607,635**	**4,954,840**	**6,871,294**
Needs Estimated based on HMIS Data			
Partner Contributions (treatments)			
ACTs from Government	0	355,120	0
ACTs from Global Fund	2,268,210	2,417,611	TBD
ACTs from other donors (MSF&WVI)	140,225	0	0
ACTs planned with PMI funding	1,027,710	300,000	1,002,120
Total ACTs Contributions per Calendar Year	**3,436,145**	**3,072,731**	**1,002,120**
Stock Balance (treatments)			
Beginning Balance	4,875,750	1,704,260	0
- Product Need	6,607,635	4,954,840	6,871,294
+ Total Contributions (received/expected)	3,436,145	3,072,731	1,002,120
Ending Balance	**1,704,260**	**(177,849)**	**(5,869,174)**
Desired End of Year Stock (months of stock)	6	9	6
Desired End of Year Stock (quantities)	3,303,817	3,716,130	3,435,647
Total Surplus (Gap)	**(1,599,557)**	**(3,893,979)**	**(9,304,820)**

Table A-4. Inj. Artesunate Gap Analysis Table

Calendar Year	2022	2023	2024
Injectable Artesunate Needs			
Projected number of severe cases	148,231	111,153	154,146
Projected number of severe cases among children	103,728	77,782	107,867
Average number of vials required for severe cases among children	5	5	5
Projected number of severe cases among adults	44,261	33,190	46,028
Average number of vials required for severe cases among adults	12	12	12
Total Injectable Artesunate Needs (vials)	**1,001,418**	**750,927**	**1,041,380**
Needs Estimated based on HMIS Data			
Partner Contributions (vials)			
Injectable artesunate from Government			
Injectable artesunate from Global Fund	858,527	1,177,706	TBD
Injectable artesunate from other donors			
Injectable artesunate planned with PMI funding	105,550	130,795	0
Total Injectable Artesunate Contributions per Calendar Year	**964,077**	**1,308,501**	**0**
Stock Balance (vials)			
Beginning Balance	1,374,238	1,336,897	1,894,471
- Product Need	1,001,418	750,927	1,041,380
+ Total Contributions (received/expected)	964,077	1,308,501	0
Ending Balance	**1,336,897**	**1,894,471**	**853,091**
Desired End of Year Stock (months of stock)	6	9	6
Desired End of Year Stock (quantities)	500,709	563,195	520,690
Total Surplus (Gap)	**836,188**	**1,331,275**	**332,401**

Table A-5. RAS Gap Analysis Table

Calendar Year	2022	2023	2024
Artesunate Suppository Needs			
Number of severe cases expected to require pre-referral dose (or expected to require pre-referral dose based on number of providers for the service)	13,603	16,758	23,239
Total Artesunate Suppository Needs (suppositories)	**13,603**	**16,758**	**23,239**
Needs Estimated based on HMIS Data			
Partner Contributions (suppositories)			
Artesunate suppositories from Government			
Artesunate suppositories from Global Fund	25,802	9,484	TBD
Artesunate suppositories from other donors			
Artesunate suppositories planned with PMI funding	40,156	13,000	0
Total Artesunate Suppositories Available	**65,958**	**22,484**	**0**
Stock Balance (suppositories)			
Beginning Balance	0	46,355	34,772
- Product Need	13,603	16,758	23,239
+ Total Contributions (received/expected)	65,958	22,484	0
Adjustment	6,000	17,310	
Ending Balance	**46,355**	**34,772**	**11,533**
Desired End of Year Stock (months of stock)	6	6	6
Desired End of Year Stock (quantities)	6,801	8,379	11,620
Total Surplus (Gap)	**39,554**	**26,393**	**(87)**

Table A-6. SP Gap Analysis Table

Calendar Year	2022	2023	2024
Total Country Population	12,837,743	13,097,399	13,353,053
Total Population at Risk for Malaria	12,837,743	13,097,399	13,353,053
PMI Targeted at Risk Population	12,837,743	13,097,399	13,353,053
SP Needs			
Total Number of Pregnant Women	641,887	654,870	667,653
Percent of pregnant women expected to receive IPTp1	78%	79%	80%
Percent of pregnant women expected to receive IPTp2	66%	67%	68%
Percent of pregnant women expected to receive IPTp3	52%	53%	54%
Percent of pregnant women expected to receive IPTp4+	10%	35%	45%
Total SP Needs (doses)	**1,319,720**	**1,529,776**	**1,646,431**
Needs Estimated based on HMIS Data	**0**	**0**	**0**
Partner Contributions (doses)			
SP from Government	0	0	0
SP from Global Fund	889,167	0	TBD
SP from other donors			
SP planned with PMI funding	0	1,359,644	0
Total SP Contributions per Calendar Year	**889,167**	**1,359,644**	**0**
Stock Balance (doses)			
Beginning balance	1,043,067	612,513	442,381
- Product Need	1,319,720	1,529,776	1,646,431
+ Total Contributions (Received/expected)	889,167	1,359,644	0
Ending Balance	**612,513**	**442,381**	**(1,204,050)**
Desired End of Year Stock (months of stock)	6	9	6
Desired End of Year Stock (quantities)	659,860	1,147,332	823,216
Total Surplus (Gap)	**(47,347)**	**(704,951)**	**(2,027,266)**