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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

DEMOCRATIC REPUBLIC OF THE CONGO

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 the Democratic Republic of the Congo (DRC) to end malaria. PMI has been a proud partner of DRC since 2010, helping to decrease child death rates by 56 percent¹ through investments totaling almost \$477 million.

The proposed PMI fiscal year (FY) 2021 planning budget for DRC is \$48 million. This Malaria Operational Plan (MOP) summary outlines planned PMI activities in DRC 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 DRC 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 DRC's program. See **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:

- The DRC Multiple Indicator Cluster Survey (MICS) 2017/18 became public in February 2020. Preliminary data from the DRC MICS 2017/18 were used in the FY 2020 MOP, so although the data are not new, they can now be considered official. The final report can be found at [DRC MICS 2017/18](#).
- New SBC activities targeting urban and peri-urban populations are proposed in the FY 2021 MOP in the vector control, prevention, and case management sections. Currently, SBC activities in DRC work at the community level, primarily in rural areas, using

¹ U.S. President's Malaria Initiative 14th Annual Report to Congress, May 2020

interpersonal communication and community mobilization strategies. The new activities complement this work and provide a more comprehensive intervention, by targeting populations that have access to radios, TVs, etc. using media approaches. These activities will be conducted in Haut Katanga, Kasai Oriental, Lualaba, and Sud Kivu provinces.

For more information about the malaria situation, malaria control progress, and intervention-specific data in DRC, 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	108,010,696	111,143,006	114,366,153
PMI targeted population	41,851,646	43,065,344	44,314,239
Continuous Distribution Needs			
Channel #1: ANC	3,845,181	3,956,691	4,071,435
Channel #2: EPI	3,581,095	3,684,946	3,791,810
Channel #3: School-based distribution	2,477,050	5,708,741	11,415,147
Estimated total need for continuous channels	9,903,325	13,350,378	19,278,391
Mass Campaign Distribution Needs			
Estimated total need for mass distribution campaign(s)	23,012,941	14,642,264	20,517,283
Total ITN Need: Routine and Campaign	32,916,266	27,992,643	39,795,674
Partner Contributions			
ITNs carried over from previous year	0	3,665,947	1,917,005
ITNs from MOH	0	0	0
ITNs from Global Fund	7,214,520	10,243,701	4,960,123
ITNs from other donors (AMF)	24,451,693	15,000,000	15,000,000
ITNs planned with PMI funding	4,916,000	1,000,000	3,046,826
Total ITNs Available	36,582,213	29,909,648	24,923,953
Total ITN Surplus (Gap)	3,665,947	1,917,005	-14,871,721
PMI Province Estimates			
Calendar Year	2020	2021	2021
Total population PMI provinces	41,851,646	43,065,344	44,314,239
Targeted PMI population for school-based distribution	8,413,038	14,723,587	15,710,126
Continuous Distribution Needs			
Channel #1: ANC - PMI Zones	1,489,919	1,533,126	1,577,587
Channel #2: EPI - PMI Zones	1,387,591	1,427,831	1,469,239
Channel #3: School-based distribution		2,763,323	2,948,476
Estimated total need for continuous channels in PMI Provinces	2,877,510	5,724,281	5,995,302
Mass Distribution Needs			
PMI population targeted for 2018/2019/2020 mass campaigns	5,366,482	10,910,436	20,782,159
Estimated total need for campaigns in PMI provinces	2,981,379	6,061,354	11,545,644
Total ITN Need: Routine and Campaign in PMI Provinces	5,858,889	11,785,635	17,540,946
Partner Contributions			
ITNs planned with PMI funding	4,916,000	1,000,000	3,046,826
Total ITNs Available	4,916,000	1,000,000	3,046,826
Total ITNs Surplus (Gap)	-942,889	-10,785,635	-14,494,120

Quantification assumptions for ITNs to be distributed through ANC channel:

- Proportion of pregnant women expected in the community: 4% of total population
- National coverage target (according to strategic plan): 100%
- The 2018 ANC services attendance rate of each health zone was calculated by dividing the number of women received at ANC 1 by the number of potential pregnant women (4% of the population). This gave an overall average of 82% for all PMI-supported health zones. To find a projected ANC services attendance rate for 2020 and 2021, all HZ with this attendance rates under 80% have been raised to 80% (which is the objective of the NMCP, according to its strategic plan 2016-2020). But all HZ with attendance - ANC1 services rates, already above 80%, have been maintained. This gave an average rate of 89% which was applied for 2020, 2021, and 2022 (as per 2019 quantification exercise)
- Proportion of pregnant women using ANC services who receive ITNs: 100%
- Number of ITNs required per pregnant woman: 1

Quantification assumptions for ITNs to be distributed through EPI channel:

- Proportion of children under one year of age expected in the community: 3.49% of total population
- Proportion of children under one year of age expected for measles immunization: 95% (as per 2019 quantification exercise)
- Proportion of children under one year of age receiving measles immunization who receive ITNs: 100%
- Number of ITNs required per child under one year of age: 1

Quantification assumptions for ITNs to be distributed through schools:

- Population of targeted provinces:
 - 2018: Lualaba, Tanganyika and Haut Lomami
 - 2019: Lomami, North Ubangi, Maniema, Haut Uele, Bas Uele and Kasai Central
 - 2020: Tanganyika and Lualaba
- Proportion of children of school age (age group 6-11 years): 17% of the population
- Primary school coverage during the 2011/12 school year is on average 110.4% (this is the gross enrollment rate which takes into account repeaters and children who started primary school in advance compared to their age). Source: Report of the DRC education system 2014, p. 27.
- Estimated number of children of school age for all grades of primary school: 100% of primary school children (1st to 6th)
- Number of ITNs per student: 1

Quantification assumptions for ITNs mass campaigns:

- Total population by health zone, with 2.9% increase per year.
- Provinces targeted by year: Listed provinces are to be discussed with donors including PMI.
- National coverage target (according to strategic plan): 100%
- Number of people per ITN, based on WHO recommendations: 1.8

Sulfadoxine-Pyrimethamine (SP) Gap Analysis			
Calendar Year	2020	2021	2022
Total population at risk (in PMI-targeted provinces)	41,851,646	43,065,344	44,314,239
SP Needs			
Total number of pregnant women ¹	1,674,066	1,722,614	1,772,570
Total SP Need (in treatments) ^{2,3}	4,553,459	4,685,509	4,821,389
Partner Contributions			
SP carried over from previous years	2,090,000	0	1,835,574
SP from Government	0	0	0
SP from Global Fund	0	0	0
SP from other donors	0	0	0
SP planned with PMI funding	1,560,000	6,521,083	2,228,444
Total SP Available	3,650,000	6,521,083	4,064,018
Total SP Surplus (Gap)	-903,459	1,835,574	-757,372

¹ The total number of pregnant women is estimated at 4% of the total population. This does not equal the total number of ANC visits.

² The number of treatments is calculated using the total number of pregnant women attending ANC and estimating the percentage who will attend ANC1, ANC2, ANC3, ANC4 to receive IPTp.

³ One treatment of IPTp is comprised of 3 SP tablets.

Rapid Diagnostic Test (RDT) Gap Analysis			
Calendar Year	2020	2021	2022
RDT Needs			
Total country population	108,010,696	111,143,006	114,366,153
Population at risk for malaria ¹	108,010,696	111,143,006	114,366,153
PMI-targeted at-risk population	41,851,646	43,065,344	44,314,239
Total number of projected fever cases in PMI-targeted provinces	10,608,656	11,245,175	11,919,886
Percent of fever cases tested with an RDT	90%	90%	90%
Total RDT Needs in PMI-targeted provinces ²	9,547,790	10,120,658	10,727,897
Partner Contributions (to PMI target population if not entire area at risk)*			
RDTs carried over from previous year ³	853,619	0	0
RDTs from Government	0	0	0
RDTs from Global Fund	2,803,561	1,012,066	10,727,897
RDTs from other donors	0	0	0
RDTs planned with PMI funding	5,000,000	7,047,846	0
Total RDTs Available	8,657,180	8,059,912	10,727,897
Total RDT Surplus (Gap)	-890,610	-2,060,746	0

¹ Quantification assumptions for RDT Gap Analysis:

- This year, there is no national quantification in DRC but a quantification just for provinces under PMI support. As did last year, this quantification of RDTs and ACTs no longer starts from the global population, but suspected cases.
- The starting point is 2018 suspected cases with growth of 6% per year (due to expected increase in the availability of services, as per the National Health Development Plan). The quantification for 2019 was not reviewed, as this MOP FY 2021 was developed before it was available. A growth of 12% was applied from 2018 to 2020.
- The expected global testing rate is 99% (both RDT and microscopy). 90% of cases tested use RDTs, while 9% use microscopy.

² These RDT-needs are related to civil calendar (12 months) and are not including the security stock that should be equal to the minimum stock defined as six months of stock.

³ The source of carried over stock from 2018 to 2019 is the December 2018 stock status report. The source of carried over stock from 2020 to 2021 is the estimated stock at the end of December 2020 based on January stock status report and forecast consumption till December 2020.

Note: This gap analysis is related only to PMI-targeted provinces as in DRC each main donor has its specific target (there is no overlap between donors but a possibility of interchangeability of stocks).

Injectable Artesunate Gap Analysis			
Calendar Year	2020	2021	2022
Injectable Artesunate Needs ¹			
Projected # of severe cases in PMI-targeted provinces	868,587	920,702	975,945
Projected # of severe cases among children	580,216	615,029	651,931
Projected # of severe cases among adults	288,371	305,673	324,014
Total Injectable Vials Needs (PMI-targeted provinces) ²	4,880,591	5,173,427	5,483,832
Total Injectable Vials Needs (PMI-targeted provinces) For Severe Cases Among Children 0-13 Years	2,277,435	2,414,082	2,558,927
Partner Contributions			
Injectable vials carried over from previous year ³	0	0	0
Injectable vials from Government	0	0	0
Injectable vials from Global Fund	1,090,000	1,090,000	2,558,927
Injectable vials from other donors	0	0	0
Injectable vials planned with PMI funding (quantity needed for severe cases among children 0-13 years)	1,069,579	0	0
Total Injectable Vials Available in PMI-targeted provinces	2,159,579	1,090,000	2,558,927
Total Injectable Vials Surplus (Gap) in PMI-targeted provinces	-2,721,012	-4,083,427	-2,924,905

¹ Quantification assumptions for Injectable Artesunate Gap Analysis:

- For 2020, 2021 and 2022, the started point is projected number of malaria cases (confirmed cases either by RDTs or microscopy, with an average of 7% of presumed malaria cases). From this number, an average of 9.59% was applied to the estimate number of severe cases (as per 2018 NMCP data base).
- As per the last 2018 EUV (a countrywide one with a representative sample of HF), proportions of malaria cases per age group are the following:
 - 2-11 months: 11.2%
 - 1-5 years: 35%
 - 6-13 years: 20.6%
 - >13 years: 33.3%
- As per the posology, the number of Injectable Artesunate 60 mg per severe case are following:
 - 2-11 months: 3
 - 1-5 years: 3
 - 6-13 years: 6
 - >13 years: 9

² All severe cases are expected to be treated with injectable artesunate while PMI is no longer procuring quinine for DRC. These needs are related to civil calendar (12 months) and are not including the security stock that should be equal to the minimum stock defined as six months of stock.

³ The source of carried over stock from 2018 to 2019 is the December 2018 stock status report.

Note: This gap analysis is related only to PMI-targeted provinces as in DRC each main donor has its specific target (there is no overlap between donors but a possibility of interchangeability of stocks).

Artemisinin-based Combination Therapy (ACT) Gap Analysis			
Calendar Year	2020	2021	2022
ACT Needs ¹			
Total country population	108,010,696	111,143,006	114,366,153
Population at risk for malaria	108,010,696	111,143,006	114,366,153
PMI-targeted at-risk population ¹	41,851,646	43,065,344	44,314,239
Total projected number of malaria cases in PMI-targeted provinces	9,057,217	9,600,650	10,176,689
Total ACT Needs in PMI-targeted provinces ²	9,057,217	9,600,650	10,176,689
Partner Contributions (to PMI target population if not entire area at risk) ³			
ACTs carried over from previous year	0	0	3,000,700
ACTs from Government	0	0	0
ACTs from Global Fund	0	0	10,000,000
ACTs from other donors	0	0	0
ACTs planned with PMI funding	7,450,255	12,601,350	0
Total ACTs Available	7,450,255	12,601,350	13,000,700
Total ACT Surplus (Gap)	-1,606,962	3,000,700	2,824,010

¹ *Quantification assumptions for ACT gap analysis:*

- The recent quantification of RDTs and ACTs (just for PMI-supported provinces) no longer starts from the global population, but suspected cases.
- The starting point is 2018 suspected cases with growth of 6% per year (due to expected increase in the availability of services, as per the National Health Development Plan). The quantification for 2019 was not reviewed, as this MOP FY 2021 was developed before it was available. A growth of 12% was applied from 2018 to 2020.
- The testing rate with RDTs is 90% and 9% with microscopy
- Total projected malaria cases was estimated by increasing confirmed cases (an average of 81,564 by RDTs and an average of 70.92 by microscopy) with 7% that represents presumptive cases (as per the NMCP 2018 report).

² These ACT-needs are related to civil calendar (12 months) and are not including the security stock that should be equal to the minimum stock defined as six months of stock.

³ The source of carried over stock from 2018 to 2019 is the December 2018 stock status report.

Note: This gap analysis is related only to PMI-targeted provinces as in DRC each main donor has its specific target (there is no overlap between donors but a possibility of interchangeability of stocks).

Artesunate Suppository Gap Analysis			
Calendar Year	2020	2021	2022
Artesunate Suppository Needs			
Number of severe cases expected to require pre-referral dose at community level	132,224	140,158	148,567
Total Artesunate Suppository Needs ²	167,396	177,440	188,086
Partner Contributions			
Artesunate suppositories carried over from previous year ³	6,292	0	2,560
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	150,000	180,000	260,000
Total Artesunate Suppositories Available	156,292	180,000	262,560
Total Artesunate Suppositories Surplus (Gap)	-11,104	2,560	74,475

¹ Quantification assumptions for Artesunate Suppositories Gap Analysis:

- The starting point is projected number of malaria cases (only confirmed cases, either by RDTs or microscopy). From this number, an average of 9.56% was applied to the estimate number of severe cases (as per 2018 NMCP data base).
- As per 2018 NMCP data, total severe malaria cases referred from peripheral health facilities and community care sites is around 30%. An increase of 3% was applied to this rate for 2020 and 2021.
- As per the last 2018 EUV (countrywide, with a representative sample of HF), proportions of malaria cases per age group are the following:
 - 2-11 months: 11.2%
 - 1-5 years old: 35 %
 - 6-13 years: 20.6%
 - >13 years: 33.3%
- As per WHO the posology of artesunate suppository 100mg to use for a severe case to refer is the following:
 - 0-3 years: 1 suppository
 - > 3 years old: 2 suppositories
- A Proxy obtained from DHS-MIS (<https://www.dhsprogram.com/data/available-datasets.cfm>) was then used. It is a weighted average of 1.266 rectal artesunate for a severe case of malaria from 0-5 years of age to refer.

² These needs are for referred severe cases (supposed to be from 0 to 5 years of age). These needs are related to civil calendar (12 months) and are not including the security stock that should be equal to the minimum stock defined as six months of stock.

³ The source of carried over stock from 2018 to 2019 is the December 2018 stock status report. The source of carried over stock from 2019 to 2020 is the estimated stock at the end of December 2019 based on September 2019 stock status report and forecast consumption from September to December.

Note: This gap analysis is related only to PMI-targeted provinces as in DRC each main donor has its specific target (there is no overlap between donors but a possibility of interchangeability of stocks).

Annex B. Program Inventory

Figure B1. Category: Vector Control

Activity	Metrics/Criteria	Relative Continuum					Estimate Level
		1	2	3	4	5	
Vector Control	Coverage with vector control intervention(s) with appropriate insecticide(s) given country's insecticide resistance profile	No coverage of malaria endemic areas with a vector control intervention	1-25% of the geographic area of malaria endemic regions covered	26-50% of the geographic area of malaria endemic regions covered	51-75% of the geographic area of malaria endemic regions covered	>75% of the geographic area of malaria endemic regions covered	5
Entomological Monitoring	Insecticide resistance monitoring	No monitoring	Limited monitoring conducted ad hoc	Annual monitoring conducted in limited number of sites, not covering all administrative units; occasional monitoring of molecular mechanisms	Annual monitoring conducted in a greater number of sites with some collaboration with other partners; routine monitoring of some resistance mechanisms	Regular high-quality monitoring in multiple sites per administrative unit considering molecular mechanisms and bioassay data and collaborating with other partners and NMCP	3
Entomological Monitoring	Insectary	No functioning insectaries	Insectary present, but frequent ruptures in rearing and contamination of strains; frequent challenges in meeting needs	Insectary present with full-time staff; some capacity for strain verification; some challenges to get enough mosquitoes and occasional contamination	One or more insectary present; regular verification; rare challenges to get enough mosquitoes; some capacity for strain verification	Highly functioning insectaries with verification of strains, capacity for rearing wild strains, and quality controls in place	4

Entomological Monitoring	Data-based vector control decision-making	No consideration of entomological data	Limited data review; reliance on outdated data; uncoordinated data analysis with limited collaboration with partners	Irregular and incomplete data review from multiple partners, sometimes in collaboration with research and funding partners	Collaborative but irregular review of entomological data, sometimes providing timely evidence for decisions	Collaborative regular review of entomological data from multiple sources for vector control decisions	4
Entomological Monitoring	Vector bionomics monitoring or research	No longitudinal monitoring or research done in country	Limited longitudinal monitoring and research done in country	Regular vector bionomics monitoring and vector control research done in country, but weaker role in decision-making	Regular vector bionomics and vector control research done in country but insufficient to respond to all major needs of the national program	Regular monitoring driven by program priorities alongside research done in country to provide timely data on the best malaria vector control	3
Entomological Monitoring	Institutionalization of funding	No resources	Supported by external partners; no host government funding	Some host country government funding	>50% funded by host country government	Fully funded by host country government	2
ITNs	Consistent distribution channels, in accordance with national strategy	Infrequent campaigns; no continuous distribution	Regular campaigns; no continuous distribution	Regular campaigns; inconsistent continuous distribution	Regular campaigns; at least one well-managed continuous distribution channel	Regular, well-executed campaigns; well-managed continuous distribution channels	4
ITNs	Regular supervision of routine ITN distribution (e.g. HFs, schools, communities)	No regular supervision	0-25% of sites regularly supervised	26-50% of sites regularly supervised	51-75% of sites regularly supervised	>75% of sites regularly supervised	4

ITNs	ITN distribution reporting capabilities	ITNs distributed not reported into LMIS (or other system)	Some ITNs distributed reported routinely	Some ITNs distributed reported routinely but cannot be disaggregated by channel	ITNs distributed reported routinely and disaggregated by channel	All ITNs distributed captured routinely, disaggregated, and reported electronically	3
IRS	Host country government's IRS implementation capacity	N/A, no host country government implemented spray campaign	Very limited capacity to implement minor aspects of spray campaign	Capacity to implement some aspects of spray campaign	Capacity to implement most aspects of spray campaign	Implements spray campaign independently	1
IRS	Institutionalization of funding	N/A, no IRS conducted in country	No host country government funding, only supported by external sources	Limited host country government funding in addition to external sources	>50% funded by host country government in addition to external sources	Fully funded by host country government, no external sources	2
IRS	Coverage of government-implemented spray campaign	N/A, no government-implemented spray campaign	Spray coverage not reported	≥85% coverage in some government-sprayed areas	≥85% coverage in most government-sprayed areas	≥85% coverage in all government-sprayed areas	1
IRS	Host country government and local institution IRS monitoring capacity: IRS quality/residual efficacy	N/A, no IRS conducted in country	No capacity (i.e. no staff hired or trained)	Limited ability to monitor IRS (i.e. staff hired, but need training and rely heavily on external assistance)	Occasional ability to monitor IRS (i.e. staff hired and trained, limited reliance on external assistance)	Independent monitoring for IRS quality/residual efficacy (i.e. fully trained staff without need for external assistance)	3
IRS	Host country government IRS monitoring capacity: environmental compliance	N/A, no IRS conducted in country	No capacity	Limited ability to monitor EC (i.e. staff hired, but need training and rely heavily on external assistance)	Occasional ability to monitor EC (i.e. staff hired and trained, limited reliance on external assistance)	Independent EC monitoring	2

Figure B2. Category: Case Management

Activity	Metrics/Criteria	Relative Continuum					Estimate Level
		1	2	3	4	5	
Community-Based	Coverage of CHWs trained in and providing CM (geographic or numerical target)	No CHWs conducting CM	0-25% of national target met	26-50% of national target met	51-75% of national target met	76-100% of national target met	4
Community-Based	Regular supervision of CHWs in CM as per national QA/QC guidelines	No CHWs regularly supervised in CM	0-25% of CHWs regularly supervised in CM	26-50% of CHWs regularly supervised in CM	51-75% of CHWs regularly supervised in CM	76-100% of CHWs regularly supervised in CM	3
Community-Based	CHW reporting	CHW-managed cases not reported into HMIS	Some CHW-managed cases routinely reported into HMIS	Cases routinely reported into HMIS but not disaggregated from facility-reported cases	Cases routinely reported into HMIS and can be disaggregated from facility-reported cases	All CHW case data routinely captured and reported electronically	4
Community-Based	Institutionalization of funding (salaries and/or other support)	No resources	Only supported by external partners, no host country government funding	Some host country government funding	>50% funded by host country government	Fully funded by host country government	2
Facility-Based	Access to care (within 5 km of a health facility or as per national definition)	0-20% of population has access	21-40% of population has access	41-60% of population has access	61-80% of population has access	>80% of population has access	2
Facility-Based	Regular supervision of public facilities in CM	No regular supervision in CM	1-25% of facilities regularly supervised in CM	26-50% of facilities regularly supervised in CM	51-75% of facilities regularly supervised in CM	>75% of facilities regularly supervised in CM	3

Facility-Based	Drug resistance monitoring	No TES performed in last 3 years	TES performed in last 3 years but results not available	Recent TES results available (within last 3 years) but no training in molecular testing	Recent TES results available (within last 3 years) and in-country staff trained in molecular testing	Recent TES results available (within last 3 years) and in-country capability for molecular testing	4
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Figure B3. Category: Drug-Based Prevention

Activity	Metrics/Criteria	Relative Continuum					Estimate Level
		1	2	3	4	5	
MIP	National MIP policy	No policy	Policy exists but is not comprehensive (does not cover all aspects of MIP: ITN, CM, and if applicable IPTp)	Comprehensive policy exists, but not all WHO recommendations included	Policy meets current WHO recommended MIP prevention	Comprehensive, WHO-aligned policy is actively implemented	3
MIP	Country policy adoption/adaptation of 2016 WHO ANC guidelines	No policy	Country has started discussions for adopting guidelines but still implements FANC	Country has policy with 2016 guidelines but no provision for early delivery of IPTp	Country policy is aligned with 2016 guidelines and has provision for delivery of IPTp at 13-16 weeks	Country policy is aligned with 2016 guidelines, has a provision for delivery of IPTp at 13-16 weeks, and is implemented at facility level	4
MIP	Tracking ANC contacts in the HMIS	Not tracked	First ANC visits tracked in the HMIS	1-3 ANC visits tracked in the HMIS	Up to 4 ANC visits tracked in the HMIS	All ANC visits in line with 2016 guidelines tracked in HMIS	4

MIP	National MIP working group established and coordinating effectively	No working group	Working group formed and meets ad hoc, TORs established	Working group engages in regular coordination but lacks mechanisms to ensure integration across technical areas	Working group coordinates at national level only with malaria and maternal health with limited mechanisms to ensure integration across technical areas	Working group coordinates regularly at national and sub-national level with malaria and maternal health and ensures integration across technical areas	4
MIP	Supportive MIP supervision in health facilities	No regular supervision	1-25% of facilities regularly supervised	26-50% of facilities regularly supervised	51-75% of facilities regularly supervised	>75% of facilities regularly supervised	3
MIP	Routine SP resistance monitoring via biomarkers	No SP resistance monitoring	SP resistance monitoring done in the last 6-10 years	SP resistance monitoring done in the last 4-5 years	SP resistance monitoring done in the last 3 years	SP resistance monitoring done in the last 3 years and results published or being published	2

Figure B4. Category: Supply Chain

Metrics/Criteria	Relative Continuum					Estimate Level
	1	2	3	4	5	
Forecasting and Procurement Planning	Forecasts created ad hoc with no corresponding supply plans developed	Forecasts and supply plans overly reliant on assumptions or outdated/limited data, developed annually, and not necessarily used to inform initial procurements	Forecasts and supply plans incorporating service and/or consumption data are updated semi-annually and inform ongoing procurement actions	With donor support forecasts and supply plans incorporate near real-time services, consumption data, and seasonality; quarterly updates with corresponding changes made to procurement actions	Independent forecasts incorporating near real-time service, consumption data, and seasonality are updated quarterly; supply plans are updated monthly to inform ongoing procurement actions	3 <i>(Note: Quantification and supply planning only done annual in DRC, all other factors for #3 met)</i>

Storage	Quantity and quality of infrastructure, as well as operations at all stock holding levels (central, sub-central/facility), compromise ability to ensure commodities, including ITNs, are adequately protected from damage, deterioration, and loss	Quantity and quality of infrastructure, as well as operations in at least one stock holding level ensure that commodities, including ITNs, are adequately protected from damage, deterioration and loss	Quantity and quality of infrastructure, as well as operations in at least two stock holding levels ensures that commodities, including ITNs are adequately protected from damage, deterioration and loss	With donor support, host country can scale infrastructure requirements, including for routine and campaign ITNs, via outsourced warehousing and ensure quality of infrastructure and operations at all stock holding levels, even those provided through the private sector, adequately protect commodities from damage, deterioration and loss	With very limited or no donor support, host country can scale infrastructure requirements, including for routine and campaign ITNs, via outsourced warehousing and ensure quality of infrastructure and operations at all stock holding levels, even those provided through the private sector, adequately protect commodities from damage, deterioration and loss	2
Inventory Management	SOPs for inventory management non-existent, outdated or unable to be routinely adhered to	Updated SOPs for paper-based inventory management system in place but discrepancies between virtual and actual stock figures are common	SOPs for paper-based inventory management system at lower levels and use of a electronic inventory management at central level (WMS) maintain inventory count accuracy but data on expiration or lot/batch insufficiently tracked	Inventory data, incorporating multiple commodity attributes (quantity, expiration, lot/batch) is digitized in at least two stock holding levels with inventory records considered to be reliable	All inventory data attributes digitized at all stock holding levels with near real-time stock visibility, validated for accuracy, available across all stock holding points	3

<p>Logistics Management Information System</p>	<p>No LMIS available for aggregating, analyzing, validating and displaying logistics data from lower levels of the logistics system</p>	<p>Paper-based LMIS that aggregates and displays logistics data from lower levels of the logistics system is available and used primarily to inform facility level resupply; poor LMIS reporting completeness and timeliness</p>	<p>Paper-based LMIS that aggregates and displays logistics data from lower levels of the logistics system used to inform facility level resupply, produce metrics for performance monitoring, and process improvement initiatives; adequate LMIS reporting completeness and timeliness</p>	<p>LMIS with digitized facility-level inventory and consumption data visible across some supply chain levels used to inform resupply, performance monitoring, process improvement initiatives and strategic planning; good LMIS reporting completeness and timeliness</p>	<p>LMIS with digitized facility-level inventory and consumption data visible across all supply chain levels is operational and integrated with other MIS platforms; excellent LMIS reporting completeness and timeliness</p>	<p>3</p>
<p>Transportation Management</p>	<p>Higher level resupply points irregularly allocate resources for resupplying lower level facilities; lower level facilities often required to provide own transport to retrieve commodities from resupply points; ITN distribution unorganized and inadequately resourced</p>	<p>System exists for transportation from higher to lower stock holding levels but is irregularly executed due to limited planning, lack of funding or incapacitated vehicles; significant donor-supplied transport resources including for ITN distribution</p>	<p>Transportation consistently undertaken per schedule, capacity exists to use third-party transporters, routes are regularized, proofs of delivery reviewed and reconciled; significant donor-supplied transport resources including ITN distribution</p>	<p>Transportation planning regularized and optimized with third-party transport used often, tracking of vehicles via regular check-ins or GPS, paper proofs of delivery reviewed and reconciled, key performance indicators tracked; some donor funding for transportation resources</p>	<p>Transportation scheduling and routing optimized, third-party transporter use regularized, GPS vehicle tracking, electronic proofs of delivery reviewed and reconciled, key performance indicators tracked and 3PL assignments/lanes allocated based on best value; no donor funding</p>	<p>3</p>

<p>Routine Distribution and Resupply</p>	<p>No routine requisition and resupply schedule between stock holding levels</p>	<p>Routine requisition and resupply between at least two stock holding levels according to a schedule but not well informed by consistently accurate demand and inventory figures</p>	<p>Routine resupply between all stock holding levels, informed by adequate demand and inventory accuracy, conducted according to a schedule, validated by malaria program personnel and routinely monitored</p>	<p>Donor-supported routine resupply between all stock holding levels, informed by accurate, near real-time demand signals and validated by malaria program staff, done according to a schedule and routinely monitored</p>	<p>Routine resupply between all stock holding levels, informed by accurate, timely and near real-time demand signals, done with limited or no donor support according to a schedule shared with all levels; malaria program management has visibility into planning, execution and results</p>	<p>3</p>
<p>Health Commodity Regulations and Policy</p>	<p>Legal basis for a medicine (and other health commodity) regulatory agency to function is absent or inappropriate; formal organizational structure for in-country stakeholders and relevant agencies with delegated authority absent or inadequate (e.g., up-to-date organogram of MOH); human and financial capacity to enable regulation weak or absent</p>	<p>Medicines framework exists and is sufficient to support basic regulatory functions including clinical dossier review (licensing) and marketing authorization with registration; documented domestic financial support to enable regulatory activities, including HR</p>	<p>All SDP levels have policies that address STG, quality assurance and HR; no consistent approach to pharmacovigilance or a standard reporting structure for pharmacovigilance events; overall quality management system in place to support interface of product licensing, registration, manufacturing, post-marketing surveillance</p>	<p>Strong policy and strategic leadership by government with firm grasp of budgets and financial sustainability; robust implementation plans, and supportive supervision, capacity building and guidance to managers within the system</p>	<p>MOH leads strategic functions such as policy formulation, quality assurance and oversight of policy implementation funds; ability to ensure product quality, automated drug registration, clear/transparent importation process, robust post-market surveillance system, and track and trace regulations developed or in process of implementation</p>	<p>3</p>

Supply Chain Strategy and Governance	Human, organizational and financial capacity to develop or execute a supply chain strategic plan incorporating malaria SC specifics absent or inadequate	Human, organizational and financial capacity sufficient to develop and execute portions of a supply chain strategic plan incorporating malaria SC specifics	Approved, up-to-date supply chain strategic plan (with clear roles and responsibilities for all SC levels, stakeholder mapping, costs); includes risk mitigation and workforce development plans	Approved, up-to-date supply chain strategic plan (with clear roles and responsibilities for all SC levels, stakeholder mapping, costs); implementation of workforce development and risk mitigation plans with significant donor support	Human, organizational and financial capacity to execute and maintain a supply chain strategic plan incorporating malaria SC specifics present and maintained with minimum donor support	3 <i>(Note: DRC's national supply chain strategic plan does not address risk mitigation, all other factors for #3 are met)</i>
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Figure B5. Category: Strategic Information

Activity	Metrics/Criteria	Relative Continuum					Estimate Level
		1	2	3	4	5	
Data, Surveillance, Monitoring & Evaluation	Overall HMIS reporting rate (CY 2019)	<60%	60-69%	70-79%	80-89%	90%+	5
Data, Surveillance, Monitoring & Evaluation	Element-specific reporting rate: "Confirmed malaria cases among children under age 5" (CY 2019)	<60%	60-69%	70-79%	80-89%	90%+	

<p>Data, Surveillance, Monitoring & Evaluation</p>	<p>HMIS data quality assurance and quality control</p>	<p>Few standards exist for data collection, assembly, and analysis; ad hoc data quality reviews and audits for specific needs; no data-quality assurance plan and national coordinating body exist</p>	<p>Standards used for data collection, assembly and analysis in limited settings; some electronic tools used for data quality review and audit; data-quality assurance plan available</p>	<p>Standards defined and implemented nationally for data collection, assembly, analysis; data quality reviews and audits scheduled and include remediation process for identified issues; SM&E staff seconded to NMCP</p>	<p>Data reviews and audits integrated in strategic plans and conducted on a regular schedule; national data-quality governing body meets regularly; issues identified addressed via established remediation process</p>	<p>Continual review and audit (automated and manual) to ensure defined levels of data quality; data quality metrics used for ongoing improvement; national governing body and key stakeholders review data-quality assurance plan periodically</p>	<p>2</p>
<p>Data, Surveillance, Monitoring & Evaluation</p>	<p>Reporting Systems</p>	<p>Data collection tools not standardized and procedures inconsistently followed; unstructured data collection and storage; no NMCP access to HMIS malaria data</p>	<p>Data systems support longitudinal health data (clinical, surveillance, M&E) in limited settings; data available for centrally mandated reporting; parallel malaria reporting system may exist</p>	<p>Most platforms/applications ensure data availability at all levels for decision support and M&E for authorized users; no parallel malaria reporting system; NMCP has access to HMIS malaria data</p>	<p>Data systems ensure reliable and appropriate access to data at all levels for authorized users; reporting requirement changes accommodated with minimal disruption to data availability; data systems support secondary data use; NMCP has access</p>	<p>Data availability monitored for continual improvements and to meet emerging health sector needs; reporting available from private facilities and community-level providers and can be disaggregated</p>	<p>3</p>

Data, Surveillance, Monitoring & Evaluation	Data collection	Data not collected at community level (CHWs) and irregular or inaccurate at rural and more central health facilities; system is entirely paper based, but registers may be absent	Collection well managed at health facility level, but incomplete at community level; most collection and aggregation is paper based; registers generally available; timeliness and completeness remain challenges	Collection well managed at health facility and community level; most collection is paper based, aggregation is electronic; registers available; timeliness and completeness >80%, feedback to collectors limited	Collection at all levels; collection is electronic and sometimes paper based, aggregation is electronic; registers hold all program critical data; timeliness and completeness >80%, feedback to collectors standardized	Data collection occurs at all levels and is transmitted in real time with timely feedback to collectors and users of data; data checks exist at point of collection; electronic transmission is the norm, including to data collectors	3
Data, Surveillance, Monitoring & Evaluation	Data use	Activities (analysis, interpretation, visualization) to ensure data use are rarely implemented	Limited data use activities are implemented (bulletin developed but analysis and interpretation for decision- making needs strengthening)	Country conducts regular data use activities (review meetings, bulletin at least quarterly, at least at the central level)	Country conducts regular data use activities at all levels (review meetings, bulletins, dashboard at least quarterly)	Country has developed own high-quality dashboard to facilitate data use and informed decision-making is evident at all levels frequently	2
Operations Research and Program Evaluation	PMI in-country OR/PE experience	No previous PMI OR/PE experience in country	PMI team has prepared concept notes but has not completed protocols or conducted OR/PE	PMI team has completed protocols and received approval for OR/PE; studies in planning, underway, or recently completed	PMI team and/or other country partners have completed a OR/PE study and prepared and shared reports	Multiple OR/PE studies completed that address malaria program implementation bottlenecks; publication and sharing of results, with involvement from MOH co-investigators	2

Operations Research and Program Evaluation	Country mechanisms for OR/PE review	No in-country process for research review, determination or IRB processes	Limited in-country processes for research review, determination and IRB oversight	Processes in place for research and IRB review with federal-wide assurance approval, but no previous PMI in-country OR/PE engagement	Processes in place for research and IRB review with federal-wide assurance approval with previous PMI in-country OR/PE engagement	Full complement of research review, approval, and oversight processes including data safety and monitoring boards; systems for results sharing	3
Operations Research and Program Evaluation	In-country partnerships for OR/PE	No in-country partners (academic, NGO, or other) with OR/PE experience	1-2 in-country partners with OR/PE experience, but no malaria-specific experience	3+ in-country partners with OR/PE experience; 1+ with some malaria expertise; no current PMI OR/PE work	3+ in-country partners with OR/PE experience; 1+ with malaria expertise; current or recent PMI OR/PE work	Multiple in-country partners with malaria experience in PMI OR/PE, including completed past work and reporting on malaria OR/PE	3
Operations Research and Program Evaluation	MOH capacity for conceptualizing problems needing scientific evaluation	No experience	Some but limited experience in identifying programmatic problems and prioritization	Experience with identifying program problems and prioritizing OR/PE	Experience with identifying problems needing OR/PE and developing study approaches with partners	Extensive experience with identification, prioritization, proposal development and conducting OR/PE	3

Figure B6. Category: Support Systems

Activity	Metrics/Criteria	Relative Continuum					Estimate Level
		1	2	3	4	5	
SBC	National malaria SBC strategy to guide design and implementation of malaria SBC activities	No strategy	Strategy exists, but is low quality and missing key elements from the RBM SBC Working Group National Malaria SBC Strategy Template	High-quality strategy exists, but no evidence it has been used to guide design or implementation	High-quality strategy exists and is sometimes used to guide design and implementation of SBC activities	High-quality strategy exists and is used routinely to guide design and implementation of SBC activities	2
SBC	SBC technical working group	No group	Group exists in theory, but has not been operationalized or institutionalized	Group exists and meets routinely, but lacks clear pathways for coordination	Group exists and has effective pathways for coordination, but generally only coordinates at the national level	Group engages effectively in regular coordination at national and sub-national level	1
SBC	Formative assessments	No assessment of any kind conducted in last five years	No assessment of any kind conducted in last three years	Assessment conducted in last three years, but with significant quality issues	High-quality assessment conducted in the past three years, but results not widely disseminated	High-quality assessment conducted in the past three years and results widely disseminated	1
SBC	SBC interventions (targeted and tailored based on available behavioral, demographic, and epidemiological data)	No evidence available data used to inform intervention design	Available evidence referenced in intervention design; results do not typically inform final design, resulting in broad and unfocused SBC interventions	Available evidence generally used to loosely target SBC interventions to specific populations, but interventions not tailored to address behavioral determinants of those populations	Available evidence used to loosely target SBC interventions to specific populations and interventions somewhat tailored to address behavioral determinants of those populations	Available evidence used to target SBC interventions to specific populations and interventions well-tailored to address behavioral determinants of those populations	1

SBC	Capacity to support implementation of SBC activities	Generally weak at central and peripheral levels	Generally strong at the central level with sufficient expertise and resources to deliver high-quality SBC interventions	Generally strong at central and provincial levels with sufficient expertise and resources to deliver high-quality SBC interventions	Generally strong at the central, provincial, and district levels with sufficient expertise and resources to deliver high-quality SBC interventions	Generally strong at the central, provincial, district, and community levels with sufficient expertise and resources to deliver high-quality SBC interventions	1
Additional Health Systems Strengthening	Staffing	No staff	Manager and a few technical staff; not all intervention areas covered	Manager and technical staff for each intervention area; many staff have limited training and experience; limited program support staff	Full staffing of program areas and support systems but some staff need further training; limited plans and opportunities for training	Fully staffed with relevant training and experience; complete plan for professional development	3
Additional Health Systems Strengthening	Office space, transport	No office space or transport	Office space exists but is insufficient for staff; transport available at intervals but limited for program needs	Office space adequate for current staff but no growth possible; office not well positioned for access to MOH leadership; transport available but insufficient and not well managed/maintained	Office space adequate for current staff and some technical areas (e.g., lab) but not fully adequate for growth and all technical services; transport mostly sufficient	Office space fully adequate for current staff and technical needs (lab, insectary, meeting space, etc) and some growth and well positioned in MOH; transport fully available for needs, including trucks and 4-wheel drive vehicles as needed (all maintained and managed)	2

Additional Health Systems Strengthening	Internet connectivity	No internet	Intermittent connectivity; poor bandwidth; challenging maintenance; very little budget	Mostly connected with some outages; ok but not ideal bandwidth; irregular maintenance; modest budget	Generally stable connections, adequate bandwidth for most work, fair to good maintenance and sufficient budget	Fully connected, maintained, good bandwidth for all needs, and sufficient budget including all needed hardware and software	2
Additional Health Systems Strengthening	NMCP placement in MOH	NMCP exists but barely visible in MOH structure	NMCP visible in the MOH structure but NMCP manager reports to supervisor who is low in the MOH system	NMCP visible and manager reports to high-level leader in MOH (e.g., Director of Public Health or Permanent Secretary for Health)	NMCP highly visible and reports at a high level in MOH and has some access to other ministry leadership (e.g., education, agriculture)	NMCP highly visible in MOH and all other relevant ministries with ready access to country leadership (e.g., president/prime minister and parliament)	3