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

Thailand, Laos, and Regional

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 Thailand, Laos, and the Greater Mekong sub-region (GMS) to end malaria. PMI has been a proud partner of Thailand, Laos, and GMS countries since 2011 helping to decrease malaria morbidity and mortality through investments totaling almost $47.5 million.

The proposed PMI fiscal year (FY) 2021 planning budget for the Regional Development Mission Asia (RDMA) including support for Thailand, Laos, and limited regional activities is $3 million. This Malaria Operational Plan (MOP) summary outlines planned PMI activities in Thailand, Laos, and the region 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 Programs (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 relevant GMS Governments 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 Thailand's and Laos' programs. 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.

Regional

Impressive progress has been made towards malaria elimination in the GMS. The six GMS countries reduced their malaria case incidence by an estimated 81% between 2012 and 2019, and malaria death rates fell by 95% over the same period. Every country in the region aims to

eliminate *Plasmodium falciparum (Pf)* malaria from the sub-region by 2025 and all species of human malaria by 2030.

PMI has supported the regional therapeutic efficacy study (TES) network to monitor the treatment efficacy of current first-line and potential second-line treatments. All countries in the GMS now recommend ACTs for first-line treatment of *P. falciparum*; however, treatment regimens and drug choice differ from country to country. The most recent TES/integrated drug efficacy surveillance (iDES) results show emergence of resistance to dihydroartemisinin-piperaquine (DHA-PIP) in Vietnam, Laos, and some provinces of Thailand.

The GMS countries have submitted a new Regional Artemisinin Initiative (RAI) funding request to the Global Fund for 2021-2023 which includes targeting elimination of *Pf* malaria by 2025. The main components of the regional funding request include:

1. Tackle the threat of multi-drug resistance through a close monitoring of treatment efficacy and molecular markers.
2. Ensure all GMS populations at risk including migrants, mobile, ethnic, and vulnerable populations are served with prevention and case management services and ensure that islands of transmission (obviously seen at border areas) are reduced and eventually disappear.
3. Foster regional responses through strengthening a sense of malaria elimination as regional public good and broadening the partnership (including non-health sectors).
4. Strengthening interactive regional data sharing across the region.
5. Ensure a triangle of proactive regional governance, management, and independent monitoring.

Thailand

Between 2016 and 2019, Thailand experienced a 72% reduction of malaria cases from 19,093 to 5,414. Reductions in the morbidity rate were reported from 1.3 per 1,000 in 2016 to 0.36 per 1,000 in 2019, and the number of *Pf* cases was reduced by 76% between 2016 and 2019 (from 3,264 to 784 cases). During this same period, a 37% reduction of active/residual foci was also noted (1,106 to 701), of which only 138 out of 701 are active *Pf* foci. In 2020, 40 of 77 provinces nationwide are considered free of malaria transmission. Thailand plans to continue to implement malaria acceleration activities to meet the country's malaria free goal by 2024.

Thailand's progress to date includes achieving partial integration of its malaria activities with its general health services, and across other ministries as well as provincial cross-border collaborations. The online Malaria Information System (MIS) has achieved near real-time case-based surveillance and 1-3-7 (notify-investigate-response) activities, and has increased use of data for program planning, monitoring, and supervision. The 1-3-7 approach currently has high

notification and investigation rates at 80%, but the response rate and the quality of responses can be improved. In an effort to strengthen surveillance systems, Thailand has developed an updated Malaria Elimination Operational Manual (MEOP) (2021–2023) to better monitor and identify areas of vulnerability, map key populations, monitor movement of people from endemic areas, and monitor receptivity factors and behavior. The MEOP falls under the current National Malaria Strategic Plan (2017-2026). Thailand is also developing an electronic logistic management information system (eLMIS) to further strengthen commodity supply chain information.

In the Global Fund country funding request for 2021-2023, Thailand aims to achieve high coverage of key interventions using area-based micro-stratification and targeting A1 and A2 areas. The NMCP also plans to intensify focus on active *Pf* foci and to accelerate elimination efforts in the five high burden provinces that account for 72% of malaria cases as of 2019. Special emphasis will also be placed on accelerating elimination efforts in the nine temporary refugee shelters on the Thailand-Burma border. Between 2020 and 2023, Thailand expects to achieve 96% reduction in overall malaria burden (projected 56 *Pv* cases), reduce malaria morbidity rate from 0.36 per 1,000 to 0.013 per 1,000, and certify a total of 910 of 928 (98%) of districts as free of malaria transmission.

Laos

Much progress has been made, particularly during the last five years, to reduce the malaria burden in Laos. The number of malaria cases decreased between 2010 and 2019, from 24,036 to 6,593 cases. After rapid diagnostic tests (RDTs) were introduced in 2012 there was an increase in cases detected, however the program has continued to maintain impact with annual declines in case numbers. Malaria deaths decreased from 24 in 2010 to six in 2018 and zero in 2019.

Of the malaria cases reported in 2019, 32% were *Pf* infections. There continues a declining trend in the number of *Pf* cases that have been detected in Laos since 2010, when 98% of cases were attributed to this species. Increasing proportions of *P. vivax* (*Pv*) are being recorded in the country, including in some specific northern provinces. The malaria burden remains highest in the southern part of the country, albeit with fewer high burden provinces.

About 95% of malaria cases are concentrated in the five southern provinces while malaria transmission in the northern provinces is low and sporadic. In the endemic areas of Laos, there are a wide variety of mobile and static population groups at risk of malaria. Villages that are located within the high malaria risk forested areas of Laos belong to a broad range of ethnic minority groups. Approximately 240 distinct languages spoken in Laos makes communication of health messages extremely challenging. Poverty in these communities is often extreme.

The malaria stratification by the Health Facility Catchment Areas (HFCAs) throughout the country indicates that 61.2% are malaria free. As such, the NMCP intends to focus its malaria elimination efforts on stratum 3 and 4, shown in the table below.

Strata	Classification	Definition	No. of HFCAs	Percentage
Stratum 1	Malaria free	HFCAs with no cases	752	61.2 %
Stratum 2	Low risk	HFCAs with <5 cases	196	15.9 %
Stratum 3	Moderate risk	HFCAs with 5-20 cases	96	7.8 %
Stratum 4	High risk	HFCAs with >20 cases	185	15.1 %

Laos submitted a country funding request to the Global Fund as part of the GMS countries RAI3e package for 2021-2023. As a component of this process, the NMCP updated its national strategic plan. The new Malaria National Strategy Plan (2021-2025) highlights two phases of malaria elimination in Laos. In Phase One (2021-2025), the NMCP aims to eliminate all species of malaria in the 13 northern provinces, reduce the incidence of indigenous cases of *Pv* to <1 per 1,000 in the southern provinces, and prevent the re-establishment of malaria in areas where it was eliminated. In Phase Two (2026-2030), the NMCP will eliminate all malaria transmission in the entire country and prevent re-establishment of malaria in areas where it was eliminated. The end goal is to initiate the WHO certification process for establishing malaria free country status.

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

Annex A. Gap Analysis Tables

Thailand - Insecticide-treated Mosquito Net (ITN) Gap Analysis			
Calendar Year	**2020**	**2021**	**2022**
Total targeted population [1]	599,547	457,959	318,453
Continuous Distribution Needs			
Channel #1: Forest goers [2]	96,181	69,279	42,773
Channel #2: Migrants (M1+M2) [3]	86,961	60,873	36,524
Chanel #3: Refugee camps [4]	51,852	5,185	10,370
Estimated total need for continuous channels	234,993	135,337	89,667
Mass Distribution Needs			
Mass distribution [5]	92,806	66,848	41,272
Estimated total need for campaigns	92,806	66,848	41,272
Total ITN Need: Routine and Campaign	**327,799**	**202,185**	**130,939**
Partner Contributions			
ITNs carried over from previous year	0	0	0
ITNs from MOH	0	0	0
ITNs from Global Fund [6]	48,090	26,931	16,158
ITNs from other donors	0	0	0
ITNs planned with PMI funding	102,150	130,873	60,000
Total ITNs Available	**150,240**	**157,804**	**76,158**
Total ITN Surplus (Gap)	**-177,559**	**-44,381**	**-54,781**

[1] Thai (A1+A2 malaria transmission areas; 506,214) and displaced persons (DPP) living in temporary shelters (93,333 based on UNHCR in Dec. 2019). Source: DVBD (document: Thailand DVBD TargetY3) & CSO. For 2021 and 2022, applied population growth rate of 2.9% (data from CIA Factbook) and DPP remained constant. Assumed a reduction of persons at risk by 30% and 40% for 2021 and 2022, respectively.
[2] 19% of A1/A2 population; ITN 1:1.
[3] M1+M2 migrants accessing ACD and PCD; provide ITN 1:1.8. Assumed a reduction of persons at risk by 20% from 195,662 in 2019 and a reduction of 30% and 40% for 2021 and 2022 respectively.
[4] DVBD has planned to distribute ITNs to the 9 refugee camps in 2020 and to replace 10% of nets in 2021 and 20% in 2022. The population was 93,333 in 2020, and it is expected to maintain a similar population in 2021 and 2022 (UNHCR); ITNs 1:1.8.
[5] Active rolling campaigns to rotated coverage areas each year. Assumption: One third of the target population each year; ITN 1:1.8.
[6] The Global Fund commodity contributions for 2021 and 2022 are estimates based on the funding request. The current grant ends in December 2020.

Thailand - Rapid Diagnostic Test (RDT) Gap Analysis			
Calendar Year	**2020**	**2021**	**2022**
RDT Needs			
Total country population [1]	69,854,574	70,057,153	70,260,318
Population at risk for malaria [2]	599,547	457,959	318,453
PMI-targeted at-risk population	599,547	457,959	318,453
Targeted number of RDTs needed [3]	186,980	115,940	67,640
Buffer stock [4]	46,745	28,985	16,910
Total RDT Needs	**233,725**	**144,925**	**84,550**
Partner Contributions (to PMI target population if not entire area at risk)			
RDTs carried over from previous year [5]	40,315	87,060	116,045
RDTs from Government	0	0	0
RDTs from Global Fund [6]	233,725	144,925	84,550
RDTs from other donors	0	0	0
RDTs planned with PMI funding	0	0	0
Total RDTs Available	**274,040**	**231,985**	**200,595**
Total RDT Surplus (Gap) [7]	**87,060**	**116,045**	**132,955**

[1] Population growth rate = 0.29% (CIA Factbook, 2018 est.).
[2] Thai (A1+A2 malaria transmission areas; 506,214) and displaced persons (DPP) living in temporary shelters (93,333 based on UNHCR in Dec. 2019). Source: DVBD (document: Thailand DVBD TargetY3) & CSO. For 2021 and 2022, applied population growth rate of 2.9% (data from CIA Factbook) and DPP remained constant. Assumed a reduction of persons at risk by 40% and 50% for 2021 and 2022, respectively.
[3] Year 2020: RDT needs calculated from PCD in 42 PHO, SMRU ACD in 3 southern provinces, and ACD from VBDC=186,980 tests. Year 2021: an estimated 40% reduction in malaria cases, 115,940 tests from 400 MPs, 509 HPHs, SMRU, ACD by VBDC, RACD in 9 refugee camps. Year 2022: an estimated 50% reduction in malaria cases, 67,640 tests from 400 MPs, 509 HPHs, SMRU, ACD by VBDC, RACD in 9 refugee camps. Source: RAI3E procurement document.
[4] Needs include 20% buffer.
[5] Includes stock on hand for 2020; for 2021 & 2021, surplus from previous year.
[6] The Global Fund commodity contributions for FY21 and FY22 are estimates based on the funding request. The current grant ends in December 2020.
[7] Surplus/gap represents *Total Available - RDT used per case*

Thailand - Injectable Artesunate Gap Analysis			
Calendar Year	**2020**	**2021**	**2022**
Injectable Artesunate Needs			
Projected number of severe cases [1]	72	43	22
Injectable artesunate needs [2]	1,080	645	330
Buffer stock [3]	6,360	6,360	6,360
Total Injectable Artesunate Needs (Vial)	**7,440**	**7,005**	**6,690**
Partner Contributions			
Injectable vials carried over from previous year [4]	53	8,166	9,395
Injectable vials from Government	3,193	1,874	2,586
Injectable vials from Global Fund [5]	0	0	0
Injectable vials from other donors	0	0	0
Injectable vials planned with PMI funding [6]	6,000	0	6,000
Total Injectable Artesunate Vials Available	**9,246**	**10,040**	**17,981**
Total Injectable Artesunate Vials Surplus (Gap)	**8,166**	**9,395**	**17,651**

[1] Number of severe cases in 2019 was 103. Less than 5% of severe cases occur in children under 5 years of age. Projected 30%, 40%, and 50% reduction each year.
[2] Number of vials per adult case as per the national treatment guidelines: 15 vials (2.4mg/kg/dose, 3 doses/day; 1 dose/day up to 2 subsequent days). 60mg/vial.
[3] Minimum stock: 30 vials in each of the 34 regional hospitals and 87 provincial hospitals plus 77 provincial health offices + 13 ODPC + DVBD.
[4] Includes stock on hand for 2020; for 2021 & 2021, surplus is 100% of buffer stock.
[5] There are no known Global Fund injectable AS contributions for 2021 and 2022 based on the funding request. The current grant ends in December 2020.
[6] 2022 planned procurement is being funded by PMI FY 2020 funds.

Thailand - Artemisinin-based Combination Therapy (ACT) Gap Analysis			
Calendar Year	**2020**	**2021**	**2022**
ACT Needs			
Total country population [1]	69,854,574	70,057,153	70,260,318
Population at risk for malaria [2]	599,547	457,959	318,453
PMI-targeted at-risk population	599,547	457,959	318,453
Total projected number of *Pf* malaria cases [3]	549	329	165
Buffer stock [4]	4,388	4,244	4,211
Total ACT Needs	**4,937**	**4,573**	**4,376**
Partner Contributions (to PMI target population if not entire area at risk)[1]			
ACT carried over from previous year [5]	2,326	1,889	2,180
ACT from Government	2,000	2,800	1,620
ACT from Global Fund [6]	0	0	0
ACT from other donors	0	0	0
ACT planned with PMI funding	0	0	0
Total ACT Available	**4,326**	**4,689**	**3,800**
Total ACT Surplus (Gap) [7]	**3,777**	**4,360**	**3,635**

[1] Population growth rate = 0.29% (CIA Factbook, 2018 est.).
[2] Thai (A1+A2 malaria transmission areas; 506,214) and displaced persons (DPP) living in temporary shelters (93,333 based on UNHCR in Dec. 2019). Source: DVBD (document: Thailand DVBD TargetY3) & CSO. For 2021 and 2022, applied population growth rate of 2.9% (data from CIA Factbook) and DPP remained constant. Assumed a reduction of persons at risk by 40% and 50% for 2021 and 2022, respectively.
[3] Confirmed cases in 2019 [949]; Cases for 2020-2022 calculated based on projected reductions. Source: DVBD.
[4] 2 packs of ACTS (DHA-PQP/ ATS-PYR) in each facility, plus 20% of the number of cases for central buffer stock. Total number of facilities in 77 provinces = 2035: malaria clinics = 207, malaria posts = 450, health promotion hospitals= 509, provincial health office=77, ODPC=13, district hospitals=779.
[5] 2020 stock includes 1571 of DHA-PQP and 755 of ATS_PYR. 2021 and 2022 includes surplus from previous year plus 50% of buffer stock.
[6] There are no known Global Fund ACT contributions for 2021 and 2022 based on the funding request. The current grant ends in December 2020.
[7] Surplus/gap represents *Total Available - ACTs consumed for malaria cases*

Thailand - Primaquine (PQ) Gap Analysis			
Calendar Year	**2020**	**2021**	**2022**
PQ Needs			
Total country population [1]	69,854,574	70,057,153	70,260,318
Population at risk for malaria [2]	599,547	457,959	318,453
Total projected number of malaria cases	4,038	3,461	1,731
Total projected number of *Pf* (single) [3]	549	329	165
Total projected number of *Pv* cases [3]	3,374	2,024	1,012
Buffer stock (tablets) [4]	65,905	65,591	65,355
Total PQ tablet (15mg) Needs [5]	**114,239**	**94,585**	**79,853**
Partner Contributions			
PQ tablets carried over from previous year [6]	456,000	203,833	0
PQ tablets from Government	0	0	0
PQ tablets from Global Fund	0	0	0
PQ tablets from other donors	0	0	0
PQ tablets planned with PMI funding	0	0	0
Total PQ tablets Available	**456,000**	**203,833**	**0**
Total PQ tablets Surplus (Gap) [7]	**407,666**	**174,839**	**-79,853**

[1] Population growth rate = 0.29% (CIA Factbook, 2018 est.).
[2] Thai (A1+A2 malaria transmission areas; 506,214) and displaced persons (DPP) living in temporary shelters (93,333 based on UNHCR in Dec. 2019). Source: DVBD (document: Thailand DVBD TargetY3) & CSO. For 2021 and 2022, applied population growth rate of 2.9% (data from CIA Factbook) and DPP remained constant. Assumed a reduction of persons at risk by 40% and 50% for 2021 and 2022, respectively.
[3] Projected cases in 2020 is 549 cases of *Pf* and *Pv* projected cases in 2020=3374; Cases for 2021-2022 calculated based on projected reductions (40% and 50%, respectively).
[4] 2 treatments each for *Pf* and *Pv* in each facility, plus 20% of the number of cases for central buffer stock. Total number of facilities in 77 provinces=2035: malaria clinics = 207, malaria posts = 450, health promotion hospitals= 509, provincial health office=77, ODPC=13, district hospitals=779.
[5] Assumes 15 mg tablets; *Pv* dosing is 15mg/day x 14 days and *Pf* is 30mg once. One adult Tx of PQ for *vivax* = 14 tablets and *Pf* = 2 tablets, and dose adjusted by age group. Including stock from health facilities 1*Pf* + 1*Pv* = 16 tablets.
[6] Carryover is 50% of the surplus.
[7] Surplus/gap represents *Total Available - ACTs consumed for malaria cases*

Thailand - Chloroquine (CQ) Gap Analysis			
Calendar Year	**2020**	**2021**	**2022**
CQ Needs			
Total country population [1]	69,854,574	70,057,153	70,260,318
Population at risk for malaria [2]	599,547	457,959	318,453
Total projected number of malaria cases	4,038	3,461	1,731
Pv cases [3]	3,374	2,024	1,012
Buffer stock (cases) [4]	4,745	4,375	4,172
Total CQ tablet Needs [5]	**81,188**	**63,988**	**51,844**
Partner Contributions			
CQ tablets carried over from previous year [6]	0	33,130	51,445
CQ tablets from Government	100,000	90,000	81,000
CQ tablets from Global Fund [7]	0	0	0
CQ tablets from other donors	0	0	0
CQ tablets planned with PMI funding	0	0	0
Total CQs Available	**100,000**	**123,130**	**132,445**
Total CQ Surplus (Gap) [8]	**66,260**	**102,890**	**122,325**

[1] Population growth rate = 0.29% (CIA Factbook, 2018 est.).
[2] Thai (A1+A2 malaria transmission areas; 506,214) and displaced persons (DPP) living in temporary shelters (93,333 based on UNHCR in Dec. 2019). Source: DVBD (document: Thailand DVBD TargetY3) & CSO. For 2021 and 2022, applied population growth rate of 2.9% (data from CIA Factbook) and DPP remained constant. Assumed a reduction of persons at risk by 40% and 50% for 2021 and 2022, respectively.
[3] Confirmed cases in 2019 [4820 cases of *Pv*]; *Pv* projected cases in 2020=3374. Cases for 2021-2022 calculated based on projected reductions (40% and 50%, respectively). Source: RAI3E funding request.
[4] 2 treatments in each HF, plus 20% of the number of cases for central buffer stock. Number of HFs in 79 provinces: MC = 217, MP = 450 (400 in 2021&2022), HPH= 554, and each provincial health office + ODPC + district hospital (community hospital).
[5] Assumes one adult Tx of CQ for *Pv* = 10 tablets.
[6] 2021 and 2022 includes 50% of surplus from previous year assuming 2-year shelf-life.
[7] There are no known Global Fund injectable AS contributions for 2021 and 2022 based on the funding request. The current grant ends in December 2020.
[8] Surplus/gap represents *Total Available - CQ consumed for Pv malaria cases.*

Laos - Insecticide-treated Mosquito Net (ITN) Gap Analysis			
Calendar Year	**2020***	**2021**	**2022**
Total targeted population [1]	1,673,814	1,573,316	1,596,129
Continuous Distribution Needs			
Channel #1: ANC [2]	47,425	50,000	50,000
Channel #2: MMP [3]	206,314	175,000	219,768
Estimated total need for continuous channels	253,739	225,000	269,768
Mass Campaign Distribution Needs			
2022 mass distribution campaign(s) [4]	0	0	897,128
Estimated total need for campaigns	0	0	897,128
Total ITN Need: Routine and Campaign	**253,739**	**225,000**	**1,166,896**
Partner Contributions			
ITNs carried over from previous year	57,282	2,383	0
ITNs from MOH	54,050	0	312,380
ITNs from Global Fund [5]	56,690	77,500	337,973
ITNs from other donors	0	0	0
ITNs planned with PMI funding	88,100	120,000	108,000
Total ITNs Available	**256,122**	**199,883**	**758,353**
Total ITNs Surplus (Gap)	**2,383**	**-25,117**	**-408,543**

[1] 2020: based on previous stratification (strata 3 & 2b); 2021-2022: based on new stratification (strata 3 & 4).
[2] 2021: target number of nets to be provided to pregnant women. Source: Lao LLIN Quantification data_NSP_v9 (2020).
[3] 2021 Source: Lao LLIN Quantification data_NSP_v9 (2020).
[4] Total need (836,873) + Buffer & Additional ITNs for HCs and DHs (60,255; 7.2%). Source: Lao LLIN Quantification data_NSP_v9 (2020)
[5] The Global Fund commodity contributions for 2021 and 2022 are estimates based on the funding request. The current grant ends in December 2020.

Laos - Rapid Diagnostic Test (RDT) Gap Analysis			
Calendar Year	**2020**	**2021**	**2022**
RDT Needs			
Total country population [1]	6,877,227	7,078,113	7,180,746
Population at risk for malaria [2]	1,673,814	1,573,316	1,596,129
Total number of malaria tests targets [3]	648,323	674,256	707,969
Target percent of fever cases tested with an RDT [4]	82%	83%	84%
Number of cases tested by RDT	531,625	559,633	594,694
Total buffer stock at various levels [5]	398,719	419,724	28,730
Total RDT Needs	**930,344**	**994,070**	**632,780**
Partner Contributions (to PMI target population if not entire area at risk)			
RDTs carried over from previous year [6]	7,715	415,976	709,783
RDTs from Government	100,000	0	632,780
RDTs from Global Fund [7]	459,502	994,070	0
RDTs from other donors	0	0	0
RDTs planned with PMI funding	500,000	0	0
Total RDTs Available	**1,067,217**	**1,410,046**	**1,342,563**
Total RDT Surplus (Gap)	**136,873**	**415,976**	**709,783**

[1] Source: CIA Factbook (2018 est.) then applied 1.45% population growth rate to each subsequent year.
[2] 2020: based on previous stratification (strata 3 & 2b); 2021-2022: based on new stratification (strata 3 & 4).
[3] Source: Lao PDR Malaria commodities NSP forecast for 2021-2025_v8.
[4] Target RDT testing rates. Source: Lao PDR Malaria commodities NSP forecast for 2021-2025_v8.
[5] Source: Lao PDR Malaria commodities NSP forecast for 2021-2025_v8.
[6] Includes stock on hand for 2020; for 2021 & 2021, surplus from previous year plus 70% of buffer stock.
[7] The Global Fund commodity contributions for 2021 and 2022 are estimates based on the funding request. The current grant ends in December 2020.

Laos - Artemisinin-based Combination Therapy (ACT) Gap Analysis			
Calendar Year	**2020**	**2021**	**2022**
ACT Needs			
Total country population [1]	6,877,227	7,078,113	7,180,746
Population at risk for malaria [2]	1,673,814	1,573,316	1,596,129
Total number of malaria tests targets [3]	648,323	674,256	707,969
Total projected number of malaria cases [4]	5,187	3,911	2,917
Buffer stock at various levels of facilities [5]	16,390	18,850	18,850
Total ACT Needs	**21,577**	**22,761**	**21,767**
Partner Contributions (to PMI target population if not entire area at risk)			
ACTs carried over from previous year [6]	10,682	15,535	44,410
ACTs from Government	0	0	0
ACTs from Global Fund [7]	14,957	24,440	18,310
ACTs from other donors	0	0	0
ACTs planned with PMI funding	0	14,000	0
Total ACTs Available	**25,639**	**53,975**	**62,720**
Total ACT Surplus (Gap)	**4,062**	**31,215**	**40,953**

[1] Source: CIA Factbook (2018 est.) then applied 1.45% population growth rate to each subsequent year.
[2] 2020: based on previous stratification (strata 3 & 2b); 2021-2022: based on new stratification (strata 3 & 4).
[3] Source: Lao PDR Malaria commodities NSP forecast for 2021-2025_v8.
[4] Projected malaria test positive rates 0.8% (2020), 0.58% (2021), and 0.412% (2022), respectively. Source: Lao PDR Malaria commodities NSP forecast for 2021-2025_v8.
[5] Number of HFs inclusive of provincial and district-level facilities, HCs, VMWs and PPM facilities: 2020: 3278 HFs; 2021 & 2022: 3779 HFs. Each HF keeps the same minimum stock: 1 treatment of Alu6x1, 6x2, & 6x3, and 2 treatments of Alu 6x4.
[6] Includes stock on hand for 2020; for 2021 & 2021, surplus from previous year plus 70% of buffer stock.
[7] The Global Fund commodity contributions for 2021 and 2022 are estimates based on the funding request. The current grant ends in December 2020.

Laos - Injectable Artesunate Gap Analysis			
Calendar Year	**2020**	**2021**	**2022**
Injectable Artesunate Needs			
Total country population [1]	6,877,227	7,078,113	7,180,746
Population at risk for malaria [2]	1,673,814	1,573,316	1,596,129
Total number of malaria tests targets [3]	648,323	674,256	707,969
Total projected number of malaria cases [4]	5,187	3,911	2,917
Projected number of severe cases [5]	12	9	7
Injectable artesunate vial needs for severe cases [6]	144	108	81
Minimum stock at provincial and district levels [7]	2,580	2,580	2,580
Total Injectable Artesunate Vials Needs [8]	**2,724**	**2,808**	**2,781**
Partner Contributions			
Injectable vials carried over from previous year [9]	370	1,920	3,738
Injectable vials from Government	0	0	0
Injectable vials from Global Fund [10]	2,468	2,820	0
Injectable vials from other donors	0	0	0
Injectable vials planned with PMI funding	0	0	0
Total Injectable Artesunate Vials Available	**2,838**	**4,740**	**3,738**
Total Injectable Artesunate Vials Surplus (Gap)	**114**	**1,932**	**957**

[1] Source: CIA Factbook (2018 est.) then applied 1.45% population growth rate to each subsequent year.
[2] 2020: based on previous stratification (strata 3 & 2b); 2021-2022: based on new stratification (strata 3 & 4).
[3] Estimated tests based on 2019 total test data (629440, microscope and RDT). Total testing targets aimed for all 3 sectors in 2021 and 2022 are 674,256 and 707,969, respectively. The targets are set to achieve 10% ABER in 2022 and beyond. The testing target increasing rates of 3% (2020), 4% (2021), and 5% (2022), respectively. Out of total testing in all 3 sectors, the public sector is estimated to take up 68% which is reduced by 1% from 2019 reported figure to accommodate the increased % contribution by community sector. Source: Lao PDR Malaria commodities NSP forecast for 2021-2025_v8.
[4] Projected malaria test positive rates 0.8% (2020), 0.58% (2021), and 0.412% (2022), respectively. Source: Lao PDR Malaria commodities NSP forecast for 2021-2025_v8.
[5] 0.231% of total projected malaria cases.
[6] Average: 12 vials per treatment.
[7] 61 provincial level HFs, each keeps 20 vials; 136 district level HFs, each keeps 10 vials.
[8] Added the projected needs for procurement. (Source: Lao PDR Malaria commodities NSP forecast for 2021-2025_v8).
[9] Includes stock on hand for 2020; for 2021 & 2021, surplus from previous year plus 70% of buffer stock.
[10] The Global Fund commodity contributions for 2021 and 2022 are estimates based on the funding request. The current grant ends in December 2020.

Laos - Primaquine (PQ) Gap Analysis			
Calendar Year	**2020**	**2021**	**2022**
PQ Needs			
Total country population [1]	6,877,227	7,078,113	7,180,746
Population at risk for malaria [2]	1,673,814	1,573,316	1,596,129
Total number of malaria tests targets [3]	648,323	674,256	707,969
Total projected number of malaria cases [3]	5,187	3,890	2,917
Pf cases (single) [3]	1,452	895	525
Pv cases (single & mixed) [3]	3,734	2,995	2,392
Total PQ tablet (7.5mg) Needs [4]	**191,726**	**174,928**	**157,291**
Partner Contributions			
PQ tablets carried over from previous year [5]	10,500	58,982	62,489
PQ tablets from Global Fund [6]	0	235,800	123,700
PQ tablets from other donors	0	0	0
PQ tablets planned with PMI funding	0	0	0
Total PQ tablets Available	**10,500**	**294,782**	**186,189**
Total PQ tablets Surplus (Gap)	**-181,226**	**119,854**	**28,898**

[1] Source: Ministry of Labour, Immigration and Population, Township Projection 2014-2031. Population at risk for malaria includes people living in malaria epidemiological strata 3a, 3b, 3c.
[2] Population at risk for malaria includes people living in malaria epidemiological strata 2 & 3 in 2019.
[3] Projected malaria test positive rates: 0.8% (2020), 0.58% (2021), and 0.412% (2022), respectively. Projected percent of malaria cases due to single *Pf* infections are 28% (2020), 23% (2021), and 18% (2022), respectively. Source: Lao PDR Malaria commodities NSP forecast for 2021-2025_v8.
[4] Assumes 7.5 mg tablets; *Pv* dosing is 15mg/day x 14 days and *Pf* is 15mg once. One adult Tx of PQ for *vivax* = 28 tablets and *Pf* = 2 tablets, and dose adjusted by age group. Buffer stock to include 50 tablets at each HF and 10 tablets for VMW and PPM facilities.
[5] Includes stock on hand for 2020; for 2021 & 2021, surplus from previous year plus 70% of buffer stock.
[6] The Global Fund commodity contributions for 2021 and 2022 are estimates based on the funding request. The current grant ends in December 2020.

Annex B. Program Inventory

Thailand - 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	2
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	5
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	5

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	5
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	3
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	3
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	3
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)	2
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

Thailand - 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	5
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	5
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	3
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	5
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	4

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

Thailand - 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	4
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	3
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	1

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	1
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	1
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	1

Thailand - 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	2

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	3
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	2

Logistics Management Information System	No LMIS available for aggregating, analyzing, validating and displaying logistics data from lower levels of the logistics system	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	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	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	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	2
Transportation Management	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	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	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	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	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	3

Routine Distribution and Resupply	No routine requisition and resupply schedule between stock holding levels	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	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	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	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	2
Health Commodity Regulations and Policy	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	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	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	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	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	4

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	2

Thailand - 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%+	5

Data, Surveillance, Monitoring & Evaluation	HMIS data quality assurance and quality control	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	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	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	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	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	3
Data, Surveillance, Monitoring & Evaluation	Reporting Systems	Data collection tools not standardized and procedures inconsistently followed; unstructured data collection and storage; no NMCP access to HMIS malaria data	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	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	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	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	4

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	4
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	5
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	1

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

Thailand - 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	4
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	3
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	5

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	4
Elimination	Elimination strategy and planning	No elimination or pre-elimination targets in the national strategic plan	Risk stratification conducted using latest incidence data and interventions targeted	Readiness assessment/capacity inventory conducted	Capacity built and systems in place to initiate elimination activities in target areas	Elimination activities implemented in target areas	5
Elimination	Scope of activities implemented (e.g. active case detection, PQ for Pf, foci investigation and response)	No elimination activities initiated	Elimination activities conducted in <25% of districts	Elimination activities conducted in 25-50% of districts	Elimination activities conducted in >50% of districts	Elimination or prevention of reintroduction activities conducted in all districts	5
Elimination	Surveillance system readiness to track all cases	Monthly, aggregate data	Case-based reporting initiated	Real-time, case-based reporting inclusive of all sectors and levels in target areas	Real-time, case-based reporting and response activities implemented	Real-time, case-based reporting and response activities implemented with data open/shared	5

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)	4
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	3

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

Laos - 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	3
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	2

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	3
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	2
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	3
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	3
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	4
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	3
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	4
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	3
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	3

Laos - 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	5
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	4
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	5

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	3

Laos - 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	4
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	3
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	1

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	1
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	1
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	1

Laos - 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

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	3
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	4

Logistics Management Information System	No LMIS available for aggregating, analyzing, validating and displaying logistics data from lower levels of the logistics system	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	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	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	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	3
Transportation Management	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	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	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	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	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	3

Routine Distribution and Resupply	No routine requisition and resupply schedule between stock holding levels	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	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	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	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	4
Health Commodity Regulations and Policy	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	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	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	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	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	3

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	2

Laos - 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%+	5

Data, Surveillance, Monitoring & Evaluation	HMIS data quality assurance and quality control	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	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	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	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	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	4
Data, Surveillance, Monitoring & Evaluation	Reporting Systems	Data collection tools not standardized and procedures inconsistently followed; unstructured data collection and storage; no NMCP access to HMIS malaria data	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	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	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	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	5

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	4
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	4
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	1

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	4

Laos - 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	5
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	5
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	5
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	5

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	3
Elimination	Elimination strategy and planning	No elimination or pre-elimination targets in the national strategic plan	Risk stratification conducted using latest incidence data and interventions targeted	Readiness assessment/capacity inventory conducted	Capacity built and systems in place to initiate elimination activities in target areas	Elimination activities implemented in target areas	5
Elimination	Scope of activities implemented (e.g. active case detection, PQ for Pf, foci investigation and response)	No elimination activities initiated	Elimination activities conducted in <25% of districts	Elimination activities conducted in 25-50% of districts	Elimination activities conducted in >50% of districts	Elimination or prevention of reintroduction activities conducted in all districts	4
Elimination	Surveillance system readiness to track all cases	Monthly, aggregate data	Case-based reporting initiated	Real-time, case-based reporting inclusive of all sectors and levels in target areas	Real-time, case-based reporting and response activities implemented	Real-time, case-based reporting and response activities implemented with data open/shared	5
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	4

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)	4
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	3
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