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U.S. PRESIDENT'S MALARIA INITIATIVE

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This FY 2021 Malaria Operational Plan has been approved by the U.S. Global Malaria Coordinator and reflects collaborative discussions with national malaria control programs and other partners. Funding available to support outlined plans is pending final FY 2021 appropriation. Any updates will be reflected in revised postings.

U.S. PRESIDENT’S MALARIA INITIATIVE

SENEGAL

Malaria Operational Plan FY 2021

The U.S. President’s Malaria Initiative (PMI)—led by the U.S. Agency for International Development (USAID) and implemented together with the U.S. Centers for Disease Control and Prevention (CDC)—delivers cost-effective, lifesaving malaria interventions alongside catalytic technical and operational assistance to support Senegal to end malaria. PMI has been a proud partner of Senegal since 2008, helping to decrease child death rates by 40 percent through investments totaling almost \$320 million.

The proposed PMI fiscal year (FY) 2021 planning budget for Senegal is \$22.5 million. This Malaria Operational Plan (MOP) summary outlines planned PMI activities in Senegal for FY 2021. See accompanying **FY 2021 Budget Tables** (Tables 1 and 2) for activities and budget amounts, available on pmi.gov. Developed in consultation with the National Malaria Control Program (NMCP) and key stakeholders, proposed activities reflect national and PMI strategies, draw on best-available data, and align with the country context and health system. Proposed PMI investments support and build on those made by the Government of Senegal as well as other donors and partners. See **Annex A: Gap Analysis Tables** for information on commodities.

To accelerate the journey to self-reliance, PMI developed a programmatic inventory to assess the strengths and persistent challenges of the Senegal program. See **MOP FY 2020 Senegal, Annex B: Program Inventory**. The activities proposed in this MOP are tailored to draw on strengths and foster improvements.

Since the FY 2020 MOP was developed, the following new data, updated policy and/or strategic priorities relevant for the FY 2021 MOP have become available:

- Review of Senegal’s National Strategic Plan 2016-2020 performance
- Senegal’s new National Strategic Plan 2021-2025 (under development)

For more information about the malaria situation, malaria control progress, and intervention-specific data in Senegal, please refer to the FY 2020 MOPs available on pmi.gov.

Annex A. Gap Analysis Tables

Insecticide-treated Mosquito Net (ITN) Gap Analysis			
Calendar Year	2020	2021	2022
Total targeted population ¹	16,705,608	17,223,497	17,738,795
Continuous Distribution Needs ¹⁻³			
Channel #1: ANC	481,122	496,037	255,439
Channel #2: EPI	0	0	0
Channel #3: Health facilities	129,673	661,603	26,737
Channel #4: Social marketing	225,000	0	0
Channel #5: Community organizations	86,449	441,069	17,825
<i>Estimated total need for continuous channels</i>	922,244	1,598,709	300,000
Mass Campaign Distribution Needs			
Nationwide mass distribution campaign	0	0	10,840,375
<i>Estimated Total Need for Campaigns 2022</i>	0	0	10,840,375
Total ITN Need: Routine and Campaign	922,244	1,598,709	11,140,375
Partner Contributions			
ITNs carried over from previous year	814,500	1,417,256	542,179
ITNs from MOH	0	0	0
ITNs from Global Fund	0	0	4,403,100
ITNs from other donors (Islamic Dev Bank)	0	0	0
ITNs from other donors (OMVS)	0	0	0
ITNs from other donors (GIZ)	0	0	0
ITNs planned with PMI funding ⁴	1,525,000	723,632	1,532,345
Total ITNs Available	2,339,500	2,140,888	6,477,624
Total ITN Surplus (Gap)	1,417,256	542,179	-4,662,750

¹ Annual population from ANSD projected Senegal population by age and by sex (2013-2025) = 17,223,497

² Estimated percentage of pregnant women (ANSD) = 3.6%

³ Patient visit/consultation rate at ANC (ANSD) = 80%

⁴ There is a universal ITN campaign distribution planned for 2022. We have set aside FY18, FY19, and FY20 funds to purchase 1,232,345 PBO ITNs for this campaign, covering the three high burden regions of Tambacounda, Kolda, and Kedougou. We propose to buy 300,000 PBO ITNs with FY21 funds. These nets will support routine distribution of PBO nets in these three same regions, to compensate for the attrition of the PBO nets distributed during the campaign.

Additional Explanations

- The needs were estimated on the basis of the ANSD projected Senegal population by age and by sex 2013-2025 (*see ANSD Senegal sheet). 2019 nationwide mass distribution campaign needs were 9,229,348 ITNs. For the routine distribution of ITNs to pregnant women, the NMCP recommends 80% are distributed through ANC in non-campaign years and 40% are distributed through ANC in campaign years.
- In 2020, there was a carryover of 814,500 nets from PMI, GIZ, and BID. 1,845,870 (9,229,348*20%) of mass ITNs campaign are estimated to be lost (20%) (as estimated by RBM guidance). The quantity of ITNs to be split through the other distribution channels is 441,122 ITNs from which 225,000 will go through the social marketing channel. The remaining 216,122 ITNs will be distributed to CPCs and OCBs. 60% will be distributed to the CPC (129,673) and 40% OCB (86,448). At the end of 2020, the NMCP expects to have a surplus of 1,417,256 ITNs.
- In 2021, the wastage rate (attrition) from the campaign of 2019 is estimated at 50%, i.e. 4,614,674. Pregnant women will use 496,037 and 1,102,672 will be divided between CPC (60%=661603) and OCB (40%= 441068) by implementing routine strengthening strategies.
- In 2022, it is estimated that 300,000 ITNs will be routinely distributed based on the results of 2019 i.e. 255,439 for pregnant women, and 60% of the remaining quantity will be applied to health facilities (CPCs) (26,737) and 40% to OCBs (17825).
- For mass campaign 2022, the needs were estimated on the basis of ANSD rates applied to ITNs for 1.8 per person with an increase of 10%. For the same year we assume that the numbers for routine represent needs based on timing of the mass distribution campaign.

Sulfadoxine-Pyrimethamine (SP) Gap Analysis			
Calendar Year	2020	2021	2022
Total population at risk	16,705,608	17,223,497	17,738,795
SP Needs			
Total number of pregnant women ¹	601,402	620,046	638,597
Total SP Need (in treatments) ²⁻⁵	2,787,498	2,873,913	2,959,895
Partner Contributions			
SP carried over from previous years	1,325,550	338,052	0
SP from Government	0	0	0
SP from Global Fund	1,800,000	2,535,860	2,959,895
SP from other donors	0	0	0
SP planned with PMI funding	0	0	0
Total SP Available	3,125,550	2,873,913	2,959,895
Total SP Surplus (Gap)	338,052	0	0

¹ The total number of pregnant women is estimated at 3.6% of the total population (ANSD).

² As per the National Supply Chain Plan 2017-2020, the number of treatments is calculated using the total number of pregnant women and the target of a minimum of 3 doses of SP during the pregnancy.

³ For CY 2020, 2021, and 2022, SP will be exclusively purchased using GF financing. Total SP needs were rounded up.

⁴ The NMCP added a 6-month buffer stock, which is half of the annual requirements (1.5) and a loss rate of 3% (1.03).

⁵ The NMCP proposed to add SP in the NFM3.

Seasonal Malaria Chemoprevention (SMC) Gap Analysis			
Calendar Year	2020	2021	2022
SMC drug (SP+AQ) Needs			
Population targeted for SMC	928,015	950,622	976,289
PMI-targeted population for SMC ¹⁻²	928,015	950,622	976,289
Total SP+AQ Needs³⁻⁶	4,230,000	4,331,172	4,448,113
Partner Contributions (to PMI target population if not entire area at risk)			
SP+AQ carried over from previous year	0	0	0
SP+AQ from Government	0	0	0
SP+AQ from Global Fund	0	0	0
SP+AQ from Other Donors	0	0	0
SP+AQ planned with PMI funding	4,230,000	4,331,372	4,448,113
Total SP+AQ Available	4,230,000	4,331,372	4,448,113
Total SP+AQ Surplus (Gap)	0	0	0

¹ In Senegal, the target population is children between the age of 3-120 months living in SMC-targeted regions.

² Geographic coverage: regions of Kedougou, Kolda, Tambacounda, and targeted high burden health posts within the districts of Diourbel, Touba and Kaolack. Figure A32 in the MOP FY 20 document illustrates the target population in each region where SMC is implemented. The quantification factorized 4 rounds for the districts of Kédougou region. For the health districts of the region of Kolda and Tambacounda, the quantification considered 3 rounds. For the districts of Kaolack, Diourbel, and Touba, the quantification is made on the basis of the hotspot health facilities which benefited from the 2019 SMC.

³ Targeted population - number of children from 3 to 11 months (%) = 3.9% (ANSD)

⁴ Targeted population - number of children from 12 to 59 months (%) = 15.5% (ANSD)

⁵ Targeted population - number of children from 60 to 120 months (%) = 10.6% (ANSD)

⁶ Loss rate = 10% (ANSD)

Rapid Diagnostic Test (RDT) Gap Analysis			
Calendar Year	2020	2021	2,022
RDT Needs			
Total country population	16,705,608	17,223,497	17,738,795
Population at risk for malaria ¹	16,705,608	17,223,497	17,738,795
PMI-targeted at-risk population	16,705,608	17,223,497	17,738,795
Total number of projected fever cases ²	4,270,000	4,375,000	4,410,000
Percent of fever cases tested with an RDT	100%	100%	100%
Total RDT Needs ³	4,270,000	4,375,000	4,410,000
Partner Contributions (to PMI target population if not entire area at risk)*			
RDTs carried over from previous year	787,000	17,000	0
RDTs from Government	0	0	0
RDTs from Global Fund	1,750,000	0	0
RDTs from other donors (BID)	0	0	0
RDTs planned with PMI funding	1,750,000	4,358,000	4,410,000
Total RDTs Available	4,287,000	4,375,000	4,410,000
Total RDT Surplus (Gap)	17,000	0	0

¹ Geographic coverage: national quantification.

² For 2020, the NMCP expects 12,200,000 all-cause consultations, for 2021, 12,500,000, and for 2022, 12,600,000 nationwide. These estimates will be revised as the annual epidemiologic bulletins become available.

³ In 2019, the NMCP recorded 11,689,076 all cause consultations provided by service providers (at health facilities and at the community level). There were 2,010,398 suspected malaria cases, which represents 17% of all-cause consultations. At the community level, 28% of all consultations were identified as suspected malaria cases (annual NMCP epidemiologic bulletin). As it was done in previous years, for RDT quantification purposes, the NMCP estimates that 35% of all-cause consultations both at the facility and the community level will be suspected cases of malaria. This takes into account an assumed increase in suspected cases due to expansion of community case management and institutionalization of national guidelines of testing every fever case since this proportion of cases will be suspected malaria cases and will be tested with RDT.

Artemisinin-based Combination Therapy (ACT) Gap Analysis			
Calendar Year	2020	2021	2022
ACT Needs			
Total country population	16,705,608	17,223,497	17,738,795
Population at risk for malaria	16,705,608	17,223,497	17,738,795
PMI-targeted at-risk population ¹	16,705,608	17,223,497	17,738,795
Total projected number of malaria cases	854,000	875,000	882,000
Total ACT Needs ²	854,000	875,000	882,000
Partner Contributions (to PMI target population if not entire area at risk) ¹			
ACTs carried over from previous year	87,500	497,540	537,540
ACTs from Government	0	0	0
ACTs from Global Fund	630,000	0	0
ACTs from other donors	0	0	0
ACTs planned with PMI funding	634,040	915,000	700,000
Total ACTs Available	1,351,540	1,412,540	1,237,540
Total ACT Surplus (Gap)	497,540	537,540	355,540

**The NMCP is aware of the gaps identified in 2020 and 2021 and they indicated that they are able to manage the gap, as they are negotiating with the Chinese Cooperation on ACT procurement. At the time of this MOP development, the numbers from the Chinese Cooperation are not available.*

¹ Geographic coverage: national quantification

² In 2019; the case positivity rate was 17%. Every year, the NMCP estimates a 20% positivity rate. A buffer stock of 3% is applied on the malaria suspected cases tested for the estimated cases to be treated by ACT per year. The buffer stock is based on the average number of previous years. No other logistic parameters included.

Injectable Artesunate Gap Analysis			
Calendar Year	2020	2021	2022
Injectable Artesunate Needs			
Projected number of severe cases ¹	9,252	9,152	9,052
Projected number of severe cases among children	1,388	1,373	1,358
Projected number of severe cases among adults	7,779	7,779	7,694
Total injectable artesunate vials needs for children ²	9159	9060	8961
Total injectable artesunate vials needs for adults ³	154028	154028	152345
Total Injectable Artesunate Vials Needs ⁴	163,188	163,089	161,307
Partner Contributions			
Injectable vials carried over from previous year	38,473	50,985	101,047
Injectable vials from Government	0	0	0
Injectable vials from Global Fund	0	0	0
Injectable vials from other donors	0	0	0
Injectable vials planned with PMI funding	175,700	213,150	130,000
Total Injectable Artesunate Vials Available	214,173	264,135	231,047
Total Injectable Artesunate Vials Surplus (Gap)	50,985	101,047	69,740

Assumptions

- Estimated security stock for annual needs = 1.5
- Estimated product loss rate = 1.1

Additional Explanations

¹ In 2019, 9,352 severe cases were recorded and the program expected a decrease of 100 cases every year with implementation of key interventions.

² A severe malaria case in a child under 5 years of age is treated with 4 vials of injectable artesunate. To this total of vials needed, we have added 6 months of security stock which represents 50% of the annual needs (1.5), and a 10% loss rate (1.1).

³ A severe malaria case over 5 years is treated with 12 vials of injectable artesunate. To this total of vials needed, we have added 6 months of security stock which represents 50% of the annual needs (1.5), and a 10% loss rate (1.1).

⁴ For the injectable artesunate, as the program does not have any visibility on the consumption, the stock that will remain at the end of each year is estimated at 10%. In addition, there is a buffer stock estimated at 6 months which represents 50% of annual needs, i.e. (1.5) and a loss rate of 10% (1.1).

Rectocaps Gap Analysis			
Calendar Year	2020	2021	2022
Artesunate Suppository Needs			
Number of points of care at the peripheral level ¹	7500	7500	7500
Total Artesunate Suppository Needs ²	61875	61875	61875
Partner Contributions			
Artesunate suppositories carried over from previous year ³	59,329	12,604	0
Artesunate suppositories from Government	0	0	0
Artesunate suppositories from Global Fund	0	0	0
Artesunate suppositories from other donors	0	0	0
Artesunate suppositories planned with PMI funding ⁴	15,150	42,700	61,875
Total Artesunate Suppositories Available	74,479	55,304	61,875
Total Artesunate Suppositories Surplus (Gap)	12,604	-6,571	0

Assumptions

- Estimated security stock for annual needs = 1.5
- Estimated product loss rate = 1.1

Additional Explanations

¹ There are currently 7,500 points of care nationwide: 2,500 health huts, 3,000 PECADOM sites, and 2,000 health posts.

² The assumption for the forecast is to provide for each point of care in the nation at least five (5) boxes of 2 suppositories of 100mg per box every year. Additionally, the needs to fill the pipeline are included. This includes a 6 months security stock (1.5) and a 10% estimated product loss (1.1).

³ Artesunate suppositories inventory in December 2019 was 59,329 treatments (PNA 2019 inventory).

⁴ For 2020, the 100mg formulation was procured. As the transition in formulation is implemented, the number of rectocaps to be procured for 2021 will be reevaluated based on an updated inventory of stock availability and expiration dates to ensure availability of rectocaps in every point of care as stated in the national procurement plan and in footnote 2. This quantity will be revised in June 2020 during the MOP FY 2020 reprogramming exercise.