

Malaria Transition, Elimination and Sustainability Plan (MTESP) 2023-2028

March 2023

Malaria under MDEP

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Abbreviations and Acronyms

ACD	Active Case Detection
ACT	Artemisinin Combination Therapy
AL	Artemether-Lumefantrine
AO	Administrative Order
API	Annual Parasite Index
APLMA	Asia-Pacific Leaders Malaria Alliance
BARMM	Bangsamoro Autonomous Region in Muslim Mindanao
BHS	Barangay Health Stations
BIR	Bureau of Internal Revenue
BMMC	Barangay Malaria Microscopy Center
BUS	Bednet Utilization Survey
CAR	Cordillera Administrative Region
CHD	Center for Health Development
COVID-19	Corona Virus Disease 2019
DC	Department Circular
DM	Department Memorandum
DOH	Department of Health
DPCB	Disease Prevention and Control Bureau
DRU	Disease Reporting Unit
ECAMM	External Competency Assessment of Malaria Microscopists
GDP	Gross Domestic Product
GIDA	Geographically Isolated and Depressed Area
GNI	Gross National Income
GTS	Global Technical Strategy
HCPN	Health Care Provider Network
HIS	Health Information System
HSRA	Health Sector Reform Agenda
HUC	Highly-urbanized Cities
IDO	Infectious Disease Office
ILHZ	Inter-Local Health Zone
IPs	Indigenous Peoples
IRA	Internal Revenue Allotment
IRS	Indoor Residual Spraying
IRR	Implementing Rules and Regulations
KP	Kalusugan Pangkalahatan
LGC	Local Government Code
LGU	Local Government Unit
LLIN	Long-Lasting Insecticidal Net
M&E	Monitoring and Evaluation
MDA	Mass Drug Administration

MHO	Municipal Health Office
MOP	Manual of Operations
MTEP	Midterm Expenditure Program
MTESP	Malaria Transition, Elimination and Sustainability Plan
NCR	National Capital Region
NEDA	National Economic and Development Authority
NHIP	National Health Insurance Program
NHFR	National Health Facility Registry
NMCEP	National Malaria Control and Elimination Program
NPC	National Privacy Commission
NSPCEM	National Strategic Plan for the Control and Elimination of Malaria
OFW	Overseas Filipino Workers
OLMIS	Online Malaria Information System
OSEC	Office of the Secretary
PAR	Population-at-risk
P/CMESU	Provincial/City/Municipal Epidemiology and Surveillance Unit
Pf	Plasmodium falciparum
PhilMIS	Philippine Malaria Information System
PHO	Provincial Health Office
PIDSR	Philippine Integrated Disease Surveillance and Response
PIPH	Provincial Investment Plan for Health
PIR	Program Implementation Review
PSA	Philippine Statistics Authority
PSFI	Pilipinas Shell Foundation, Inc.
PQ	Primaquine
Pv	Plasmodium vivax
QA	Quality Assurance
QAS	Quality Assurance System
RA	Republic Act
RDT	Rapid Diagnostic Test
RHU	Rural Health Unit
RITM	Research Institute for Tropical Medicine
SDN	Service Delivery Network
SDG	Sustainable Development Goal
SHF	Special Health Fund
TDA	Targeted Drug Administration
TGF	The Global Fund
TPR	Test Positivity Rate
TWG	Technical Working Group
UHC	Universal Health Care
UPLB	University of the Philippines-Los Baños
WHO	World Health Organization

Executive Summary

The previous National Strategic Plan for the Control and Elimination of Malaria in the Philippines (NSPCEM) which covered the years 2020 to 2022 was overwhelmed by various challenges, primarily the COVID-19 pandemic which caused disruptions in the delivery of service -- from record-keeping, to surveillance, actual service delivery and follow-up. The country will continue to pursue the achievement of the Sustainable Development Goal (SDG) of ending the epidemic of Malaria and its endorsement of the Asia-Pacific Leaders Malaria Alliance (APLMA) Malaria Elimination RoadMap aiming for Malaria elimination in the Asia-Pacific Region by 2030. As it is on its last mile towards Malaria elimination, it may be the toughest for the Philippines to cross. Challenges remain in the country to achieve Universal Health Care (UHC) such as limited health care infrastructure, including health human resource; limited funding; and the burden of out-of-pocket expenditures, especially among the poor. Disparities in health outcomes across regions still persist and reaching the geographically-isolated and depressed areas (GIDA) is still a hurdle in making accessible health services to vulnerable groups including women, children, Indigenous Peoples (IPs), persons with disability and elderly. These pre-requisites – inclusive, equitable and affordable access to quality health services and commodities – are crucial to achieve the mutually reinforcing goals of Malaria elimination and UHC (APLMA, 2023). The combination of both Malaria elimination and UHC also requires prioritization of at-risk population to ensure that no one is left behind while ensuring that actions are taken to ensure gender equality, equity and human rights.

The current Malaria Transition, Elimination and Sustainability Plan (MTESP) 2023 to 2028 is a major shift from the previous plan which is a national strategic plan. The MTESP 2023-2028 will now be a sub-plan under the Multi-Disease Plan. It espouses an approach which will cover all the provinces of the country from both sides of the elimination spectrum. This direction is developed to simplify the approaches and make program directions and activities open to integration with other programs while ensuring that the original objective of the elimination program is reiterated and implemented as planned.

Goal and Objectives

To achieve the MTESP 2023-2028 goal, all 82 provinces of the country should be declared malaria-free by 2030. This will be accomplished through the Plan's three objectives: (1) Reduce malaria in Palawan by zero by 2026; (2) Declare 81 provinces malaria-free by 2027 and Palawan malaria-free by 2029; and (3) Sustain malaria-free status; prevent re-establishment of malaria transmission in 82 provinces.

Impact Targets

In **Palawan** (control province), program performance will be assessed based on the number of: confirmed indigenous malaria cases and deaths; municipalities and barangays with active transmission; and barangays with non-residual transmission

In the **15 elimination provinces**, program performance in terms of number of provinces with zero indigenous cases will be assessed. Also, the number of provinces declared malaria-free will be assessed.

For the HUCs, program performance in terms of number with transmission will be assessed.

Strategic Pillars, Strategies and Sub-Strategies

The four (4) strategic pillars are aligned with the objective of the FOURmula One Plus for Health and WHO strategies.

Strategic Pillar 1: Universal Access to Services: Ensure universal access to reliable diagnosis, highly effective and appropriate treatment and preventive measures.

The strategies that will be assessed to ensure universal access to reliable diagnosis, highly effective and appropriate treatment and preventive measures include: maintaining, expanding, strengthening, adapting and augmenting anti-Malaria interventions; implementing responsive Malaria interventions among high-risk mobile population; ensuring access to Malaria diagnosis and treatment and response capacity; and ensuring that travelers to endemic countries and endemic areas in the country have access to information.

To maintain, expand, strengthen, adapt and augment anti-Malaria interventions, the sub-strategy are to strengthen diagnostic capacity, enhance clinical management and treatment, undertake vector control measures and health promotion. The implementation of responsive Malaria interventions among high-risk mobile populations involves Target Drug Administration and distribution of conical notes in Palawan.

Ensuring continuous access to Malaria diagnosis and treatment and response capacity entails field assessment of Malaria-free provinces; establishing and implementing procedure for declaration of malaria-free cities and regions; establishing Elimination Hubs; ensuring stockpiles of Elimination Hubs and capacity building.

To ensure that travelers to endemic countries and endemic areas in Philippines have access to information there is a need to enhance health promotion activities.

Strategic Pillar 2: Governance and Leadership: Strengthen the capacity at all levels to manage and implement Malaria interventions in all provinces.

To strengthen the capacity and enable them to manage and implement Malaria interventions in all provinces, there is a need to sustain and strengthen the functional organizational structures and Malaria workforce at all levels. There is also a need to strengthen the policy environment, management system and coordination to support Malaria elimination.

There is a need to augment the human resource particularly those whose roles in the implementation of the Malaria Program is critical. This is to sustain and strengthen functional organizational structures and Malaria workforce at all levels. Similarly, there is a need to strengthen for policy development and strengthening of the Collaboration Centers to strengthen policy environment, management system and coordination in support of Malaria elimination

Strategic Pillar 3: Financing: Secure government and non-government financing to sustain Malaria elimination efforts at all levels in all provinces.

To sustain previous gains and to ensure that the country is declared malaria-free in 2030, there is a need to secure adequate government and non-government financial support for Malaria elimination. In the Transition Plans, this should be highlighted particularly in years when external funding is concluded.

Strategic Pillar 4: Quality Assurance of Services: Ensure availability of quality Malaria services and timely detection of infection as well as response and information and evidence to guide Malaria elimination in all provinces.

This pillar aims to ensure availability of quality Malaria services and timely detection of infection including response, information and evidence to guide Malaria elimination in all provinces. This will be done by ensuring high quality Malaria diagnosis and treatment through effective QAS as well as by ensuring high quality Malaria vector control. There is also a need to strengthen malaria case surveillance and response systems for malaria system. In addition, there is a need to maintain and strengthen M&E system including performance accountability.

To ensure high quality Malaria diagnosis and treatment through effective quality assurance systems, quality assurance will be further strengthened and TES studies will be conducted. This is also true for Malaria vector control where quality assurance is also a salient feature.

To strengthen malaria case surveillance and response systems for Malaria elimination, health service providers should be oriented on the 1-3-5 strategy as this will guide the implementation of other activities such as investigation and response/case surveillance and vector surveillance.

Maintaining and strengthening M&E system including performance accountability means a fully functional OLMIS, an M&E mechanism and supervision including activities for evidence generation.

1 INTRODUCTION

1.1 Background

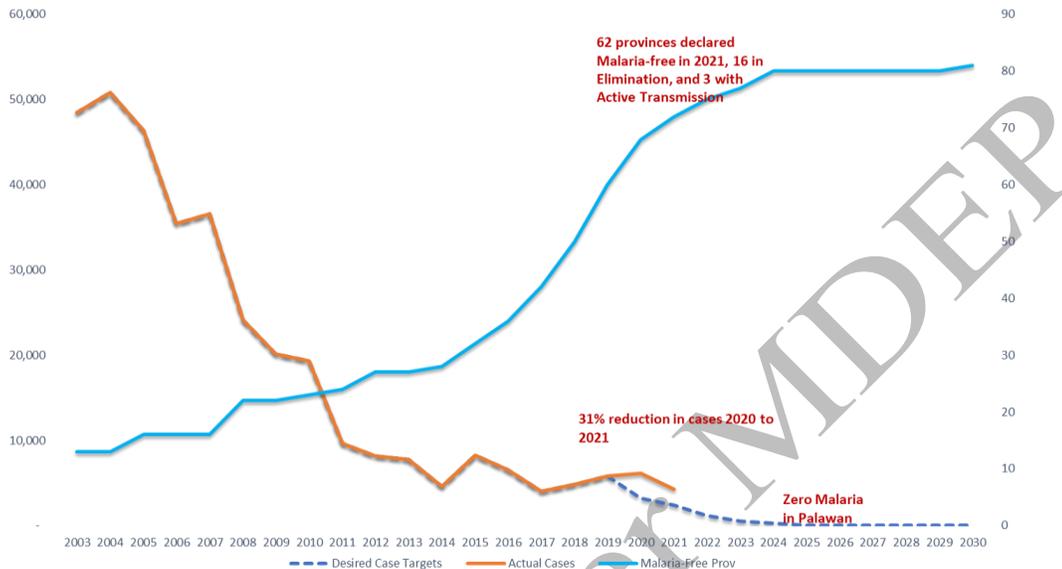
The previous National Strategic Plan for the Control and Elimination of Malaria in the Philippines (NSPCEM) which covered the years 2020 to 2022 was overwhelmed by various challenges, primarily the COVID-19 pandemic which was declared as a global health emergency by the World Health Organization (WHO) in January 2020. The concurrent lockdowns and strict health protocols from March 2020 significantly affected the demand side of the health system as these reversed the gains in improvements in health-seeking behavior of Filipinos owing to fewer people who were accessing health care services due to border restrictions, limited mobility and fear of contracting the COVID-19 disease, among others. From the supply side, health facilities and providers refocused most of their efforts and re-channeled their resources towards providing direct services related to COVID-19. This caused disruptions in the delivery of service -- from record-keeping, to surveillance, actual service delivery and follow-up. The combination of low access to and limited provision of health services in general, and for Malaria services in particular, somehow challenged the previous Plan's emphasis towards strong orientation to prevent re-establishment of transmission in Luzon and Mindanao; and more intense strategy to reduce Malaria burden in highly endemic areas in Palawan. Moreover, external financial support from The Global Fund (TGF) which support the Malaria program of the country will end in 2026 and transition to national and local government financing is crucial to sustain Malaria program gains.

Amidst the general slowdown in the implementation of activities included in the NSPCEM 2020-2022, catch-up activities were conducted as restrictions were slowly lifted which allowed for health provision of services and conduct of related activities other than those related to COVID-19. Despite the initiatives, it is anticipated that the targets of the NSPCEM 2020-2022 will not be fully accomplished and thus need to be carried over as continuing activities for the next Plan which will cover the period 2023 to 2028.

With only seven years to realize its vision, the national strategy is to individually assess and declare all provinces as Malaria-free by 2030. This means that all 82 provinces in the country have reached a minimum of five (5) consecutive years without any local transmission of Malaria, undergo assessment by a local team of experts and be officially declared by the Department of Health (DOH) as Malaria-free. Figure 1 depicts the timeline to Malaria-free Philippines in 2030.

Currently, the provinces can be grouped into three: 66 Malaria-free areas, 15 elimination areas (zero indigenous cases) and one control area (active province). The Malaria-free areas are those that have officially been declared but need to prevent the re-establishment of Malaria transmission and subsequent resurgence. It should be noted that the WHO now placed emphasis on "prevention of re-establishment of Malaria transmission" rather than "prevention of re-introduction of Malaria" as the latter concept includes introduced cases i.e., the first-generation progeny of imported cases, which may be very difficult to prevent entirely (WHO, 2017).

Figure 1. Timeline to Malaria-Free Philippines 2030



The country will continue to pursue the achievement of the Sustainable Development Goal (SDG) of ending the epidemic of Malaria and its endorsement of the Asia-Pacific Leaders Malaria Alliance (APLMA) Malaria Elimination RoadMap aiming for Malaria elimination in the Asia-Pacific Region by 2030. As it is on its last mile towards Malaria elimination, it may be the toughest for the Philippines to cross. Challenges remain in the country to achieve Universal Health Care (UHC) such as limited health care infrastructure, including health human resource; limited funding; and the burden of out-of-pocket expenditures, especially among the poor. Disparities in health outcomes across regions still persist and reaching the geographically-isolated and depressed areas (GIDA) is still a hurdle in making accessible health services to vulnerable groups including women, children, Indigenous Peoples (IPs), persons with disability and elderly. These pre-requisites – inclusive, equitable and affordable access to quality health services and commodities – are crucial to achieve the mutually reinforcing goals of Malaria elimination and UHC (APLMA, 2023). The combination of both Malaria elimination and UHC also requires prioritization of at-risk population to ensure that no one is left behind while ensuring that actions are taken to ensure gender equality, equity and human rights.

The current Malaria Transition, Elimination and Sustainability Plan (MTESP) 2023 to 2028 is a major shift from the previous plan which is a national strategic plan. The MTESP 2023-2028 will now be a sub-plan under the Multi-Disease Plan. Despite the shift, the country will continue with the approach and activities from previous strategic plans to sustain previous gains while reaching zero cases in the remaining active area (Palawan) in 2026 and maintaining the status quo for the rest of the 81 provinces.

1.2 Country Profile

The Philippines is an archipelagic country in Southeast Asia with three main geographical divisions: Luzon, Visayas and Mindanao. It comprises 16 administrative regions and one (1) autonomous region (Bangsamoro Autonomous Region in Muslim Mindanao/BARMM), 82 provinces, 148 cities, 1,486 municipalities and 42,022 barangays as shown in Table 1 (PSA, 2023).

Table 1: Provincial Summary: Number of Provinces, Cities, Municipalities and Barangays, by Region in the Philippines, 2023

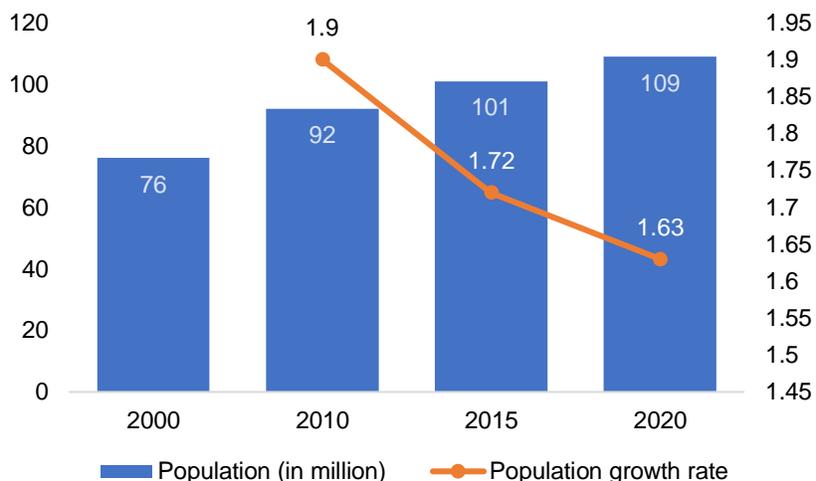
Region	No. of provinces	No. of cities	No. of municipalities	No. of barangays
NCR	0	16	1	1,710
CAR	6	2	75	1,178
1-Ilocos	4	9	116	3,267
2-Cagayan Valley	5	4	89	2,311
3-Central Luzon	7	15	115	3,102
4A-CALABARZON	5	21	121	4,019
4B-MIMAROPA	5	2	71	1,460
5-Bicol	6	7	107	3,471
6-Western Visayas	6	16	117	4,051
7-Central Visayas	4	16	116	3,003
8-Eastern Visayas	6	7	136	4,365
9-Zamboanga Peninsula	3	5	67	1,904
10-Northern Mindanao	5	9	84	2,022
11-Davao	5	6	43	1,162
12-SOCCSKSARGEN	4	4	45	1,096
13-Caraga	5	6	67	1,311
BARMM	6	3	116	2,590
Philippines	82	148	1,486	42,022

The Philippines is classified by the World Bank as a lower-middle income economy with gross national income (GNI) per capita from US\$3,430 in 2020 to US\$3,640 in 2021 (The World Bank, 2023). According to the National Economic and Development Authority (NEDA), the goal of the country in reaching upper-middle income status will most likely be achieved in 2022 (NEDA, 2021) as evident in the country's recent economic indicators (NEDA, 2022). However, due to setbacks such as sharp contraction of the economy in 2020 and the sharp depreciation of the peso in 2022, the country is expected to enter the upper-middle-income category in 2025 (Mendoza, J., 2022).

The country's population reached 109 million as of May 2020 with a population growth rate of 1.6% from 2015 to 2020 as shown in Figure 2 (PSA, 2021). The population comprises multiple ethnic groups, several of which reside in remote, hard-to-reach mountainous areas or island areas

which make difficult delivery of basic social services, including those related to the treatment of Malaria and other health programs.

Figure 2: Population and Population Growth Rate of the Philippines from 2000 to 2020



1.3 The Philippine Health System

1.3.1 Health Financing & Social Health Insurance

The Sin Tax Reform Law of 2012, which imposed an increased excise on tobacco and alcohol products has greatly boosted health financing, as its revenues, which stood at PhP205.8 billion in 2021 (DOH, 2021a), are directed to public health programs and subsidizing of social health insurance for the poorest.

In 2021, the country health spending reached PhP1.09 trillion (PSA, Health Spending Registered 18.5 Percent Growth, Share of Health to Economy Went Up to 6.0 Percent in 2021, 2022a). This is 18.5% higher compared with the PhP917.15 billion in 2020. The share of the total health expenditure to the Gross Domestic Product (GDP) at current prices was at 6% in 2021.

The National Health Insurance Program (NHIP) Law of 1995 introduced a social health insurance scheme, PhilHealth, which reached 92.0% coverage in 2015 (PhilHealth Statistics Database). The PhilHealth now covers 66 million active members, which is 91% of the target in 2017, through a network of accredited hospitals and health centers.

1.3.2 Devolution and Health Sector Reform

The Philippines has a decentralized health system led by the DOH and implemented by the Local Government Units (LGUs) as mandated under the 1991 Local Government Code (LGC). The provinces operate the provincial and district hospitals while the municipalities run the Rural Health

Units (RHUs) and Barangay Health Stations (BHSs). Meanwhile, the highly urbanized cities (HUCs) manage their own health facilities.

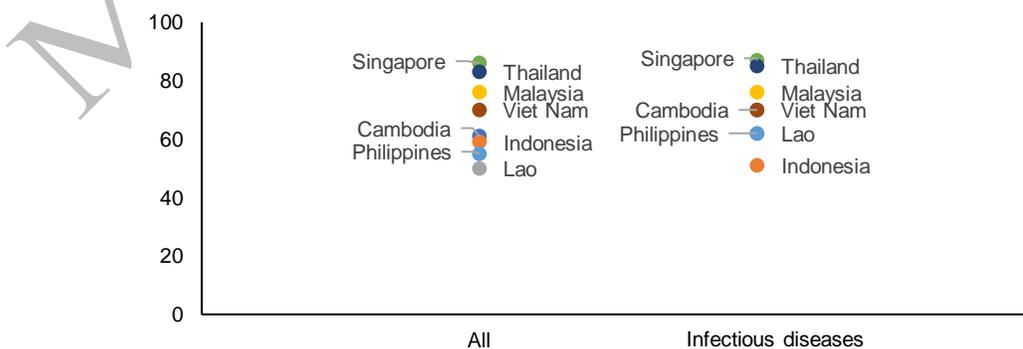
The devolution aims to align the resources with local needs and demands while promoting increased accountability of LGUs and greater local participation in decision-making. However, this led to fragmentation and reduction of equity related to highly variable commitment of LGUs. The loss of central administrative control posed challenges in the technical supervision of public health programs and service delivery standards to maintain health information system (HIS) and to implement the national health policies.

In 1999 the DOH developed the Health Sector Reform Agenda (HSRA) as its policy framework for reforms to respond to the challenges brought by the devolution and the National Health Insurance Act of 1995. This led to the adoption of the FOURmula One (F1) for Health as the implementing framework for health reforms from 2005 to 2010. The F1 for Health established four major pillars: financing, service delivery, regulation and governance, as a single package of targeted reforms. It enabled LGUs to access pooled donor funds through sector-wide approach via a mechanism for centrally funded grants to promote inter-LGU planning, formation of inter-local health zones (ILHZs) and preparation of Provincial Investment Plan for Health (PIPH).

Building on the F1 for Health, the DOH adopted the Universal Health Care (UHC) or Kalusugan Pangkalahatan (KP) as its strategic framework from 2011 to 2016. The KP expanded the NHIP and intensified the investments in health infrastructure. It made possible the deployment of centrally contracted health staff to augment local human resources and to undertake central procurement of previously locally managed commodities.

Despite increase in health expenditures and early reforms, marginal improvements were achieved with the health outcomes. For example, there was a decrease in vaccination coverage from 79.5% in 2008 to 69.9% in 2017. Based on the WHO latest data, the Philippines ranks low (55 of 100) in the UHC Service Index (Figure 3), an indicator of access to essential services on maternal and child health, infectious diseases and non-communicable diseases (WHO, 2023).

Figure 3: Universal Healthcare Coverage Index, 2019



The challenges in accessing healthcare is manifested through the slow improvement in health outcomes. In addition, disparities across regions in the country in terms of health outcomes are also prevalent as wealthier regions like NCR have health outcomes comparable to some upper middle- and high-income countries while BARMM is similar with the poorest countries in the world (DOH, 2020a).

Access to health care also remained a challenge. Most hospitals in the Philippines are private and most of their services are not affordable to the poor despite PhilHealth subsidy. In 2013, about two-thirds of Filipinos went to public health facilities while the remaining one-third went to private or non-government health facilities. The limited availability of health facilities and health providers and poor financial risk protection remain the top barriers to accessing health care (WHO, 2023). Out-of-pocket expenditures are still a burden especially among the poor. In 2015, about 51% are out-of-pocket spending for health services. In 2021, health spending financed through government schemes and compulsory contributory health care financing schemes amounting to PhP546 billion was the largest among sources of health financing followed by household-out-of-pocket payment which is at PhP451 billion (PSA, 2022a).

In 2018, the Philippines adopted the UHC Act (Republic Act 11223). The Act stipulates that every Filipino should be automatically included in the PhilHealth insurance. It aims to provide Filipinos immediate access to population-based services that will be provided by the DOH and LGU as well as individual-based health services that will be provided by PhilHealth. The Act consolidates the providers into province-wide and city-wide health systems with clinical, financial and management integration.

Also in 2018, the DOH developed the medium-term strategic framework for 2017 to 2022 with the FOURmula One Plus for Health (F1+) as the implementing framework. This expands the four pillars of health reforms included in F1 and placed greater emphasis on performance accountability. In relation to Malaria control and elimination, the following elements of the F1+ are particularly relevant:

- Promoting a unified, transparent and explicit process of identifying priority programs with focus on basic and essential primary care services;
- Providing health services and programs for the poor, marginalized and vulnerable;
- Engaging pharmacies to provide selected essential medicines to specific population groups under a revitalized “Botika ng Bayan” program;
- Building the capacity of local health centers to ensure access to basic laboratory services and clinical practice guidelines;
- Organizing public and private health service providers into Service Delivery Networks (SDNs) which will be responsible for the health needs of a defined population, including those from GIDA; and
- Assigning a primary care provider in the Health Care Provider Network to all families and individuals.

1.3.3 Human Resources for Health

The continuing exodus of Filipino health workers to other countries limits the provision of and access to essential health care services. To date, there are still barangays without midwives and health facilities as the country experience fast turnover of health personnel.

In a 2005 DOH Health Human Resource Development Bureau Study, findings reveal that the existing number of doctors and midwives positions may have met the country's total requirements. However, this is not the case because of the following reasons: (a) not all available position are filled up; (b) although positions may have been filled up, some are not performing the expected health functions; and (c) deployment is inequitable vis-à-vis the number of clients and the geographic spread of their catchment population.

Despite increase in health financing from sin tax and measures to correct the negative effects of the devolution, the DOH at central level is seriously understaffed which may have adverse effect to the quality of planning, policy formulation, implementation and monitoring and evaluation.

As for health facilities, based on the National Health Facility Registry (NHFR, 2022), as of 2022, there were 24,753 Barangay Health Stations (BHS) with CALABARZON having the highest number followed by Central Visayas with 2,427 and Bicol with 2,346. As for RHUs, NCR has the highest number at 481, followed by Central Luzon with 300 and CALABARZON with 227. Only nine regions have CHO and these are NCR (n=15); CALABARZON (n=7); Central Luzon and Central Visayas (n=5 each); Western Visayas (n=4); Bicol (n=3); and Ilocos, Eastern Visayas and Caraga (n=1 each). There were 646 infirmaries in the country with Bicol having the most number at 63 followed by Central Visayas with 53 and SOCCSKSARGEN with 49. As for birthing homes, the total for the country is 2,984 and these are mostly found in CALABARZON (n=421), NCR (n=364) and Central Luzon (n=309). In terms of hospitals, the country has a total of 1,362 with CALABARZON having the most number of these facilities at 234, followed by Central Luzon with 195 and NCR with 157. Details are shown in Table 2.

Table 2: Number of Health Facilities by Region in the Philippines, 2022 (NHFR, 2022)

Region	BHS	RHU	CHO	Infirmary	Birthing Home	Hospital
NCR	44	481	15	20	364	157
CAR	920	77		31	39	32
1-Ilocos	1,914	156	1	40	159	81
2-Cagayan Valley	1,616	98		30	108	66
3-Central Luzon	2,185	300	5	42	309	195
4A-CALABARZON	2,786	226	7	42	421	234
4B-MIMAROPA	1,176	81		38	55	33
5-Bicol	2,346	135	3	63	231	61
6-Western Visayas	2,169	151	4	32	156	64
7-Central Visayas	2,427	158	5	53	226	59
8-Eastern Visayas	929	169	1	38	181	51

Region	BHS	RHU	CHO	Infirmery	Birthing Home	Hospital
9-Zamboanga Peninsula	859	96		31	117	43
10-Northern Mindanao	1,346	107		39	77	72
11-Davao	1,225	69		44	141	69
12-SOCCSKSARGEN	1,111	60		49	143	83
13-Caraga	980	81	1	30	94	24
BARMM	720	131		24	163	38
Total	24,753	2,576	42	646	2,984	1,362

1.3.4 Implications of the Mandanas-Garcia Ruling

During its 7th National Health Sector Meeting in July 2021, the DOH Undersecretary presented the effects of the Mandanas-Garcia ruling on the DOH budget and the DOH Initial Devolution Transition Plan which should begin in 2022. Accordingly, the Mandanas-Garcia ruling can help sustain the implementation of the UHC. It is also a positive development for local government because it can be a source of fund to finance health programs and services at the LGU level (DOH, 2021b).

The Mandanas-Garcia ruling is a result of the petition made in 2013 by Batangas Governor Mandanas and former Bataan Governor Garcia, Jr. together with other local elective officials before the Supreme Court on local government shares of the internal revenue allotment (IRA). Mandanas and Garcia petitioned that LGU shares should include all national taxes. In 2022, the Supreme Court affirmed the ruling giving the LGUs a just share on all national taxes collected including from the Bureau of Internal Revenue (BIR) effective 2022 (UPLB, 2022).

Currently, the IRA of LGUs comes from 40% of national internal revenue taxes collected by BIR. With the Mandanas-Garcia ruling implementation in 2022, it is projected that LGUs will have a 27.6% increase in the total IRA shares. The Executive Order No. 138 issued in June 2021 directs the full devolution of transfer of certain executive branch functions to LGUs including basic services such as healthcare as mandated by the LGC (Section 17). The Mandanas-Garcia ruling is not just a transfer of resources but also devolves full delivery of basic services to LGUs. This provides opportunities to strengthen decentralization, encourage prompt response and better matching of government services to local needs and therefore improve social service delivery and make governance more inclusive (The WorldBank, 2021).

In consideration of Mandanas-Garcia ruling and the UHC Act implementation, the UHC Medium Term Expenditure Program (MTEP) 2020-2023 (DOH, 2020b) which is a multi-year spending plan covering the years 2020-2023 explored four different scenarios to estimate budgetary requirements for the attainment of FOURmula One (F1) Plus for Health goals and objectives through the implementation of the UHC Act of 2019 and its implementing rules and regulations (IRR).

- Scenario 1 is status quo.
- Scenario 2 is a non-Mandanas-Garcia scenario with UHC Act Implementation - presents the full costing requirement for UHC implementation assuming an improved absorptive capacity of DOH-OSEC and PhilHealth. The costing in this scenario demands for additional resources for priority programs and special program needs in order to implement provisions of the UHC Act, support underfunded laws, and achieve a health system that is resilient to a pandemic and emerging infectious disease.
- Scenario 3 is the Mandanas-Garcia Implementation in UHC Integration Sites only – (on public health commodities). This includes the medium-term costing based on program requirements with adjustments for certain commodities that will be re-devolved to UHC-Integration Sites for the following programs: Environmental and Occupational Health; Family Health, Nutrition, and Responsible Parenting; Elimination of Diseases; Prevention and Control of Other Infectious Diseases; and, Prevention and Control of Non-Communicable Diseases. The public commodities under the National Immunization Program, Rabies Control Program, and Tuberculosis Control Program will be retained by DOH.
- Scenario 4 is the Mandanas-Garcia Implementation Nationwide – (on public health commodities). This assumes the implementation of Mandanas-Garcia case ruling nationwide starting 2021 on the following public health programs: Environmental and Occupational Health; Elimination of Diseases; Prevention and Control of Other Infectious Diseases; and, Non-Communicable Diseases. However, in the case of Family Health, Nutrition, and Responsible Parenting Program, only the costing requirement of UHC-Integration Sites considering Mandanas-Garcia case ruling implementation from 2022 to 2023 were reflected. The public commodities under the National Immunization Program, Rabies Control Program, and Tuberculosis Control Program will be retained by the DOH.

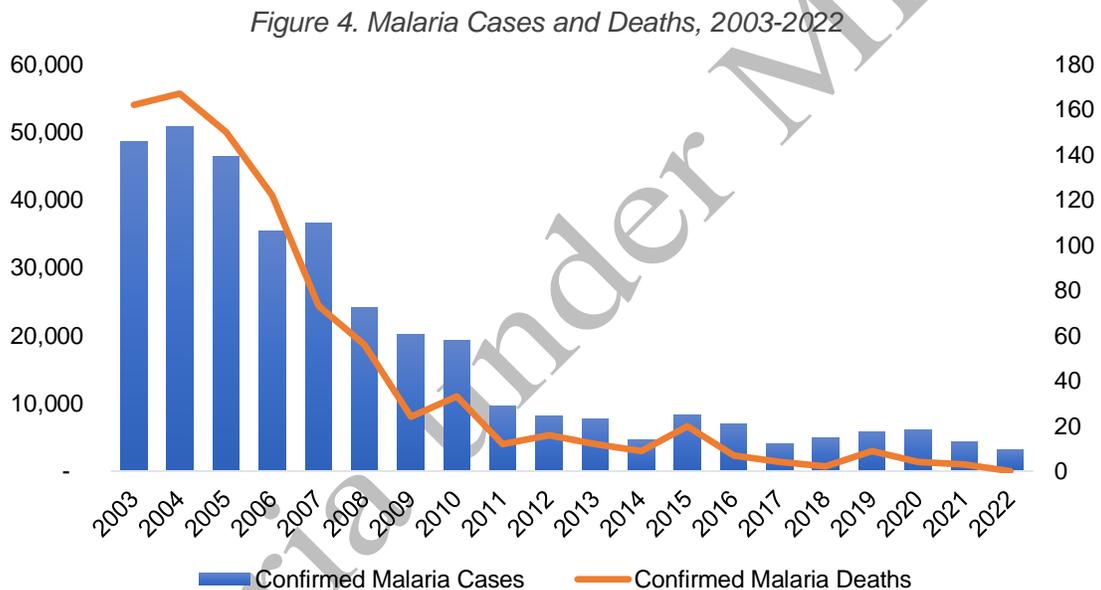
Malaria Transition, Elimination and Sustainability Plan (MTESP) 2023-2028

2 Malaria in the Philippines

2.1 Malaria Epidemiology

2.1.1 Population and Areas at-risk of Malaria

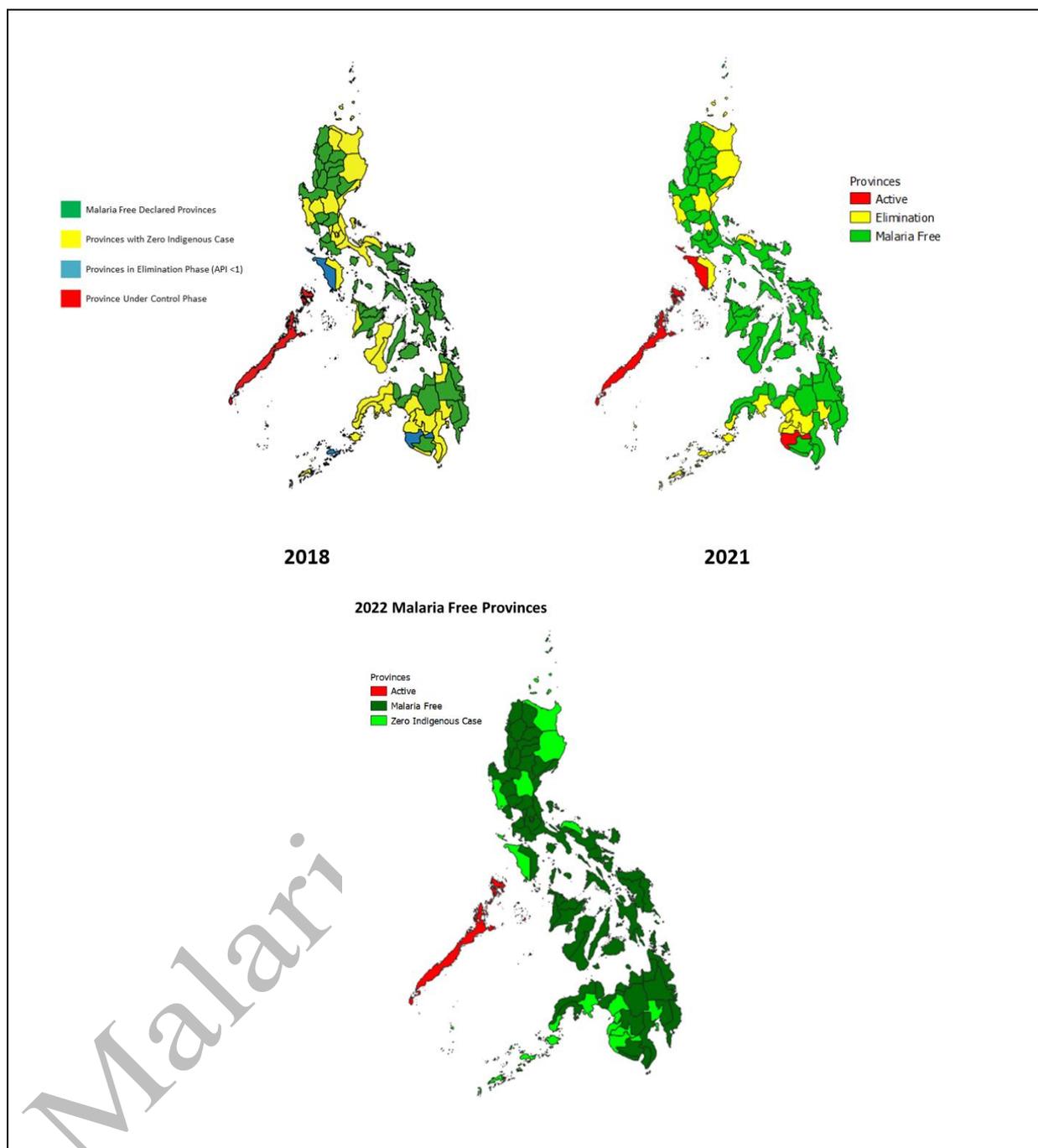
The Philippines carried a high burden of Malaria disease in the past. This burden, however, significantly decreased from a peak of 50,850 reported cases in 2004 to 3,174 reported cases in 2022 (Figure 4). The number of deaths also reduced significantly from 167 in 2004 to zero (0) in 2022. These accomplishments were achieved because of the persevering efforts of the National Malaria Control and Elimination Program (NMCEP).



Source: PhilMIS-PIDSR-OLMIS

From 2023 onwards, the aim is to eliminate Malaria in all provinces of the country and declare the Philippines Malaria-free by 2030. The 50 provinces that have been declared Malaria free in 2018 has increased to 66 provinces in 2021 (Figure 5).

Figure 5. Status of Subnational Elimination of Philippine Provinces, 2021



The remaining 16 provinces are in the various stages of Malaria elimination. Out of the 16 provinces, 15 have zero indigenous Malaria cases and one (1) have ongoing active transmission of Malaria (Palawan). Table 3 presents the provinces with zero indigenous Malaria cases.

Table 3. Provinces with Zero Indigenous Malaria Cases

Last year with indigenous cases	Eligible year for Malaria-free assessment	Province
2016	2022	Cagayan
~	Eligible	Isabela
~	Eligible	Nueva Ecija
~	Eligible	Zambales
~	Eligible	Camarines Norte
~	Eligible	Zamboanga del Sur
2017	2023	Davao del Norte
2017	2023	Maguindanao
2016	2022	Tawi Tawi
2018	2024	Sulu
~	Eligible	Basilan
~	Eligible	Lanao del Sur

In 2022, 81 out of 82 provinces reported zero indigenous Malaria cases, with 66 provinces recognized as Malaria-free. Palawan is the only province reporting active transmission of Malaria. Malaria deaths also reduced by 98% from 2003 to 2022.

The morbidity has decreased from 4.9 per 100,000 population in 2018 to 2.9 per 100,000 population in 2022. On the other hand, deaths from Malaria continue to decrease until its stagnation with three (3) deaths in 2020 and 2021. In 2021, deaths have been recorded in Davao City with the patient having travelled from Sultan Kudarat and Palawan. No Malaria death has been reported in 2022.

In 2018, the confirmed Malaria cases were reported in four (4) provinces, in which indigenous cases were reported in 168 barangays (Table 4). Despite a reduction in cases in 2022, the barangays reporting indigenous cases have been reduced.

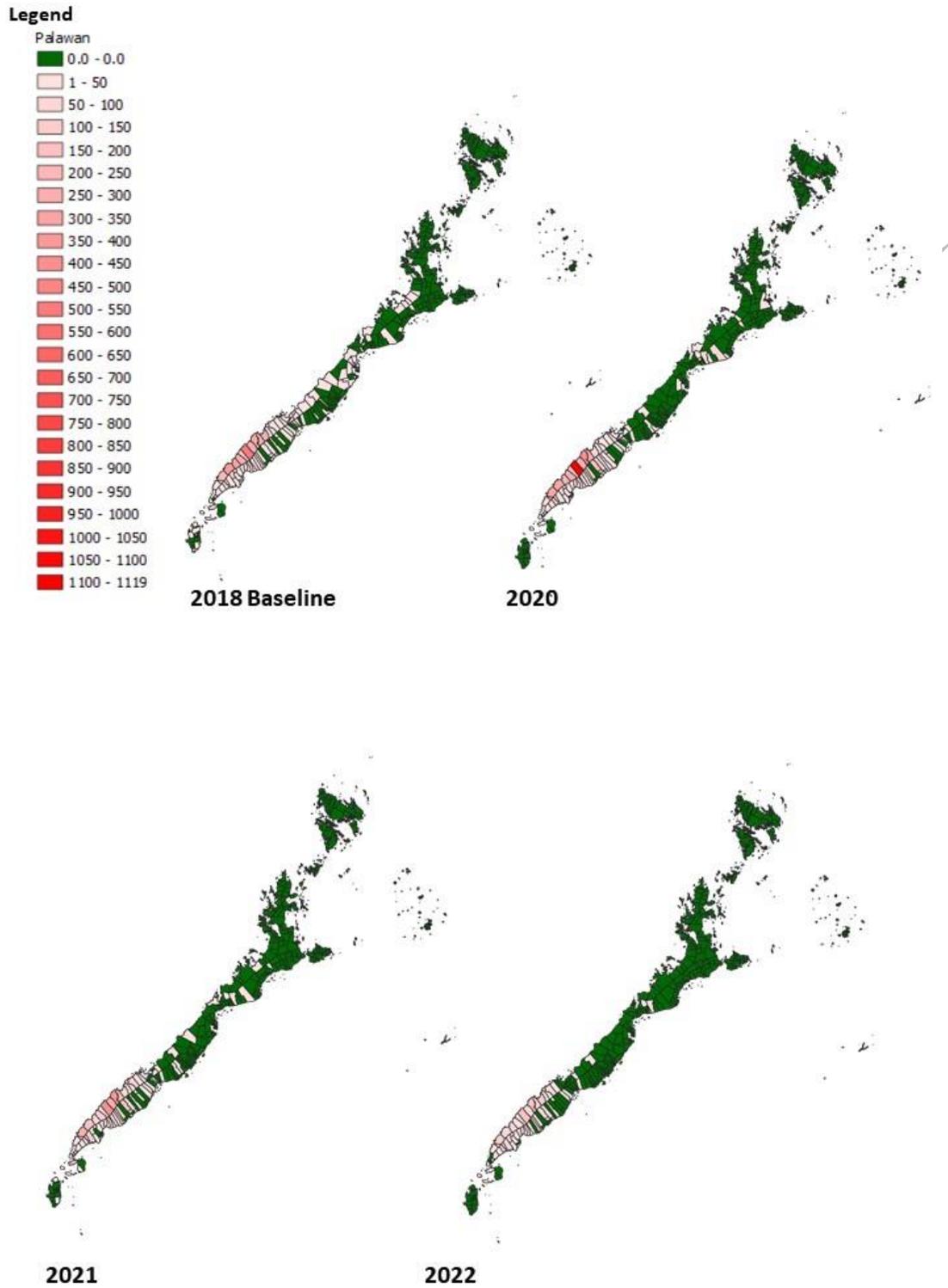
Table 4. Barangays with Confirmed Indigenous Malaria Cases in the Philippines in 2018 and 2022

Municipality	No. of barangays	2018 Baseline		2022			
		No. of barangays reporting indigenous Malaria 2018	Confirmed indigenous Malaria cases, 2018 (by address)	No. of barangays reporting indigenous Malaria, 2022	Confirmed indigenous Malaria case, 2022 (by address)		
Palawan							
Aborlan	19	8	42.11%	50	2	10.53%	4
Balabac	20	12	60.00%	418	6	30.00%	46
Bataraza	22	22	100.00%	382	21	95.45%	452
Brookes Point	18	15	83.33%	207	12	66.67%	350
El Nido (Bacuit)	18	4	22.22%	5	2	11.11%	4
Narra	23	11	47.83%	28	5	21.74%	12
Puerto Princesa City	66	28	42.42%	155	17	25.75%	72
Quezon	14	14	100.00%	271	13	92.85%	267

Municipality	No. of barangays	2018 Baseline			2022		
		No. of barangays reporting indigenous Malaria 2018		Confirmed indigenous Malaria cases, 2018 (by address)	No. of barangays reporting indigenous Malaria, 2022		Confirmed indigenous Malaria case, 2022 (by address)
Rizal (Marcos)	11	11	100.00%	3,093	11	100.00%	1930
Roxas	31	6	19.35%	16	0	0.00%	0
San Vicente	10	7	70.00%	21	0	0.00%	0
Sofronio Española	9	8	88.89%	97	4	44.44%	65
Taytay	31	5	16.13%	6	2	0.00%	4
Sultan Kudarat							
City of Tacurong	20	1	5.00%	1	0	0.00%	0
Palimbang	40	5	12.50%	40	0	0.00%	0
Kalamansig	15	1	6.67%	3	0	0.00%	0
Esperanza	19	0	0.00%	0	0	0.00%	0
Occidental Mindoro							
San Jose	38	3	7.89%	8	0	0.00%	0
Mamburao	15	1	6.67%	3	0	0.00%	0
Sulu							
Indanan	34	1	2.94%	1	0	0.00%	0
Jolo	8	1	12.50%	1	0	0.00%	0
Pangutaran	16	1	6.25%	1	0	0.00%	0

In Palawan, as can be gleaned from the maps (Figure 6), there is continued progress towards elimination in the northern part of the Province while transmission is concentrated mostly in the southern part. In 2020, there were recorded increase in cases in the southern municipalities of Rizal, Bataraza, Quezon, Brooke's Point, Sofronio Española and Balabac.

Figure 6. Confirmed Indigenous Malaria Cases in Palawan, by Barangay, 2020-2022



From 2020 to 2022, the number of municipalities and barangays in Palawan reporting indigenous cases decreased as shown in Figure 7. Similarly, the number of barangays with active Malaria transmission in Puerto Princesa City in Palawan also decreased from 2020 to 2022, from 15 to 10 municipalities/city, respectively (Figure 8).

Figure 7. Number of Municipalities and Barangays with Active Malaria Transmission in Palawan, 2018-2022

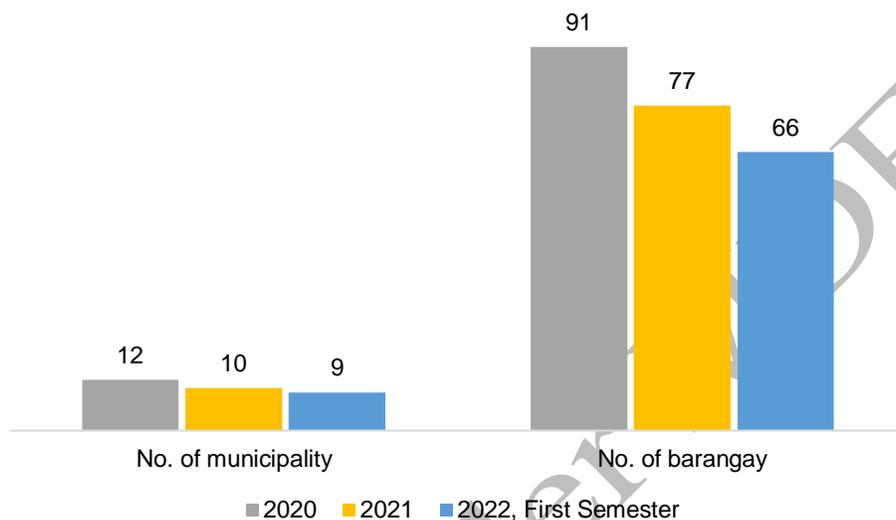
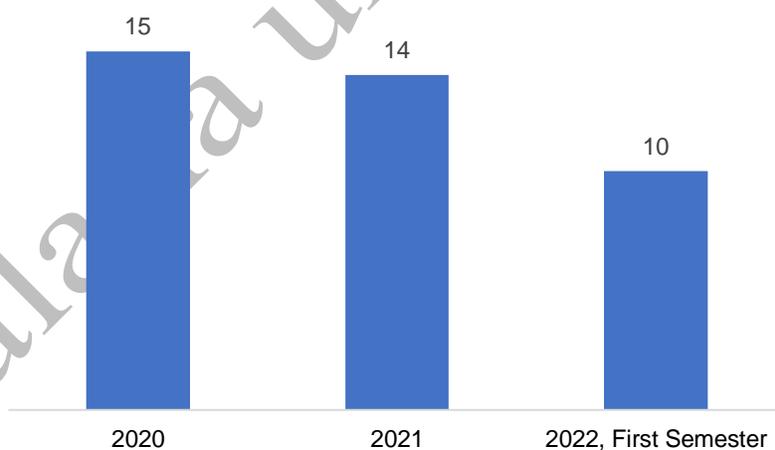


Figure 8. Number of Barangays with Active Malaria Transmission in Puerto Princesa City, Palawan, 2018-2022



In Mindoro Occidental, of the 11 municipalities, only San Jose remains as residual non-active in 2022. Two (2) of the 37 barangays in San Jose are residual non-active. The total population in these barangays is 9,123 which is about 6% of San Jose's total population. From 2020 to 2022, there are no reported Malaria cases in the Province.

As for Sultan Kudarat, two municipalities have residual non-active barangays in 2022. These are: Palimbang with seven (7) and Kalamansig with four (4). This accounts for 26,743 population-at-risk (PAR) in the province. In 2022, there are no reported Malaria cases in the province.

The following table (Table 5) shows the population-at-risk in eight (8) provinces from 2019 to 2022 indicative of a decreasing number from 2020 to 2022.

Table 5. Population-at-Risk, by Year, 2020 to 2022

Province	2020	2021	2022
Cagayan	0	0	0
Mindoro Occidental	21,044	24,024	9,123
Palawan	784,593	681,071	704,550
Davao del Norte	11,909	0	0
Sultan Kudarat	28,701	31,531	26,743
Maguindanao	0	0	0
Sulu	876	871	0
Tawi Tawi	0	0	0
Total	847,123	737,497	740,416

2.1.2 Mechanism of Infection and Transmission

There are four (4) species of human Malaria: *Plasmodium falciparum* (Pf), *Plasmodium vivax* (Pv), *Plasmodium Malariae* (Pm) and *Plasmodium ovale* (Po). Seventy percent (77.87%) of all Malaria cases in the Philippines are *P. falciparum* and is responsible for severe or complicated Malaria causing mortality. The *P. vivax* causes about 16.61% of cases and is capable of producing complicated Malaria but to a lesser extent. The *P. vivax* and *P. ovale* have dormant stages in the liver called hypnozoites. They are the causes of relapsing Malaria several months or maybe years after the initial infection. As for *P. Malariae*, there are reports of rare infection caused by this species, which accounts for 0.86% of cases. A fifth parasite, *Plasmodium knowlesi* (Pk), which is a Malaria parasite of the monkey, has been identified in humans Palawan.

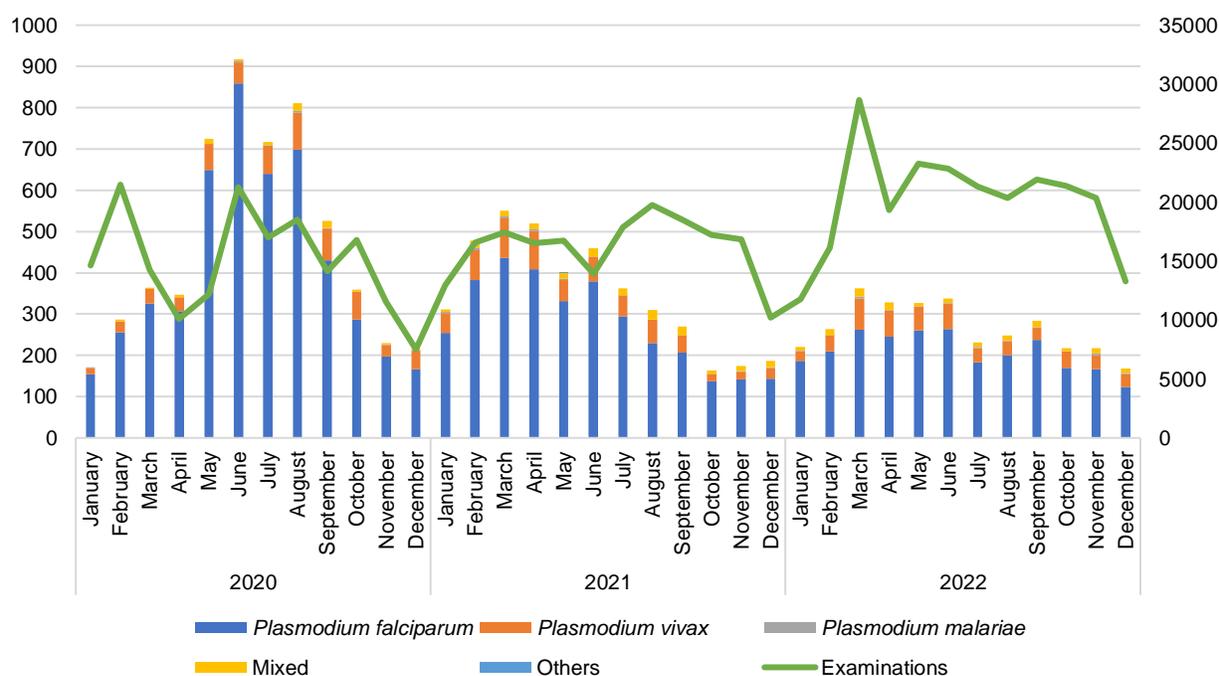
Table 6 shows that *P. falciparum* remained the dominant species overall, comprising 78.20% of cases. The *P. vivax* is the second most common parasite detected, with 16.22% of the indigenous cases. Despite *P. falciparum* being the dominant species overall, reports show that indigenous cases in Sultan Kudarat in 2021 are all *P. vivax*, indicating the different transmission dynamics in the area. Moreover, Sultan Kudarat was able to interrupt the transmission in 2022 and has not recorded any cases.<

Table 6. Confirmed Indigenous Malaria Cases by Species, Philippines, 2020-2022

Species	2020		2021		2022	
	No.	%	No.	%	No.	%
<i>Plasmodium falciparum</i>	5,231	85.92%	3,347	78.53%	2507	78.17%
<i>Plasmodium vivax</i>	733	12.04%	703	16.49%	521	16.26%
<i>Plasmodium Malariae</i>	37	0.61%	26	0.61%	28	0.87%
<i>Plasmodium ovale</i>	0	0.00%	0	0.00%	0	0.00%
<i>Plasmodium knowlesi</i>	0	0.00%	0	0.00%	0	0.00%
Mixed	87	1.43%	185	4.34%	151	4.71%
Non-falciparum	0	0.00%	1	0.02%	0	0.00%
Total	6,088		4,262		3207	

The *P. falciparum* dominates the species infecting residents in the Province of Palawan. Its peak of transmission occurs in the month of June while its lowest point of transmission occurs from November to January (Figure 9).

Figure 9. Monthly Confirmed Indigenous Cases and Examinations in Palawan, Philippines, 2020-2022



In 2020, in Sultan Kudarat, the *P. vivax* is the dominant species infecting about 82% of the residents. The *P. falciparum* species infected about 18% of the residents in the same year. In 2021, 100% of the cases were caused by the *P. vivax*. All the cases that occurred in 2020 and 2021 are uncomplicated. In 2022, there were no cases reported in the province.

In areas that are already in elimination phase and Malaria-free, the challenge is the prevention of re-introduction of Malaria. The sources of possible re-introduction are the imported cases from endemic provinces and countries. As shown in Table 7 NCR have the highest number of imported cases; most of which had travel history from Africa or Papua New Guinea.

Table 7. Confirmed Malaria Cases, by Transmission, 2020-2022

Province	2020	2021	2022
Indigenous	6,089	4,214	3,207
Occidental Mindoro	0	0	0
Palawan	5,944	4,140	3,206
Sultan Kudarat	142	71	0
Imported – locally	2	2	1
Undetermined	1	1	0
Imported Abroad	30	35	38
Induced	1	0	0
Grand Total	6,120	4,249	3,245

Among the regions, CALABARZON (Region 4B) has the highest number of confirmed Malaria cases based on reports from the Centers for Health Development (CHD) Disease Reporting Unit (DRU). In 2022, 99% of total cases of the country were from this region (Table 8).

Table 8. Comparison of Confirmed Malaria Cases based on DRU, 2020-2022

CHD	2020	2021	2022
NCR	11	13	5
CAR	1	0	1
CHD 1	2	0	0
CHD 2	0	1	1
CHD 3	4	1	4
CHD 4A	4	3	3
CHD 4B	5,944	4,141	3,206
CHD 5	0	1	1
CHD 6	1	0	0
CHD 7	3	4	7
CHD 8	0	0	0
CHD 9	0	1	1
CHD 10	1	1	3
CHD 11	0	1	1
CHD 12	147	81	10
CARAGA	2	1	2
BARMM	0	0	0
Grand Total	6,120	4,249	3,245

2.2 Malaria Trends

2.2.1 Indigenous and Imported Cases

The terms Indigenous Peoples (IPs) is a generic reference to a wide range of ethnic and language groups, often differing quite markedly in relation to social determinants of health (i.e., housing, educational participation, access to clean water, gender equity and cultural beliefs, knowledge, attitudes, behaviors and practices in relation to Malaria). As shown in Table 9, about 90% of confirmed indigenous Malaria cases are among IPs. The proportion of IPs that had been infected with Malaria decreased from 94% in 2020 and 2021 to 81% in 2022.

Table 9. Confirmed Indigenous Malaria Cases, by Ethnicity, Philippines, 2020-2022

Year	IP		Non-IP		Unreported		Total
	No.	Percent	No.	Percent	No.	Percent	
2020	5,705	93.7	383	6.3	0	0.0	6,088
2021	3,966	94.1	248	5.9	0	0.0	4,214
2022	2,603	81.2	604	18.8	0	0.00	3,207

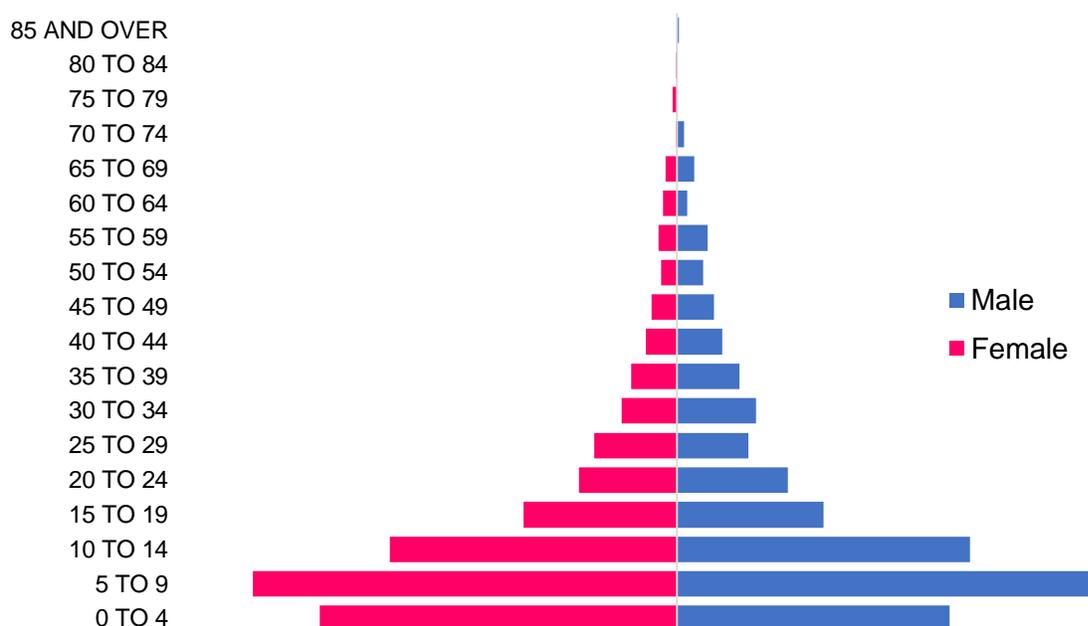
In Palawan, IPs group remain the primary key affected population for local transmission. The most affected tribal group in the Province is the Palaw'an tribe. In the Municipality of Rizal, majority of the cases also occur among IPs, which comprise the majority of the population in the southern municipalities of Palawan. The IPs travel in remote mountainous areas for cultural- and/or livelihood-related reasons which increases their exposure to Malaria transmission. The movements of the IPs within the community also exposed them to infective mosquito bites. Among them are outdoor activities such as chatting, walking, playing, motorcycling, watching television, cooking, riding in a vehicle, fetching water, chopping woods and listening to the radio. These activities peaked at round nine in the evening (RITM, 2019).

Similarly, in Sultan Kudarat, most the cases occur among IPs. In 2020 and 2021, all 142 uncomplicated cases and 95% (68 of the 71 cases), respectively occur among IPs. Again, all these cases are uncomplicated.

2.2.2 Age and Sex Distribution of Malaria Cases

The population pyramid (Figure 10) illustrates the disaggregation of Malaria indigenous cases in the Philippines by age and sex. The broad-based structure depicts the majority of those infected are female children particularly those below 9 years old. From 20 years and up, there are more males infected with the exception of the age group 25 to 29 where more females are infected.

Figure 10. Age and Sex Disaggregation of Malaria Indigenous Cases, Philippines 2022



In the last three years, more than half of the confirmed indigenous Malaria cases occurred among those who are 5 to 18 years old, followed by 30% which occurred among those who are above 18 (Figure 11). Less than 20% of cases occurred among children under 5 years old. Since most of the cases occur among IPs, this distribution will be similar. Of the reported confirmed Malaria cases among IPs in Palawan, about 19 percent comprised children who are less than five years old indicative of either a high transmission in the area or the exposure of children to bites of Malaria vector mosquitoes in the evening before they retire under a bed net.

Figure 11. Confirmed Indigenous Malaria Cases, by Age, Philippines, 2020-2022

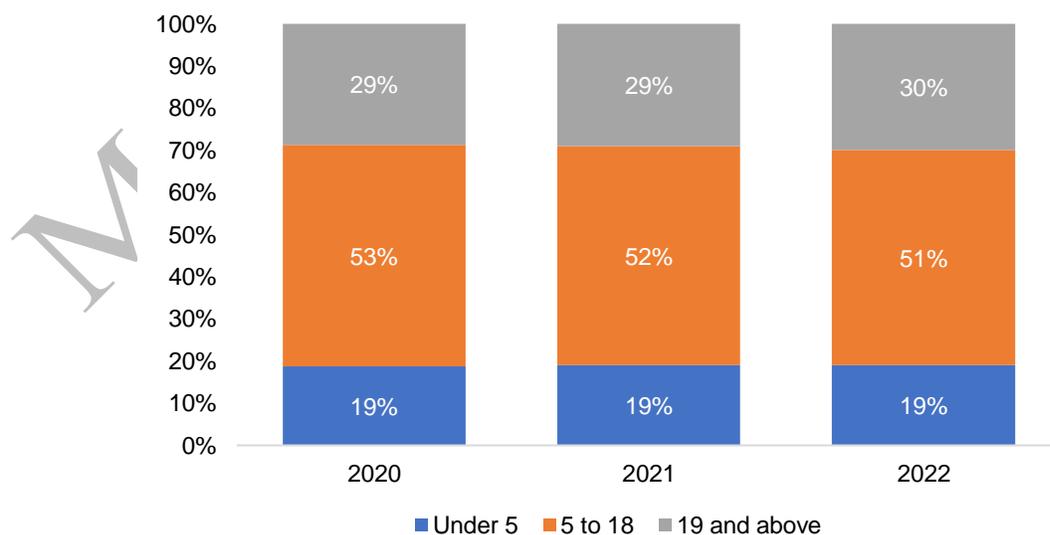


Table 10 shows the number of severe confirmed Malaria cases among indigenous cases from 2020 to 2022. There were also reported severe Malaria among cases that were imported from other country. Worth noting is that most of the severe indigenous Malaria cases were among those who are 0 to 9 years old.

Table 10. Confirmed Malaria Cases, by Severity, Philippines, 2020-2022

Year	Indigenous					Imported-Abroad				
	Severe		Uncomplicated		Total	Severe		Uncomplicated		Total
	No.	%	No.	%		No.	%	No.	%	
2020	91	1.5	5,997	98.5	6,088	5	18.5	22	81.5	27
2021	57	1.3	4,205	98.7	4,262	3	8.6	32	91.4	35
2022	0	0.0	3,207	100.0	3,207	5	13.7	33	86.8	38

2.2.3 Malaria Cases Among Pregnant Women

In 2020, there were 22 confirmed Malaria case among pregnant women of which 21 were infected by *P. falciparum* species while one (1) was infected by *P. vivax*. In 2022, the number of pregnant women who were confirmed Malaria case is higher at 33; 29 were infected by *P. falciparum*, two (2) were infected by *P. vivax* and two (2) were infected by combination of *P. falciparum* and *P. vivax* (Table 11).

Table 11. Number of Pregnant Women Who Were Confirmed Malaria Case, by Species, Philippines, 2020-2022

Year	Species					
	No. of pregnant women	<i>P. falciparum</i>	<i>P. vivax</i>	<i>P. Malariae</i>	<i>P. ovale</i>	Mixed
2020	22	21	1	0	0	0
2021	26	20	4	0	0	2
2022	33	29	2	0	0	2

3 Current Situation of Malaria Control and Elimination Program

3.1 Overview of the NSPCEM 2020-2022

The NSPCEM 2020-2022 vision is “A Malaria-free Philippines by 2030.” Its goal is: “By 2022, Malaria transmission will have been interrupted in all provinces (except Palawan), 75 provinces will have been declared Malaria-free and the number of indigenous Malaria cases will be reduced to less than 1,200, i.e., by at least 75% relative to 2018.”

The objectives of the NSPCEM 2020-2022 are to:

- Ensure universal access to reliable diagnosis, highly effective and appropriate treatment and preventive measures;
- Strengthen the capacity at all levels to manage and implement Malaria interventions;
- Secure government and non-government financing to sustain Malaria control and elimination efforts at all levels; and
- Ensure quality Malaria services, timely detection of infection and response and information and evidence to guide Malaria elimination.

The NSPCEM 2020-2022 used the Monitoring & Evaluation Performance Framework to track the performance of each indicator annually. The baseline year for the performance framework of the NSPCEM 2020-2022 is 2018 and each of the indicator for each strategy is measured in terms of actual performance based on the target set in 2021 and 2022.

3.2 Accomplishment: Impact Targets

- Malaria Cases and Deaths

For 2022, the target is to reduce the number of confirmed Malaria cases by at least 75%, that is, from a baseline of 4,807 in 2018 to a target of 1,200 cases by end of 2022. The actual reduction based on the accomplishment is only 33% which brought the cases from 4,807 in 2018 to 3,207 cases 2022.

As for reducing confirmed Malaria deaths to zero, this target is fully accomplished with no cases of confirmed Malaria deaths in 2022.

Indicator	Baseline (2018)	2021		2022	
		Target	Actual	Target	Actual
No. of confirmed Malaria cases reduced by at least 75%	4,807	2,400	4,262	1,200	3,207
No. of confirmed Malaria deaths reduced to zero	1	0	3	0	0

- Province with Annual Parasite Index (API) ≥ 1 per 1,000 at-risk population: Palawan

These two indicators are exclusively for the Province of Palawan. The target for the number of confirmed Malaria cases for 2022 is 1,200. However, the actual accomplishment is 3,173 cases which is a reduction by 1,576 or 33% relative to the baseline of 4,749 cases in 2018.

As for the number of municipalities in Palawan with transmission, this was reduced from 13 in 2018 to 10 municipalities in 2022. The target, however, is to reduce to four (4) municipalities by end of 2022.

Indicator	Baseline (2018)	2021		2022	
		Target	Actual	Target	Actual
No. of confirmed Malaria cases reduced by at least 90%	4,749	2,400	4,188	1,200	3,206
No. of municipalities with transmission	13	6	11	4	10

- Province with Annual Parasite Index (API) < 1 per 1,000 at-risk population in 2018: Mindoro Occidental, Sultan Kudarat, Sulu

The number of provinces with API < 1 per 1,000 at-risk population in 2018 is three (3) and this was targeted to be reduced to zero in 2022. This was fully accomplished.

As for the number of confirmed Malaria cases, these were reduced to zero in 2022 as targeted.

Indicator	Baseline (2018)	2021		2022	
		Target	Actual	Target	Actual
Provinces with API < 1 per 1,000 at-risk population in 2018 (Mindoro Occidental, Sultan Kudarat, Sulu)	3	0	2	0	0
No. of confirmed, indigenous Malaria cases reduced to zero (0)	58	0	72	0	0

- Provinces with zero indigenous Malaria cases and Malaria-free

In 2018, of the 80 provinces, the number of provinces declared Malaria-free is 50 while the number of provinces with zero indigenous cases but are not yet declared Malaria-free is 27. The target for

2020 is to increase the number of provinces declared Malaria-free to 75 and the number of provinces with zero indigenous cases but are not yet declared Malaria-free to five (5). The actual accomplishment in 2022 is 66 provinces which were declared Malaria-free and 15 provinces which are set to be declared Malaria-free.

Indicator	Baseline (2018)	2021		2022	
		Target	Actual	Target	Actual
No. of provinces with zero indigenous cases (not yet declared Malaria-free)	27	8	16	5	15
No. of provinces declared Malaria-free	50	72	62	75	66

- Number of independent, chartered and HUCs with transmission

The target for 2022 is that there will be no independent, chartered and HUCs with transmission. However, one HUC had transmission in in 2022.

Indicator	Baseline (2018)	2021		2022	
		Target	Actual	Target	Actual
No. of independent, chartered and HUCs with transmission	1	1	1	0	1

3.3 Accomplishment by Strategic Objective

3.3.1 SO1: Universal Access to Prevention and Case Management

The first objective which is universal access to prevention and case management is designed to meet the Service Delivery objective of the Strategic framework 2017-2022 of the F1+ (DOH, 2018b). It is also aligned with the core strategies of the World Health Organization's (WHO) Global Technical Strategy (GTS) (WHO, 2015) and Regional Framework.

Strategy 1.1: Maintain and augment Malaria interventions in endemic areas and active and residual foci (Palawan, Sultan Kudarat, Occidental Mindoro).

Indicator 1.1.1 is the proportion of parasitology confirmed Malaria cases that received first-line anti-Malarial treatment according to national guidelines. The baseline target is 82% in 2018 and the target is to reach 100% in both 2021 and 2022. Actual accomplishment is 88% in 2021 and 97% in 2022.

Indicator 1.1.2 includes five sub-indicators on proportion of treated Malaria cases and indigenous severe cases. Data on the proportion of treated Malaria cases that were followed with slide on day 3 (1.1.2a) is low as can be gleaned from the available data from Sultan Kudarat in 2021 (0.09%). The Province of Sultan Kudarat have data on the follow up examinations on their cases. As for proportion of treated Malaria cases that followed with slide on day 14 (1.1.2b) and

proportion of cases followed up on day 3 that were negative (1.1.2c), the accomplishment for 2021 is lower than the targets. For the proportion of cases followed up on day 14 that were negative (1.1.2d), the accomplishments for 2021 is higher than the set target. As for data on the proportion of indigenous cases that were classified as severe (1.1.2e), the target for 2022 which is less than 1% was achieved in Q2 2022.

Indicator 1.1.3 pertains to the distribution of long-lasting insecticidal nets (LLINs). In 2021, the country performed well as it went beyond the 100% target in the proportion of population living in endemic areas, active and residual foci potentially covered by LLINs distributed at a ratio of 1 net per 1.8 persons within current and preceding one year (1.1.3a). In 2022 accomplishment, the country reached a coverage of 99.62%.

The targets for LLIN distribution each year for each province used the 2018 population-at-risk (PAR) which was determined using the foci stratification (active and residual non-active). In the planning for the LLIN targets for 2021, 2022 and 2023, the assumption is that there were distribution in the past two years (not preceding one year), with attrition of 20% per year.

The customized mobile LLINs for deep forest workers, the conical or bivouac LLINs, targets the IPs group of Pal'wan in Rizal, Palawan; specifically, the male working age population engaged in farming and forest activity. The single nets are for the use of the IPs population that are deep forest workers, with an assumption that their child of at least seven (7) years old is already accompanying them in their forest work. Thus, for the singular rectangular nets, the target populations are the IPs population and their child. Note that each customized net and a single rectangular nets is good for one (1) person.

For Indicator 1.1.3b, the number of family type of LLIN distributed is 175,957 in 2020, 190,058 in 2021 and 261,687 in 2022. The number of conical type of LLIN distributed is 308 in 2020, 2,708 in 2021 and 935 in Q2 2022. Meanwhile, the number of single rectangular type of LLIN distributed in 111,390 in 2020, 1,849 in 2021 and 77,996 in 2022.

As for Indicator 1.1.4, in 2021, there was no Bednet Utilization Survey (BUS) conducted while the results for 2022 shows a 94.53% of informants to having slept the previous night under an LLIN.

The two indicators for 1.1.6 refers to activities on IRS. From 2021 to 2022, there are no data on the proportion of endemic areas or active foci protected by two rounds of IRS (Indicator 1.1.6a). This will become available through the OLMIS when it is 100% implemented in active and residual non-active areas. As for the proportion protected by one round of IRS with a long-acting WHO-approved and non-pyrethroid insecticide (1.1.6b), there is no data as only pyrethroid insecticide has been procured by DOH Central Office for spraying.

There are no data on accomplishment for Indicator 1.1.7 or the proportion of houses in endemic areas of Palawan, or active foci, protected by IRS, where spraying was complete as per independent post-spray supervision report. The post-spray supervision is only being conducted by the supervisors of the CHD.

Strategy 1.2: Ensure continuous access to Malaria diagnosis, treatment and preventive measures in zero-indigenous Malaria and Malaria-free provinces. As of Q2 2022, there were 60 out of 80 non-endemic provinces (except Palawan) with zero indigenous cases served by a functional elimination hub (Indicator 1.2.1). This accomplishment is lower than the target for this year which is 75 non-endemic provinces.

There is no data for the accomplishment for Indicator 1.2.2 which refers to the proportion of health facilities belonging to each province Health Care Provider Network (HCPN) having received orientation on Malaria vigilance. The target for both 2021 and 2022 is 100%. Similarly, there is no data on the proportion of provinces with at least one hospital where trained clinicians and medicines for management of severe Malaria are available (Indicator 1.2.3). The target for 2022 is also 100%.

For Indicator 1.2.4 or the proportion of confirmed cases in non-endemic provinces, who are treated and followed-up as per guidelines, in 2021, of the 38 patients, only five (5) submitted data for follow-up, two (2) completed the day 28, one (1) completed the day 14 follow-up and two (2) completed the day 3 follow-up. In 2022,, only six (6) submitted data for follow-up for which one (1) completed day 21 follow-up, three (3) completed day 7 follow-up and two (2) completed day 3 follow-up.

In 2022, the proportion of imported cases that were classified as severe (Indicator 1.2.5) is 13.16%% which is significantly higher than the target of less than 1%.

Strategy 1.3: Implement responsive Malaria interventions among identified high-risk population groups. As for indicators under Strategy 1.3 (Table 10), there were no operational plans developed for each high-risk group (Indicator 1.3.1) and therefore follow-through activities (Indicators 1.3.2a and 1.3.2b) were not conducted.

Strategy 1.4: Ensure that travelers to endemic countries and endemic areas in Philippines have access to information, chemo prophylaxis and personal protection. There are two indicators under this strategy which are: development of action plan for protection of travelers against Malaria based on stakeholders analysis (1.4.1) and number of agencies with which effective collaboration has been established (1.4.2). In 2022, there was no action plan for protection of travelers which was developed.

3.3.2 Governance and Human Resources (SO2)

The second objective on governance and human resources responds to the strategic values of the F1+ that address leadership and management capacities, coordination, and support mechanisms necessary to ensure functional, people centered and participatory health systems. It is aligned with Element 1 of the Regional Framework and Supporting Element 2 of the WHO GTS which is strengthening the enabling environment (WHO, 2015).

Strategy 2.1: Establish functional organizational structures and Malaria workforce at all levels. As of Q2 2022, all 17 DOH ROs have appropriate number per category of staff for the Malaria Program (Indicator 2.1.2); all Provincial Health Offices (PHOs) have designated Malaria Point Person, Provincial/City Epidemiology and Surveillance Unit (P/CESU) personnel and Quality Assurance (QA) Validator (Indicator 2.1.3) and all Municipal Health Offices (MHOs) in Palawan with designated Malaria Point Person, M/CESU personnel and Medical Technologist (Indicator 2.1.4). As for the number of DOH-Central Offices (DOH-Infectious Disease Office (IDO)), there were only four (4) out of the nine (9) having appropriate number of category of staff (Indicator 2.1.1) from 2020 to 2022.

Strategy 2.2 Strengthen the policy environment, management systems and coordination mechanism in support of Malaria elimination. Under Strategy 2.2., LGUs prepared their respective sustainability plans (Indicator 2.2.1) during series of workshops conducted early in 2022. In terms of the number of functional collaborating centers, , the target of seven (7) centers was achieved.

3.3.3 Financing Accelerated Malaria Control and Elimination (SO3)

Objective 3 which is financing accelerated Malaria control and elimination is designed to meet the Financial Risk Protection guarantee of the Philippines Health Agenda (PHA) and F1+ by ensuring that adequate resources are available to eliminate Malaria as a public health problem in the Philippines and prevent re-establishment of transmission. Similar with Pillar 2, it is informed by Supporting Element 1 of the Regional Framework and Supporting Element 2 of the WHO GTS.

Strategy 3.1 Secure adequate government and non-government financial resources in support of Malaria control and elimination. In terms of sustaining or increasing the DOH national and sub-national budget for the Malaria program (Indicator 3.1.1), in 2021, the actual accomplishment exceeded that of the target of PhP223 million. In 2021, the actual budget for the Malaria program is PhP189,288,583.00. In 2022, the budget for Malaria is at PhP219,616,041.00.

For the proportion of provinces and chartered cities following a cost-sharing scheme between DOH and LGUs (Indicator 3.1.2), there are no data yet for actual accomplishment.

3.3.4 Regulation, Quality Assurance, Use of Data and Information and Performance Accountability (SO 4)

Objective 4 focuses on the mandate of F1+ to ensure high level of quality for all services, goods and commodities provided by the program. Related to this, it covers use of data for decision-making; monitoring and evaluation with emphasis on performance accountability in accordance with objective 5 of F1+. It is informed by Pillar 3 and Supporting Elements 1 and 2 of the Regional Framework and the WHO GTS. The Supporting Element 1 of the WHO GTS is harnessing innovation and expanding research and the Supporting Element 2 is strengthening the enabling environment (WHO, 2015).

Strategy 4.1 Ensure high quality Malaria diagnosis and treatment through effective quality assurance systems. In terms of the number and proportion of public health facilities providing microscopy services that participate in the QAS for each category (Indicator 4.1.1a), the accomplishment is very low compared to the target with none for 2021 and Q2 2022. Similarly, the accomplishment for the proportion of public health facilities participating in QAS that passed QA for each category is also low compared to the targets. Note that due to the pandemic and ensuing lockdown, mobility was restricted thus the QAS were put on-hold in some areas.

As for the proportion of Rapid Diagnostic Test (RDT) batches procured that underwent validation and that proportion that passed validation (Indicator 4.1.2), in 2021 and 2022, the 100% accomplishment indicated is only applicable for RDTs procured by TGF as there was no DOH procurement due to failed bidding.

Strategy 4.2 Improve and maintain high quality and effective vector control measures. The indicator in this strategy is the number of sites in Palawan, Mindoro Occidental and Sultan Kudarat conducting bioassay tests on LLINs, on sprayed surfaces. Actual accomplishments from 2021 to 2022 is lower than the target.

Strategy 4.3 Strengthen Malaria case surveillance and response systems in support of Malaria elimination according to the Malaria Surveillance and Response Strategy. In terms of the proportion of confirmed Malaria cases notified within 24 hours of consultation (Indicator 4.3.1), from 2021 to 2022 the actual accomplishments were lower than the target of 90% (64.10%) This similar pattern can be observed with Indicator 4.3.2 or the proportion of confirmed Malaria cases investigated and classified within three (3) days of consultation. The accomplishment from 2021 onwards are lower than the targets.

The actual accomplishments from 2021 on the proportion of foci investigated with appropriate response initiated within five days of case detection (Indicator 4.3.3) are also significantly lower than the targets. Meanwhile, the targets for the proportion of active and residual inactive foci which were reassessed annually (Indicator 4.3.4) are already achieved at 100%. As for the proportion in the three highest endemic municipalities in Palawan identified by mapping by the program in mid-2020 having undergone RDT test in annual mass survey in November from 2020 (Indicator 4.3.5), there was no data on available data in the accomplishment for all three years.

Strategy 4.4 Maintain effective Malaria Program monitoring and evaluation systems. Among the five indicators, Indicator 4.4.5 is completed as of 2021. This pertains to the Malaria Program performance which is reviewed annually and during end-of-plan. The PHO Region 4B and national program was not able to conduct monitoring the highest incidence municipalities of Southern Palawan at least once per quarter by PHO Region 4B and national program.

Strategy 4.5 Implement a research agenda in support of the plan's goal. Among the activities identified under Indicator 4.5.1 which refers to the number of planned research activities completed, disseminated and utilized for program, only the BUS was conducted in 2020 and 2022. The rest were not conducted.

3.4 Accomplishment by Program Component

3.4.1 Program Management

The delivery of anti-Malarial services is a shared responsibility among the national and local government as well as the stakeholders and partners. The national government, through the DOH, sets the program's policies, standards and guidelines, provides training, augments the logistic and financial requirements of LGUs for anti-Malaria services, establishes and operates quality assurance for microscopy, treatment and vector control measures, designs health promotion materials and other approaches and conducts regular monitoring and evaluation. The Global Fund provides support to the program through the Pilipinas Shell Foundation, Inc. (PSFI) and is present in the three provinces (Mindoro Occidental, Palawan and Sultan Kudarat). Part of the support of The Global Fund is channeled through the WHO Country Office in the Philippines which is used mainly for technical staff, training and consultancies. The PSFI provides the technical and administrative staff in the TGF-supported provinces, particularly in Palawan.

As part of its responsibility, the DOH issues policies and guidelines to support the Malaria Program. In Table 12, these policies are indicated together with the status of its dissemination. Almost all of these policies were already disseminated.

In 2021, the policies include those related to the establishment of elimination hub for Malaria and Lymphatic Filariases; guidelines on the use of OLMIS; implementation of reports forms in Palawan; implementation of NMCEP amidst the COVID-19 pandemic; screening of returning Overseas Filipino Workers (OFWs) from Malaria-endemic countries; and interim guidelines on the assessment and declaration of Malaria-free provinces. In 2022, the Disease Prevention and Control Bureau (DPCB) released Administrative Order (AO) 2022-0018 (DOH, 2022) or the Development and Utilization of the Omnibus Health Guidelines per Lifestage (child, adolescent, adult, elderly). This serves as the overarching policy that integrates key policy provisions of governing various health programs and standards of case aimed to at delivering health services through a life course approach.

Table 12: Summary of Policies and Memorandums for NMCEP, 2020-2022

Malaria Policy/Guideline	Status
1. AO 2021-003: Guidelines on the Establishment of Integrated Elimination Hub for Malaria and Lymphatic Filariasis	Disseminated
2. AO 2021-0028 Implementing Guidelines on the Use of Online Malaria Information System (OLMIS)	Disseminated; ongoing roll out of the system to the LGU
3. Department Memorandum (DM) 2021-0089 Implementation of Malaria Monthly Summary Report Forms at Barangay and Municipal Level in Palawan	Disseminated

Malaria Policy/Guideline	Status
4. DM 2021-0329 Enhanced Adaptive Plan in the Implementation of the National Malaria Control and Elimination Program amidst the COVID-19 Pandemic	Disseminated
5. DM 2021-0437 Advisory on the Malaria Screening of Returning OFWs from Malaria Endemic Countries	Disseminated
6. Department Circular (DC) 2021-0429 Interim Guidelines on the Assessment and Declaration of Malaria-Free Provinces in the Philippines	Disseminated
7. DC 2022-0344 Dissemination of the Omnibus Health Guidelines per Lifestage	Dissemination of Omnibus Health Guidelines per Lifestage

3.4.1.1 Human Resources and Capacity Building

Central Office

Under the current structure of the DPCB, Malaria is handled by the Vector and Vector Borne Diseases Team, which includes a medical officer, and two nurses. Other functions of the Malaria program are augmented by development partners such as PSFI and WHO.

The PSFI provides technical assistance for the following positions: Surveillance Officer, Medical Technologist, Entomologist, OLMIS Manager, Technical Assistant, IT OLMIS Officer, and Administrative Assistant. The WHO Philippines also provides technical assistance through a Technical Coordinator integrated with other tropical diseases under UHC. However, some technical positions, such as the medical technologist and entomologist, were not filled up from 2020-2022 first semester. The position of entomologist was filled up only in the third quarter of 2022.

Regional Office

All the Centers for Health Development have the appropriate number of staff for the Malaria program. There were six new Regional Malaria Coordinators from CHDs 1,2, 5, 10, 11, CARAGA, and BARMM since the last evaluation of the program in 2019, primarily due to retirement and promotions.

Regional Collaboration Centers

The original sites for the Collaboration Centers in Davao, Palawan, San Fernando (Pampanga) and Tuguegarao (Cagayan). However, Collaboration Centers were also established in CALABARZON, Cebu and Zamboanga in response to the request of the CHDs.

Due to the COVID-19 pandemic and the ensuing mobility restrictions, conduct of the trainings became limited. Further, funding for the conduct of trainings has started to dwindle. Other limitations that affect the capacity building efforts for health systems strengthening include the

deteriorating Malaria training slides, and inadequate manpower as trainers. As for the Collaboration Centers, the transfer of some CHDs (CHDs 7 and 9) to a new location and the conversion of the collaboration building as offices as in the case in CHD 11 will have serious implications to sustainability of operations of these centers.

Based on reports, there is a need for the Program to reiterate/re-emphasize the objectives and importance of the Collaboration Centers and the need to renew the commitments to its objectives and aspirations as well as the responsibilities for their upkeep.

3.4.1.2 Financing

The following funding has been realized in the country for the response of Malaria. In 2021, the total funds allocated for the Malaria program is approximately 322 million pesos. This amount increased by 16% in 2022 with total funds allocated for the Malaria program amounting to approximately 373 million pesos (Table 13).

Table 13: Funds for Malaria by Source and by Year (2021, 2022)

Source of fund	2021	2022
DOH	PhP189,288,583.00	PhP219,616,041.00
CHD	59,558,061.13	59,197,331.62
LGU	76,858,606.66	96,288,878.73
Total	PhP325,705,250.79	PhP375,102,251.35

3.4.2 Vector Control

3.4.2.1 Indoor Residual Spraying (IRS)

Table 14 provides data on IRS in Palawan from 2020 to 2022. In 2020, the coverage is at least 75% for the first cycle and at least 85% for the second cycle. In 2021, the coverage from the first cycle is similar with that of 2020 while for the second cycle, the minimum percent of coverage is slightly higher than previous year at 88%. For the third cycle, the coverage is at least 86%. For 2022, the coverage in the first cycle ranged from 86% to almost 100%. The coverage increases with the second and third cycles for this year.

The M&E for IRS should be updated in line with international recommendations to include for example, reporting on volumes of insecticides used and on post-spraying supervision.

Table 14: Conduct of IRS in Palawan, by Cycle, Target HH, Actual HH and Coverage and by Municipality from 2020 to 2022

Year	Municipality	IRS (1 st cycle)			IRS (2 nd cycle)			IRS (3 rd cycle)		
		Target HH	Actual HH	Coverage	Target HH	Actual HH	Coverage	Target HH	Actual HH	Coverage
2020	Aborlan	175	165	94.29%	607	538	88.63%	No third cycle		

Year	Municipality	IRS (1 st cycle)			IRS (2 nd cycle)			IRS (3 rd cycle)		
		Target HH	Actual HH	Coverage	Target HH	Actual HH	Coverage	Target HH	Actual HH	Coverage
	Balabac	1,550	1,177	75.94%	2,365	2,015	85.20%			
	Bataraza	7,718	7,535	97.63%	6,311	6,293	99.71%			
	Brooke's Point	5,068	4,867	96.03%	7,583	7,554	99.62%			
	Sofronio Española	2,654	2,650	99.95%	2,751	2,735	99.42%			
	Narra	669	643	96.11%	694	651	93.80%			
	Puerto Princesa	3,619	Not Conducted due to COVID-19	3,210	2,914	90.78%				
	Quezon	3,148	3,046	96.76%	3,800	3,787	99.66%			
	Rizal	13,001	12,724	97.87%	11,540	11,298	97.90%			
2021	Aborlan	727	652	89.68%	815	727	89.20%	897	893	99.55%
	Balabac	2,192	1,636	74.63%	NA			2,181	1,886	86.47%
	Bataraza	9,259	8706	94.02%	1,046	1,042	99.62%	9,029	8,992	99.59%
	Brookes Point	10,049	10,040	99.91%	2,578	2,573	99.81%	10,313	10,203	98.93%
	Narra	689	673	97.67%	71	71	100%	882	849	96.25%
	Puerto Princesa City	3,508	3,131	89.25%	721	635	88.07%	4,375	4,230	96.68%
	Quezon	4,822	4,777	99.06%	776	776	100.0%	4,843	4,803	99.17%
	Rizal	13,415	13,199	98.38%	2,491	2,442	98.03%	12,622	12,279	97.28%
	Sofronio Española	2,563	2,561	99.92%	1,257	1,256	99.92%	2,512	2,510	99.92%
2022	Aborlan	949	815	85.87%	NO OPERATION			782	708	91.00%
	Balabac	1,590	1,367	85.97%	1,481	1,301	87.84%	1,002	915	91.00%
	Bataraza	9,903	9,801	98.97%	1,783	1,700	95.34%	9,107	8,841	97.00%
	Brookes Point	9,397	9,371	99.72%	3,523	3,519	99.88%	9,505	9,422	99.00%
	Narra	819	720	87.91%	355	347	97.74%	757	705	93.00%
	Puerto Princesa City	2,551	2325	91.14%	1,776	1,576	88.73%	2,353	2,123	90.00%
	Quezon	6,503	6475	99.56%	1,296	1,281	98.84%	6,564	6,192	94.00%
	Rizal	11,704	11,473	98.02%	3,848	3,819	99.24%	11,510	11,295	98.00%
	Sofronio Española	2,533	2,530	99.88%	1,356	1,356	100%	3,029	3,029	100.00%

Outside of Palawan, only two rounds of IRS were conducted and these are in municipalities of Mindoro Occidental and Sultan Kudarat (Table 15). The coverage in the first round goes beyond 100% in most of the municipalities. For the second round, except in Magsaysay in Mindoro Occidental with 74% coverage, the rest of the municipalities in the two provinces have almost 100% coverage with some going beyond.

Table 15: Conduct of IRS Outside Palawan, by Round, Target HH, Achieved and Coverage and by Municipality and Province

Province	Municipality	First Round			Second Round		
		Target	Achieved	Coverage	Target	Achieved	Coverage
Mindoro Occidental	Abra de Ilog				477	588	123.27%
	Magsaysay				883	649	73.50%

Province	Municipality	First Round			Second Round		
		Target	Achieved	Coverage	Target	Achieved	Coverage
	Mamburao				431	429	99.54%
	Sablayan				193	186	96.37%
	San Jose				509	466	91.55%
Sultan Kudarat	Sen. Ninoy Aquino	2,073	2,154	104%	2,154	2,427	112.67%
	Kalamansig	1,938	2,059	106%	2,059	2,101	102.04%
	Palimbang	3,110	3,163	102%	3,381	3,724	110.14%
	Esperanza	1,889	1,891	100%	1,891	1,861	98.41%
	Lebak	322	323	100%	323	324	100.31%
Sultan Kudarat	Kalamansig	2,004	2,039	102%	2,197	2,180	99.23%
	Palimbang	3,100	3,100	100%	3,100	3,104	100.13%
Sultan Kudarat	Kalamansig	2,197	2,182	99%	2,182	2,159	98.95%
	Palimbang	3,480	3,510	101%	3,808	3,831	100.60%
	Esperanza	1,982	2,018	102%	1 Cycle Only		
	Sen. Ninoy Aquino	499	515	103%	1 Cycle Only		

3.4.2.2 Long-Lasting Insecticidal Net (LLIN)

Table 16 shows the distribution of family size LLIN in the Provinces of Occidental Mindoro, Palawan and Sultan Kudarat. Of the three provinces, the municipalities in Sultan Kudarat have the highest coverage in 2022. In Occidental Mindoro, two municipalities have less than 5% coverage and these are Paluan and Santa Cruz. As for Palawan, only Puerto Princesa City had a coverage of less than 20%; the rest had at least 56 percent.

Table 16: Distribution of Family Size LLIN by Province and Municipality, 2020 to 2022

Province/ Municipality	2018 PAR	LLIN requirem ent (1 net per 1.8 persons)	Family size LLIN				Coverage at 1 net per 1.8 persons		
			2020	2021	2022	Grand Total	2020	2021	2022
Occidental Mindoro									
Abra De Ilog	16,814	9,341				15,000	128%	62%	0.00%
Calintaan		-	1,000	233	1,091	4,834	-	-	-
Looc		-		250	450	700	-	-	-
Lubang		-		400	196	596	-	-	-
Magsaysay		-	1,000	1,909	2,452	9,311	-	-	-
Mamburao (Capital)	10,189	5,661	3,000	212	3,985	20,526	226%	107%	107.69 %
Paluan	3,707	2,059			70	7,207	273%	126%	3.40%
Rizal		-	500	400	3,000	8,050	-	-	-
Sablayan		-	2,000	2,059	2,636	15,095	-	-	-
San Jose	13,502	7,501	4,700	3,681	4,052	22,183	168%	160%	138.28 %
Santa Cruz	3,252	1,807			68	9,568	449%	276%	3.76%
Total-Occidental Mindoro	47,464	26,369	12,200	9,144	18,000	113,070	251%	176%	125.61 %
Palawan									
Aborlan	25,386	14,103	6,068	10,094	4,861	38,790	149%	173%	126.42 %
Araceli		-	1,204	981	3,197	7,183	-	-	-
Balabac	43,412	24,118	10,296	4,739	9,261	33,048	73%	76%	83.41%

Province/ Municipality	2018 PAR	LLIN requirement (1 net per 1.8 persons)	Family size LLIN				Coverage at 1 net per 1.8 persons		
			2020	2021	2022	Grand Total	2020	2021	2022
Bataraza	81,617	45,343	20,580	20,515	16,323	96,892	114%	117%	105.77 %
Brooke's Point	71,784	39,880	17,466	16,805	17,431	78,136	98%	109%	109.66 %
Busuanga	-	-			331	4,683	-	-	-
Coron	-	-				3,538	-	-	-
Culion	-	-				-	-	-	-
Dumaran	1,525	847		137	2,202	8,102	463%	85%	274.46 %
El Nido (Bacuit)	17,447	9,693	3,549	4,970	3,699	21,386	122%	144%	107.74 %
Linapacan	-	-				3,873	-	-	-
Narra	67,594	37,552	11,500	21,550	17,362	86,258	112%	136%	117.48 %
Puerto Princesa City (Capital)	244,575	135,875	8,103	15,054	6,525	54,185	21%	25%	18.59%
Quezon	65,948	36,638	14,253	25,396	8,405	83,132	117%	146%	110.22 %
Rizal (Marcos)	54,178	30,099	12,690	12,150	36,913	96,392	136%	128%	185.95 %
Roxas	38,033	21,129	6,365	10,929	36,195	78,979	126%	124%	237.13 %
San Vicente	32,234	17,908	5,390	1,679	5,072	25,492	89%	63%	56.02%
Sofronio Española	35,555	19,753	10,495	12,674	9,536	49,075	121%	149%	140.03 %
Taytay	44,110	24,506	6,950	16,900	6,374	58,663	130%	162%	106.23 %
Total-Palawan	823,398	457,443	134,909	174,573	183,687	827,807	84%	94%	89.56%
Sultan Kudarat									
Bagumbayan	-	-	700		5,955	14,416	-	-	-
Columbio	-	-	2,100	484		8,666	-	-	-
Esperanza	6,874	3,819	3,564	252	1,209	12,949	240%	124%	97.33%
Kalamansig	14,039	7,799	6,656		15,140	34,015	221%	163%	248.73 %
Lebak	5,804	3,224	5,472		3,054	23,068	576%	441%	203.32 %
Palimbang	41,176	22,876	8,106	2,384	21,247	53,781	117%	91%	124.94 %
Sen. Ninoy Aquino	12,321	6,845	2,250	3,221	13,395	35,705	241%	202%	259.08 %
Total: Sultan Kudarat	80,214	44,563	28,848	6,341	60,000	182,600	215%	165%	187.45 %
Grand Total	951,076	528,376	175,957	190,058	261,687	1,123,477	104%	104%	99.62%

From 2018 to 2022, half a million of single-size LLINs were distributed in Palawan with Brooke's Point and Bataraza sharing a little more than 20% of the total (Table 17). About 40% of the LLINs were distributed in 2018 alone.

Table 17: Single-size LLINs Distributed in Palawan from 2018 to 2022

Municipality	PAR 2018	Number of nets required	2018	2019	2020	2021	2022	Grand Total
Aborlan			8,093	3,885	3,950	-	3,289	19,217
Araceli			7,179	149	366		1,485	9,179
Balabac	42,552	37,787	11,255	7,963	11,712	561	2,259	33,750

Municipality	PAR 2018	Number of nets required	2018	2019	2020	2021	2022	Grand Total
Bataraza	79,999	60,655	9,330	18,291	15,250	-	15,366	58,237
Brooke's Point	70,359	44,208	17,966	13,903	12,703	494	13,805	58,871
Busuanga			8,287	2,757				11,044
Coron			3,664	1,297				4,961
Culion			32	1,000				1,032
Dumaran			3,931	84			1,157	5,172
El Nido (Bacuit)			11,496	3,540	2,453	-	600	18,089
Linapacan			3,123	734				3,857
Narra			10,529	12,539	10,500	-	5,499	39,067
Puerto Princesa City (Capital)			23,345	5,528	6,398	85	2,500	37,856
Quezon	69,084	59,085	9,918	8,800	14,747	-	3,630	37,095
Rizal (Marcos)	54,476	40,978	20,579	7,481	9,031	709	6,127	43,927
Roxas			21,394	6,717	4,470	-	9,283	41,864
San Vicente			10,385	2,116	5,534	-	3,288	21,323
Sofronio Española	34,850	31,652	9,516	4,059	6,526	-	5,518	25,619
Taytay			14,842	6,249	7,750	-	4,190	33,031
GRAND TOTAL	351,320	274,365	204,864	107,092	111,390	1,849	77,996	503,191

Conical nets were distributed in Palawan from 2020 to 2022 as shown in Table 18. A total of 3,951 of these nets were distributed in nine (9) barangays in the province.

Table 18: Conical Nets Distributed in Palawan, by Barangay from 2020 to 2022

Barangay	2020	2021	2022	Total
Bunog		450	0	450
Campong Ulay		450	50	500
Candawaga	29	400	200	629
Canipaan	46	0	78	124
Culasian		0	0	0
Iraan		450	31	481
Latud		0	0	0
Panalingaan	82	132	0	214
Punta Baja	62	195	300	557
Ransang	89	631	176	896
Taburi		0	100	100
Total	308	2708	935	3,951

3.4.3 Diagnostic Services and Case Management

3.4.3.1 Access to Diagnostic Services

In Palawan, as of October 2022, there were 463 RDT volunteers in 14 municipalities. Almost half of them are found in Rizal, Brooke's Point and Bataraza (Table 19).

Table 19: Number of RDT Volunteers in Palawan, 2021

Municipality	2021	ND	Grand Total	Jun-14	Aug-17	Sep-22	Oct-12	Total
Aborlan	4		12			2		14
Brooke's Point			2			2		4
Balabac	15		38	1				39
Bataraza	18	3	64	17			1	82
Brooke's Point	25	23	83					83
Dumaran		4	7		2		8	17
Narra	6		11			2		13
Puerto Princesa City			10					10
Quezon	10	1	23		4			27
Rizal	15	26	78		13	4	1	96
Roxas	10	6	27			8		35
S. Española	8	2	29					29
San Vicente			4					4
Taytay		1	1				9	10
Grand Total	111	66	389	18	19	18	19	463

3.4.3.2 Case Finding

Malaria test positivity rate (TPR) monitors the impact of the program on Malaria transmission. The slide positivity rate is the proportion of positives tests in a given sample. From 2020 to 2022, the slide TPR decreased from 1.17 to 0.41, respectively (Table 20).

Patients with suspected Malaria were also tested using RDT. Overall, less than 5% of those tested for Malaria were positive with TPR going down from 3.7% in 2020 to 1.5% in 2022. The overall TPR also declined from 2.6% in 2020 to 1.1% in 2022.

Table 20: Test Positivity Rates, by Year, by Type of Test, Philippines 2020 to 2022

Type of Test	2020	2021	2022
Slide Microscopy	104,823	111,172	94,352
Positive	1,229	641	387
SPR	1.17%	0.58%	0.41%
RDTs	132,287	115,862	195,972
Positive	4,891	3,656	2,858
RDTPR	3.70%	3.16%	1.46%
Total Examinations	237,110	227,034	290,324
Case Positive	6,120	4,297	3,245
Overall TPR	2.58%	1.89%	1.12%

Comparing the three provinces, TPR in Mindoro Occidental is consistent at zero from 2020 to 2022 (Table 21). In Palawan, TPR gradually decreased from 2020 to 2022 (3.3% to 1.3% overall

TPR). As for Sultan Kudarat, there is an overall decrease in overall TPR from 2020 (1.3%) to 2021 (0.8%) which eventually dropped to zero in 2022.

Table 21: Test Positivity Rates, by Year, Type of Test in Malaria Active Provinces, 2020-2022

Type of Test	2020			2021			2022		
	Mindoro Occidental	Palawan	Sultan Kudarat	Mindoro Occidental	Palawan	Sultan Kudarat	Mindoro Occidental	Palawan	Sultan Kudarat
Slide Microscopy	3,961	64,717	7,184	4,376	93,589	2,246	2,944	72,710	1,233
Positive	-	1,149	49	-	595	24	-	357	-
SPR	0.00%	1.78%	0.68%	0.00%	0.64%	1.07%	0.00%	0.49%	0.00%
RDTs	6,744	114,715	3,394	4,214	100,860	6,888	10,897	167,862	10,610
Positive	-	4,795	93	-	3,593	47	-	2,849	-
RDTPR	0.00%	4.18%	2.74%	0.00%	3.56%	0.68%	0.00%	1.70%	0.00%
Total Examinations	10,705	179,432	10,578	8,590	194,449	9,134	13,841	240,572	11,843
Case Positive	-	5,944	142	-	4,188	71	-	3,206	-
Overall TPR	0.00%	3.31%	1.34%	0.00%	2.15%	0.78%	0.00%	1.33%	0.00%

3.4.4 Treatment

3.4.4.1 Adherence to Treatment

The AO 2009-001 or the Revised Policy and Guidelines on the Diagnosis and Treatment of Malaria (DOH, 2009) was issued by DOH in 2009 to guide health workers and medical practitioners in implementing the updated diagnosis and treatment of Malaria, promote the compliance and adherence of the DOH offices, the LGUs and private sector to the revised diagnosis and treatment guide; generate support from other stakeholders to ensure implementation of the revised guidelines nationwide. Table 22 shows the number and proportion of the confirmed Malaria cases who were treated based on these guidelines. Overall, compliance to the guidelines improved from 80% in 2020 to 97% in 2022.

Table 22: Number and Proportion of the Confirmed Malaria Cases (Indigenous and Imported) Who Received Treatment* According to the National Treatment Guidelines, Philippines, 2020-2022

Year	Compliant		Non-Compliant		Total
	No.	%	No.	%	
2020	4,890	79.90%	1,230	20.10%	6,120
2021	3,801	88.46%	496	11.54%	4,297
2022	3,149	97.04%	96	2.96%	3,245

*Based on records review of the patients

Similar compliance can be observed for local cases which also improved from 80% in 2020 to 98% in 2022. As for a very few imported-local cases, treatment of such were non-compliance with the guidelines from 2020 to 2021. This quite improved with just one case in 2022 which was treated based on the national treatment guidelines (Table 23).

Table 23: Number and Proportion of Indigenous Confirmed Malaria Cases Who Received Treatment According to the National Treatment Guidelines, Philippines 2020-2022

Year	Local					Imported-Local				
	Compliant		Non-Compliant		Total	Compliant		Non-Compliant		Total
	No.	%	No.	%		No.	%	No.	%	
2020	4,881	80.19%	1,206	19.81%	6,087	0	0.00%	2	100.00%	2
2021	3,795	89.08%	465	10.92%	4,260	0	0.00%	2	100.00%	2
2022	3,136	97.82%	70	2.18%	3,206	1	100.00%	0	0.00%	1

At least 67% of the cases imported from abroad were given treatment that is not compliance with the national treatment guidelines as can be gleaned from data for 2020 to 2022 (Table 24). There should be a follow-through for these treatments to find out the reasons for non-compliance to the said guidelines.

Table 24: Number and Proportion of Imported-Abroad Confirmed Malaria Cases Who Received Treatment According to the National Treatment Guidelines, Philippines 2020-2022

Year	Compliant		Non-Compliant		Total
	No.	%	No.	%	
2020	9	30.00%	21	70.00%	30
2021	6	17.14%	29	82.86%	35
2022	13	33.33%	26	66.67%	39

Similarly, the lone induced confirmed Malaria case in 2020 also received treatment that is non-compliant with the national treatment guidelines (Table 25).

Table 25: Number and Proportion of Induced Confirmed Malaria Cases Who Received Treatment According to the National Treatment Guidelines, Philippines 2020-2022

Year	Compliant		Non-Compliant		Total
	No.	%	No.	%	
2020	0	0.00%	1	100.00%	1
2021	0	-	0	-	0
2022	0	-	0	-	0

3.4.5 Surveillance

Surveillance in Malaria involves case finding, diagnosis with laboratory confirmation and recording and reporting. The objective of surveillance is to provide an operational scheme for rapid detection, through assessment and management. A surveillance system requires a functional case-finding structure and mechanism/system; presence of functional Malaria diagnostic and treatment capacities; functional recording and reporting network (OLMIS); presence of Malaria rapid assessment and response team as embodied by the Malaria Elimination Hub or its counterpart; and a functional Quality Assurance System for diagnosis and treatment.

The investigating team involves the following:

- The Malaria coordinator or point person to determine the stratification and Malaria transmission status of the area and carry out the foci investigation
- A surveillance personnel to carry out the epidemiological investigation
- A medical technologist to validate the laboratory results
- An entomologist to conduct receptivity determination
- A physician to evaluate diagnosis and treatment

Surveillance in elimination areas aims to prevent re-establishment/re-introduction and subsequent resurgence in Malaria transmission. In low endemic, sporadic transmission areas, surveillance provide early detection and cure, halt transmission and further spread. This will facilitate a rapid quality control check system for Malaria diagnosis and treatment. It will also enhance the Malaria recording and reporting system for purposes of documenting all cases

3.4.5.1 One-Three-Five (1-3-5) Surveillance Strategy/Approach

Table 26 shows the number and proportion of cases notified, cases investigated and foci investigation for the last three years. The proportion of cases notified within 24 hours decreased from 91% in 2020 to 64% in 2022 while the proportion of cases notified after 24 hours increased from 9% to 33% in the same years. Similarly, the proportion of cases investigated within three days decreased from 92% in 2020 to 77% in 2022 while the number of cases investigated after three days increased from 9% to 21%. As for foci investigation, the proportion of foci investigated within 5 days increased from 5% in 2020 to 28% in 2022. The same increasing trend is observed for foci investigated after 5 days from 2% in 2020 to 18% in 2022.

Table 26: Number and Proportion of Case Notified, Cases Investigated and Foci Investigation, by Year, Philippines 2020-2022

Year	Number of cases	Case Notification				Case Investigation					Focus Investigation				
		Cases notified within 24 hours		Cases notified more than 24 hours		Cases investigated within three days		Cases investigated more than three days		Cases investigated	Foci investigated within 5 days		Foci investigated more than 5 days		Foci investigated
2020	176	160	90.9%	16	9.1%	161	91.5%	15	8.5%	100.0%	9	5.1%	4	2.3%	7.4%
2021	109	77	70.6%	32	29.4%	88	80.7%	20	18.4%	99.1%	4	3.7%	14	12.8%	16.5%
2022	39	25	64.1%	13	33.3%	30	76.9%	8	20.5%	97.4%	11	28.2%	7	18.0%	46.2%

3.4.5.2 Malaria Elimination Hubs

Currently, a total of 66 provinces have established elimination hub while 60 have functional elimination hubs (Table 27).

Table 27: Percent of Elimination Hubs Established in the Provinces, by Region and Functionality, Philippines 2022

CHD	No. of Province	Name of Province	No. of Provinces with Established Elimination Hubs	% Established	No. of Provinces with Functional Elimination Hubs	% Functional (from total no. of provinces)
Cordillera Administrative Region (CAR)	6	Abra, Apayao, Benguet (Incl. Baguio City), Ifugao, Kalinga Mountain Province	6	100.00%	0	0.00%
Region 1 (Ilocos Region)	4	Ilocos Norte, Ilocos Sur, La Union, Pangasinan	4	100.00%	4	100.00%
Region 2 (Cagayan Valley)	5	Batanes, Cagayan, Isabela, Nueva Vizcaya, Quirino	0	0.00%	0	0.00%
Region 3 (Central Luzon)	7	Aurora, Bataan, Bulacan, Nueva Ecija, Pampanga (Incl. Angeles City), Tarlac, Zambales (Incl. Olongapo City)	7	100.00%	7	100.00%
Region 4A (CALABARZON)	4	Batangas, Cavite, Laguna, Quezon (Incl. Lucena City), Rizal	5	100.00%	5	100.00%
Region 4B (MIMAROPA)	5	Marinduque, Occidental Mindoro, Oriental Mindoro, Palawan (Incl. Puerto Princesa City), Romblon	3	60.00%	3	60.00%
Region 5 (Bicol Region)	6	Albay, Camarines Norte, Camarines Sur, Catanduanes, Masbate, Sorsogon	4	66.67%	4	66.67%
Region 6 (Western Visayas)	6	Aklan, Antique, Capiz, Guimaras, Iloilo (Incl. Iloilo City), Negros Occidental (Incl. Bacolod City)	5	83.33%	5	83.33%
Region 7 (Central Visayas)	4	Bohol, Cebu (Incl. Cebu and Lapu Cities), Negros Oriental, Siquijor	4	100.00%	4	100.00%

CHD	No. of Province	Name of Province	No. of Provinces with Established Elimination Hubs	% Established	No. of Provinces with Functional Elimination Hubs	% Functional (from total no. of provinces)
Region 8 (Eastern Visayas)	6	Biliran, Eastern Samar, Leyte (Incl. Tacloban City), Southern Leyte, Northern Samar, Samar (Western Samar)	6	100.00%	6	100.00%
Region 9 (Zamboanga Peninsula)	3	Zamboanga Del Norte, Zamboanga Del Sur (Incl. Zamboanga City), Zamboanga Sibugay	3	100.00%	3	100.00%
Region 10 (Northern Mindanao)	5	Bukidnon, Camiguin, Lanao Del Norte (Incl. Iligan City), Misamis Occidental, Misamis Oriental (Incl. Cagayan De Oro City)	5	100.00%	5	100.00%
Region 11 (Davao Region)	5	Davao de Oro, Davao Del Norte, Davao Del Sur (Incl. Davao City), Davao Occidental, Davao Oriental	5	100.00%	5	100.00%
Region 12 (SOCCSKSARGEN)	4	North Cotabato, Sarangani, South Cotabato (Incl. General Santos City), Sultan Kudarat	4	100.00%	4	100.00%
Region 13 (CARAGA)	5	Agusan Del Norte (Incl. Butuan City), Agusan Del Sur, Dinagat Islands, Surigao Del Norte, Surigao Del Sur	5	100.00%	5	100.00%
Bangsamoro Autonomous Region in Muslim Mindanao (BARMM)	6	Basilan, Lanao Del Sur, Maguindanao del Sur, Maguindanao del Norte, Sulu, Tawi-Tawi	0	0.00%	0	0.00%
17	82	66	80.48%	60	73.17%	66

3.4.5.3 Screening of Returning OFWs from Malaria Endemic Countries

As the country controls Malaria in the remaining areas of foci, provinces with zero indigenous cases, both Malaria-free and in elimination, must be able to sustain and maintain their status. Considering the high proportion of severe malaria among imported cases and the risk posed by delayed treatment in relation to re-establishment of transmission, this area must be considered a priority for the program at the national level.

The core intervention for the prevention of re-establishment of Malaria transmission in these areas is surveillance. Through a functional and robust surveillance system, the impact of threats, such as imported cases may be lessened. Preventing re-establishment of Malaria transmission in a Malaria-free and elimination area encompasses early detection of any Malaria infection in person entering the Malaria-free and elimination area by screening. This ensures any suspected Malaria case is recognized at the primary level of care and can be rapidly diagnosed, treated, reported and investigated (case and foci investigation), most especially when an imported case is found in a potentially receptive area (1-3-5 Malaria Surveillance and Response Strategy).

The program has initiated contacts with the Bureau of Quarantine and the Overseas Workers Welfare Administration (OWWA) of Department of Labor and Employment about IEC for travelers. It is now time to establish a systematic plan of action to deal with malaria in international travelers. The strategy will depend on extensive consultations, orientations, revision of policies and production and dissemination of IEC materials. It is not foreseen that the program will take responsibility for supplying medicines or nets to these groups. One IEC element already identified is the placement of posters directed at departing and arriving international travelers in all international airports.

In addition, a memorandum was issued to provide guidance on the screening of returning OFWs from Malaria endemic countries and must be monitored for the development of Malaria symptoms for at least two weeks (incubation period), and be tested accordingly (DOH, 2021e). Box 1 provides the guidelines for malaria screening of OFWs lifted from the memorandum.

Box 1: Malaria Screening on Returning Overseas Filipino Workers (OFWs) from Malaria Endemic Countries (DOH, 2021e)

All Malaria suspects shall be subjected to laboratory diagnosis.

- Microscopy remains to be the gold standard for diagnosing Malaria. All areas with a functional laboratory and trained Malaria microscopists shall employ this standard at all times.
- Diagnosis through Rapid Diagnostic Test kits that have passed quality control tests shall only be used in the following situations:
 - If there is no microscopy center in the area/province;
 - If the microscopy center is in an accessible coastal or island areas;
 - Areas with reported outbreaks;
 - Hospitals without a trained microscopist during emergency situations

All confirmed Malaria cases shall be treated in accordance with the revised National Treatment Protocol.

A confirmed Malaria case shall prompt the 1-3-5 Malaria Surveillance and Response Strategy:

- Case notification shall be conducted within 24 hours or 1 day upon consultation.
- All notified cases shall be investigated within 3 days to confirm the diagnosis and treatment, and classify the type of case within 3 days of detection as to:
 - Manner of transmission – local, indigenous, imported or induced;
 - Epidemiological classification – suspect, probable or confirmed
 - Case type – new, old – relapse or recrudescence; and
 - Severity of infection – uncomplicated or severe
- The focus of all investigated cases shall be investigated within 5 days of detection to determine the type of focus, and take appropriate response
- All confirmed cases shall be reported through the OLMIS and referred to the LGUs from which the case resides.

The response of the confirmed Malaria case to treatment shall be monitored through Malaria microscopy on Day 3, 7, 14, 21 and 28. Medical clearance should be issued only after Malaria microscopy examinations showed negative results.

3.4.6 Vector Surveillance

3.4.6.1 Present distribution of Malaria vectors in the Philippines

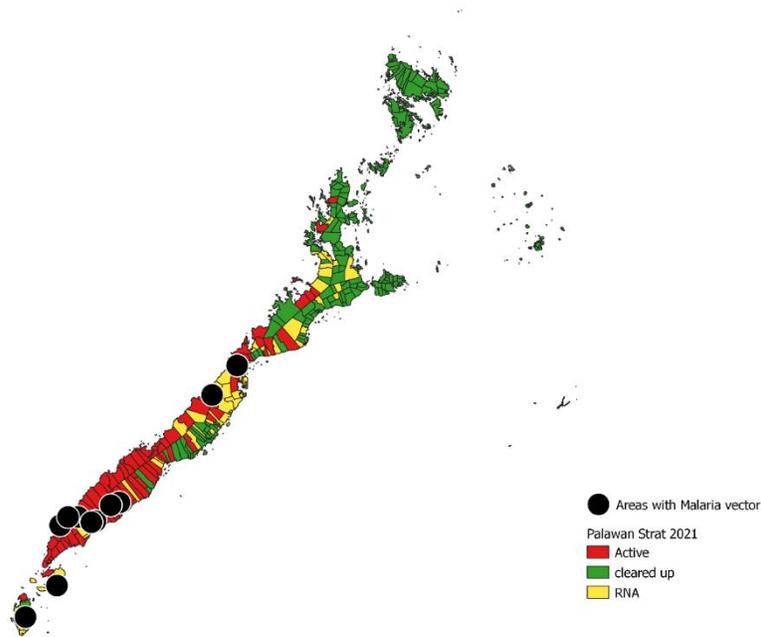
Figure 12 shows the distribution of Malaria vectors in the Philippines for the years 2018 to 2022. Areas with blue triangles are those with Malaria primary and secondary vectors. With the restriction of movement due to the pandemic and changes in offices of the Department of Health, limited vector mapping was conducted. The map shows that Malaria vectors are still present even in the Malaria free provinces which makes them receptive. This necessitates ensuring that case surveillance is always be in place. Note that the data only covers 2018-2022 vector mapping.

Figure 12. Distribution of Malaria Vectors in the Philippines, 2018-2022



For Palawan (Figure 13), the vector mapping is concentrated in the southern part where local cases are still high. It is ideal that North Palawan municipalities will be mapped also to find the receptive areas since people from South Palawan reported that they have residents who goes home or travel to North Palawan municipalities.

Figure 13. Distribution of Malaria Vectors in Palawan, 2015-2022



3.4.6.2 Training in Entomology and Vector Control

The training on Basic Entomology focusing on Dengue, Lymphatic Filariasis and Malaria surveillance was conducted to build the capacity of PHO staff on different entomological skills such as identification and collection of different mosquitoes related to different vector-borne diseases. The training focuses not only on Malaria surveillance but also added other vector-borne diseases (Dengue and Lymphatic Filariasis) following the DOH's directives to implement integrated vector management strategy.

The training commenced in mid-2019 with participants from Luzon and Visayas provinces. There were two batches of training which did not proceed due to the moratorium implemented hence participants from Mindanao who belong to these batches were not able to join the training. The RITM planned to conduct the training via online in 2021 to finish the batches of the training. With the lifting of COVID-19 health protocols, training resumed in 2022 and will be concluded in early 2023.

As for the first batches of trainees, the Project will look into conduct of refresher training for newly hired appointed entomologist as some of those who were already trained were promoted to a new position or have transferred to other offices.

3.4.7 Quality Assurance

There were two (2) batches of ECAMM that were conducted in the third quarter of 2022 which catered to different CHDs. This is summarized in Table 28 below. The validity of the certification will be until 2025.

Table 28: Number of Participants to the ECAMM Training, by Level of Certification and by CHD

CHD	WHO ECAMM Certification Level			Grand Total
	Level 1	Level 2	Level 3	
CAR		1		1
1		1		1
2	2			2
3	1	1		2
4A	2			2
4B	2			2
5		1		1
7	1	1		2
9	1			1
10	2			2
11	1		1	2
12	1			1
Caraga			1	1
BARMM		1		1
RITM	2			2
Total	15	6	2	23

3.5 Issues and Challenges

The implementation of the NSPCEM 2020-2023 coincided with the COVID-19 pandemic which significantly affected most, if not, all of the health services. Indeed, the COVID-19 pandemic exposed the vulnerability of the country's health system, from record-keeping, to surveillance, actual service delivery and follow-up. In July 2022, the CHDs were requested to provide inputs on the issues and challenges that they encountered when they implemented the activities under the Malaria Program in their respective regions since 2020. Accordingly, all regions had to re-focus their human and financial resources to COVID-19 response and activities at the expense of other health programs. This shift in focus is also true at the sub-regional levels.

Almost all health programs were stalled due to moratorium or work from home arrangement and restrictions. This opened up an alternative for communicating and conducting training which is via virtual/online meetings/trainings. However, this approach was not spared when it comes to challenges in the implementation. The unstable internet connection led to incomplete and interrupted learning on the part of the trainees as they have to struggle with catching up with the lessons and lectures. This also means unassured focus/poor concentration on the part of both the facilitators and trainees. Overall, these technical problems affected the quality of the training and the achievement of training objectives.

In 2021 when health protocols began to relax, there was a shift from virtual to blended/face-to-face training. However, adherence to minimum public health standards meant fewer number of participants and more batches of training.

For regions who were able to implement a few of their Malaria program activities, there was a feeling of uncertainty in terms of sustaining these activities due to limited supplies in the region. In some areas, case finding was deemed “inadequate” due to limited stocks of Malaria RDT kits, insufficient stocks of insecticide for IRS operations, limited stocks of Giemsa stain solution and stock-out out in diagnostic kits and anti-Malarial drugs.

For others with enough stock of Malaria commodities such as LLINs, IRS and laboratory supplies, they encountered delayed in the delivery of these commodities to stakeholders since COVID-19 vaccines and other commodities were prioritized. In situations when there are surges in COVID-19 infections, transport of commodities and provision of services were discontinued.

Monitoring of facilities was also a challenging task as this activity is conducted on a limited number of days, again, in adherence to health protocols. This is also true when providing technical assistance to LGUs especially in far-flung areas where mobility is worsened by the unavailability of means of transportation. In terms of providing updates on the program via online, regional staff also encountered connectivity issues and difficulty to communicate real-time data.

On the part of the clients and patients, it did not help that in areas where health-seeking behavior was already a problem even during pre-pandemic period, the situation worsened during the pandemic because of limited mobility, strict health protocols and fear of contracting the disease. To add to this, gains from areas where health seeking behavior already improved prior to the pandemic were reversed as they, too, did not seek health services especially during the lockdown period.

In regions where there were already barangays that have been cleared up for Malaria, there were resurgence noted. The inadequate case finding (both passive and active) in outbreak barangays due to limited stocks of Malaria RDT kits exacerbated this situation, in addition to other concerns within the areas such as COVID-19 protocol restrictions and insurgency problem.

In regions where Malaria has been eliminated for a long time, it was difficult to push for activities as the LGU no longer prioritize Malaria program. To encourage participation, Malaria activities were integrated with other programs such as Dengue.

4 Malaria Transition, Elimination and Sustainability Plan 2023-2028

4.1 Rationale

Based on the experience of the Philippines in the implementation of the Malaria program amidst the COVID-19 pandemic, there is a need to accelerate conduct of activities particularly those that will be carried in the next planning cycle.

The 82 provinces of the country is classified into three: 66 malaria-free provinces, 15 elimination provinces and one (1) control province. The following table (Table 29) provides a distinction of the different classification.

Table 29: Characteristics of Philippine Provinces, by Classification

	Malaria-free provinces (66)	Elimination provinces (15)	Control province (1)
Local malaria transmission	Absent for more than 5 years	Absent for 3 to 5 years	Still with local malaria transmission
Classification	Officially declared malaria-free province	Awaiting assessment and official declaration	17 municipalities with active transmission in 2021
Number of provinces	66	15	1
Immediate concern	Prevention of re-introduction	Prevention of re-introduction, undergo assessment and get declared Mindoro Occidental and Sultan Kudarat to reach elimination by 2023	Palawan to reach zero by 2026

In the **malaria-free provinces**, local transmission have been absent for more than five (5) years and were officially declared malaria-free provinces. Table 30 provides the list of malaria-free provinces by year of declaration.

The immediate concern in these provinces is preventing the re-introduction of cases. There is a need to assess the services that need to be strategically established and packaged comprehensively to ensure that service demand is planned for based on assessed needs and delivered with utmost efficiency and effectiveness while making implementation simple, open to integration with other similar diseases and in compliance with the Universal Health Care principles.

Table 30: List of Malaria-Free Provinces, by Year of Declaration

Year of Declaration	No.	Provinces
Malaria-free historically	3	Cebu, Bohol, Catanduanes
1995	10	Iloilo, Aklan, Capiz, Guimaras, Leyte, Biliran, Camiguin, Siquijor, Northern Samar, Southern Leyte
2005	3	Benguet, Masbate, Cavite
2008	6	Surigao del Norte, Marinduque, Western Samar, Eastern Samar, Albay, Sorsogon
2010	1	Batangas
2011	1	Camarines Sur
2012	3	Batanes Islands, Dinagat Islands, Romblon
2014	1	Abra
2015	4	Quirino, Davao Oriental, Lanao del Norte, Misamis Occidental
2016	4	Mountain Province, Nueva Vizcaya, Misamis Oriental, South Cotabato
2017	6	Bataan, La Union, Pangasinan, Ilocos Norte, Surigao del Sur, Compostela Valley
2018	8	Ilocos Sur, Kalinga, Bulacan, Pampanga, Bukidnon, Davao Occidental, Ifugao, Agusan del Sur
2019	10	Tarlac, Laguna, Quezon, Antique, Negros Oriental, Zamboanga del Norte, Zamboanga Sibugay, Davao del Sur, Sarangani, Agusan del Norte
2021	2	Negros Occidental, Apayao
2022	4	Mindoro Oriental, Rizal, Aurora, Cotabato
Total	66	

In the **elimination provinces**, local malaria transmission have been absent for at least three (3) years and is awaiting assessment and official declaration. Currently, there are 15 elimination provinces in the country that will be targeted for declaration as malaria-free from 2023 to 2026 as shown in the table below. The main concern in these provinces is preventing re-introduction, undergoing assessment and getting cleared.

Table 31: List of Province by Year of Target Declaration

2023 (n=6)	2024 (n=4)	2025 (n=2)	2026 (n=1)	2027 (n=2)
<ul style="list-style-type: none"> • Cagayan (R2) • Isabela (R2) • Nueva Ecija (R3) • Zambales (R3) • Zamboanga del Sur (R9) • Davao del Norte (R11) 	<ul style="list-style-type: none"> • Camarines Norte (R5) • Maguindanao del Norte (BARMM) • Maguindanao del Sur (BARMM) • Sulu (BARMM) 	<ul style="list-style-type: none"> • Basilan (BARMM) • Tawi Tawi (BARMM) 	<ul style="list-style-type: none"> • Lanao del Sur (BARMM) 	<ul style="list-style-type: none"> • Mindoro Occidental (R4B) • Sultan Kudarat (R12)

Palawan is the only province in the country which is a **control area** and with local malaria transmission. In 2022, there were 10 municipalities and 1 city with active transmission. For Palawan, it is critical to reach zero by 2026.

Each classification of areas are challenged by current threats. The population in all provinces, regardless of classification, are susceptible to the disease.

- In all provinces, the malaria parasite may be re-introduced by identified high-risk groups such as OFWs, seafarers, local and foreign tourists, uniformed/armed personnel and migrant entrepreneurs. The anopheles mosquito also remain present in some areas of malaria-free provinces, in previously malaria areas in elimination provinces and in transmission supporting densities in control areas.
- In elimination areas, the malaria parasite may be introduced as well due to its presence in peripheries and border areas among IPs groups. In Sultan Kudarat ang Mindoro Occidental, the cases occur due to low-level persistent vivax cases which gave rise to low-level secondary transmission in areas that have “gone silent” for two to three years.
- In Palawan, which is a control area, the malaria parasite is present among IPs groups engaged in forest-related livelihoods. The peak transmission probably resulted from the forest exposure cycle during the planting and harvesting periods.

Following this risk analysis, the current Philippine Malaria Transition, Elimination and Sustainability Plan (MTESP) 2023-2030 espouses an approach which will cover all the provinces of the country from both sides of the elimination spectrum. This direction is developed to simplify the approaches and make program directions and activities open to integration with other programs while ensuring that the original objective of the elimination program is reiterated and implemented as planned.

4.2 Goal and Objectives

The strategy matrix for a malaria-free Philippines in 2030 is provided in Table 32. To achieve the MTESP 2023-2028 goal, all 82 provinces of the country should be declared malaria-free by 2030. This will be accomplished through the Plan’s three objectives: (1) Reduce malaria in Palawan by zero by 2026; (2) Declare 81 provinces malaria-free by 2027 and Palawan malaria-free by 2029; and (3) Sustain malaria-free status; prevent re-establishment of malaria transmission in 82 provinces.

4.3 Strategic Pillars

The four (4) strategic pillars are aligned with the objective of the FOURmula One Plus for Health and WHO strategies.

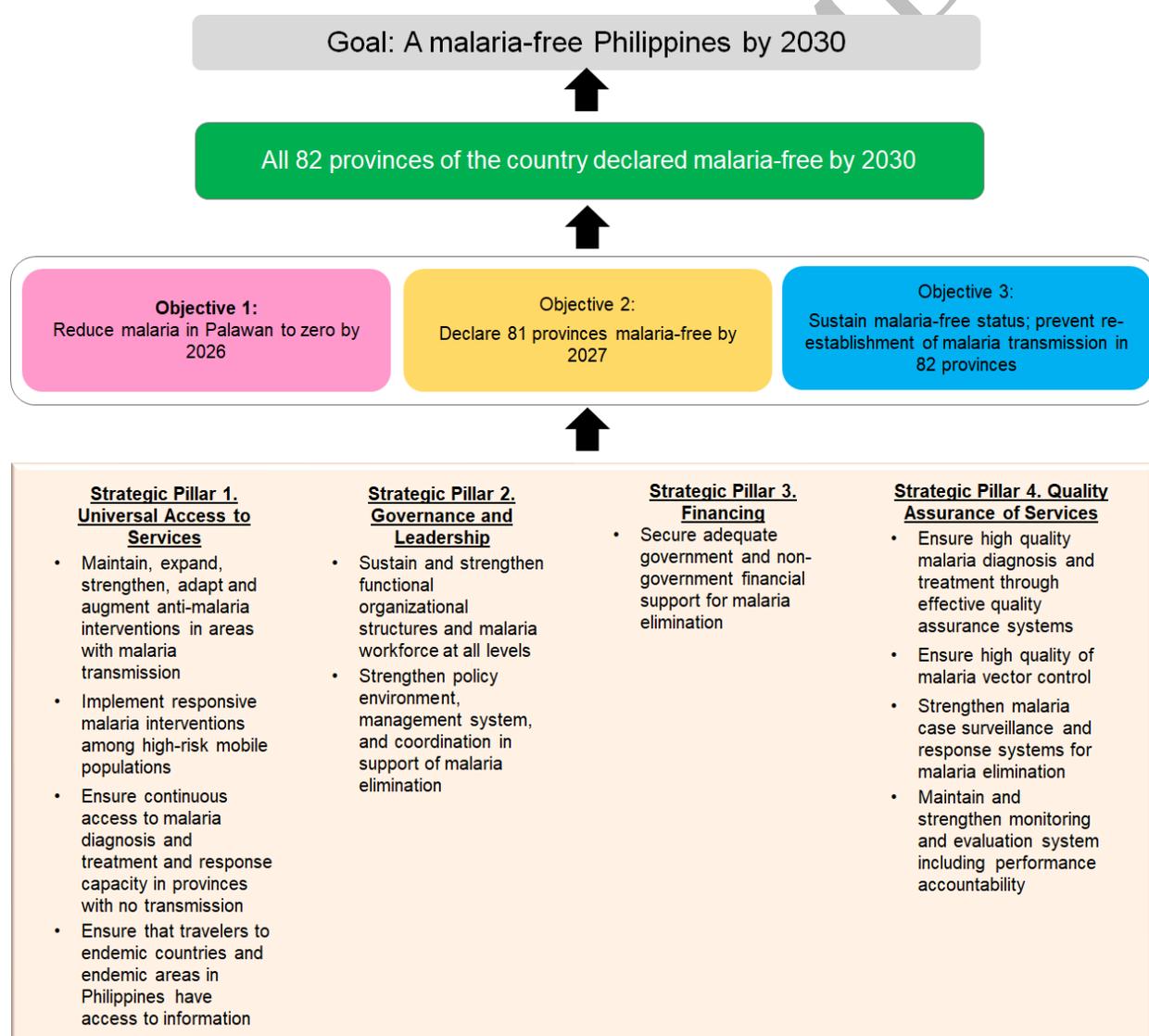
Strategic Pillar 1: Universal Access to Services: Ensure universal access to reliable diagnosis, highly effective and appropriate treatment and preventive measures.

Strategic Pillar 2: Governance and Leadership: Strengthen the capacity at all levels to manage and implement Malaria interventions in all provinces.

Strategic Pillar 3: Financing: Secure government and non-government financing to sustain Malaria elimination efforts at all levels in all provinces.

Strategic Pillar 4: Quality Assurance of Services: Ensure availability of quality Malaria services and timely detection of infection as well as response and information and evidence to guide Malaria elimination in all provinces.

Figure 14. Framework of the MTESP 2023-2028



4.4 Impact Targets

Table 32 summarizes the progressive targets under the MTESP 2023-2028 for a range of core impact indicators in Palawan and the rest of the provinces who are in the elimination stage or are already declared malaria-free.

Table 32: Malaria Impact Targets, MTESP, 2023-2028

Impact Indicator		Baseline	Target					
		2022	2023	2024	2025	2026	2027	2028
1.1	Number of confirmed indigenous malaria cases	3207	2244	1122	481	0	0	0
1.2	Number of confirmed indigenous malaria deaths	0	0	0	0	0	0	0
1.3	Number of municipalities with transmission	10	8	8	8	0	0	0
1.3a	Number of barangays with active transmission	95	87	87	87	0	0	0
1.3b	Number of barangays with non-residual transmission	69	60	35	8	87	87	87
2.1	Number of provinces with zero indigenous cases (not yet declared malaria-free)	15	9	5	3	3	1	1
2.2	Number of provinces declared malaria-free	66	72	76	78	79	81	81
3	Number of independent chartered and highly urbanized cities (HUCs) with transmission	1	1	1	0	0	0	0

In **Palawan** (control province), program performance will be assessed based on the number of: confirmed indigenous malaria cases and deaths; municipalities and barangays with active transmission; and barangays with non-residual transmission

In the **15 elimination provinces**, program performance in terms of number of provinces with zero indigenous cases will be assessed. Also, the number of provinces declared malaria-free will be assessed.

For the HUCs, program performance in terms of number with transmission will be assessed.

4.5 Strategic Pillar, Strategy, Sub-Strategy and Activities

4.5.1 Strategic Pillar 1: Universal Access to Services

The following are the strategies and the corresponding indicators that will be assessed to ensure universal access to reliable diagnosis, highly effective and appropriate treatment and preventive measures. These include maintaining, expanding, strengthening, adapting and augmenting anti-Malaria interventions; implementing responsive Malaria interventions among high-risk mobile population; ensuring access to Malaria diagnosis and treatment and response capacity; and ensuring that travelers to endemic countries and endemic areas in the country have access to information.

Strategy	Indicator
Strategy 1.1: Maintain, expand, strengthen, adapt and augment anti-Malaria interventions	Indicator 1.1.1 <i>Proportion of parasitologically confirmed malaria cases that received first-line antimalarial treatment according to national guidelines</i>
	Indicator 1.1.2a <i>Proportion of treated malaria cases that were followed with slide on day 3</i>
	Indicator 1.1.2b <i>Proportion of treated malaria cases that followed with slide on day 28</i>
	Indicator 1.1.3a <i>Proportion of cases followed up on day 3 that were negative</i>
	Indicator 1.1.3b <i>Proportion of cases followed up on day 28 that were negative</i>
	Indicator 1.1.4 <i>Proportion of indigenous cases that were classified as severe</i>
	Indicator 1.1.5 <i>Proportion of population living in endemic areas, active and residual foci potentially covered by LLINs distributed at a ratio of 1 net per 1.8 persons within current and preceding two year, disaggregated by municipality (operations data)</i>
	Indicator 1.1.6a <i>Number of family type LLINs distributed relative to target populations during current and preceding 2 years disaggregated by municipality (operations data)</i>
Indicator 1.1.6b <i>Number of single type LLINs distributed relative to target populations during current and preceding 2 years disaggregated by municipality (operations data)</i>	
Indicator 1.1.7 <i>Proportion of houses in endemic areas, or active foci, protected by two rounds of indoor residual spraying.</i>	
Strategy 1.2:	Indicator 1.2.1

Strategy	Indicator
Implement responsive Malaria interventions among high-risk mobile populations	<i>Number of single conical LLINs distributed in Palawan relative to target populations during current and preceding 2 years disaggregated by municipality (operations data)</i>
	Indicator 1.2.2 <i>Number of sites that conducted full course of Mass Drug Administration</i>
Strategy 1.3: Ensure continuous access to Malaria diagnosis and treatment and response capacity	Indicator 1.3.1 <i>Proportion of non-endemic provinces (all except Palawan) with 0 indigenous cases served by a functional Elimination Hub</i>
	Indicator 1.3.2 <i>Proportion of health facilities belonging to each province Health Care Provider Network (HCPN) having received orientation on malaria vigilance (recognition of suspected malaria + knowledge of nearest diagnosis & treatment point) within latest year</i>
	Indicator 1.3.3 <i>Proportion of provinces with at least one hospital, where trained clinicians and medicines for management of severe malaria are available</i>
	Indicator 1.3.4 <i>Proportion of confirmed cases in non-endemic provinces, who are treated and followed up as per guidelines (criterion: Day 3, 7, 14, 21 28 slide)</i>
	Indicator 1.3.5 <i>Proportion of imported cases that were classified as severe</i>
Strategy 1.4: Ensure that travelers to endemic countries and endemic areas in Philippines have access to information	Indicator 1.4.1 <i>Number of people accessing the malaria website</i>

Strategy 1.1 Maintain, expand, strengthen, adapt and augment anti-Malaria interventions

- Strengthening Diagnostic Capacity

To strengthen capacity for diagnosis, there is a need to provide diagnostic equipment such as RDT and microscopy reagents. Equally important is to ensure the continuous provision of malaria-specific training and supervision as well as strengthening of quality assurance of malaria-related laboratory services.

Active case detection and investigation are crucial activities and these should be conducted and responded to as appropriate. In the event of an outbreak, all health facilities should have the capacity to respond.

- **Enhancing Clinical Management and Treatment**

The current first-line drug, Artemether-Lumefantrine (AL) has continued to show a high degree of efficacy to local Malaria transmission of all species. However, as more imported cases enter, especially for countries where known drug resistance to Artemisinin has been recorded, it is prudent as of this point to shift to a second-line drug of choice, quinine monotherapy to a second Artemisinin combination preparation. This shift is expected to help ensure rapid treatment while limiting possibilities of side effects especially among the more adult patients. A draft for the adoption of an alternative Artemisinin Combination Therapy (ACT), Pyronaridine artesunate is underway.

- **Undertaking Vector Control Measures**

LLIN. The cornerstone of prevention is high coverage and utilization levels for LLINs through a program of continuous rolling distribution and replacement of old and expired nets. This will be supplemented by targeted mass distribution where a large proportion of LLINs in a community are about to expire simultaneously (generally when they reach two years since original distribution). To improve the LLIN operations with the objective of improving the utilization, the distribution of LLINs will be via house-to-house with recording of numbers of different types of nets received by each household. The spraymen, field assistants and RDT Volunteers will be trained to assist in the distribution and face-to-face health education including helping families to hang the nets, providing tools, nails and tying material.

The procurement of appropriate sizes and numbers of LLINs will be according to DOH protocols and these will be distributed to the community at a ratio of 1 family-size net per 1.8 individuals to ensure a minimum ratio of 1 net to 2 household members in each household. In southern Palawan, the nets distributed are currently family-size or single rectangular. For single nets, the norm will be distribution of three per household, assuming that it will be needed by an average of two adult men going to the forest and one child aged more than seven years and traditionally entitled to separate sleeping space. The effective coverage will be monitored through indicators in "bednet" utilization surveys (BUS)

IRS. One of the primary vector control interventions to reduce and interrupt Malaria transmission is the Indoor Residual Spraying (IRS). It is the application of insecticides with high residual efficacy on internal wall surfaces of a house to kill target adult mosquito vectors which rest on wall surfaces. The IRS is effective for three to six months and it reduces the population of Malaria vector. A study on the effectiveness of Bifenthrin, a pyrethroid insecticide, for IRS thru wall bio-assay was conducted in Sitio Santo Niño of Barangay Napsan in Puerto Princesa City, Palawan. Its conclusion was to conduct three (3) cycles of spraying in one (1) year and after three (3) months to maintain the strength of toxicity of Bifenthrin to wall structures (Larracas, A.C. & Peralta, N., 2021).

- Health Promotion

Health promotion activities and strategies are important component to ensure that the community is well- and properly informed about the Malaria program to ensure full support and cooperation. The conduct of major activities, such as World Malaria Day and Malaria Awareness Month, are IEC/BCC campaigns themselves to ensure advocacy, communication and social mobilization activities.

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 1.1							
Maintain, expand, strengthen, adapt and augment anti-Malaria interventions							
Indicator/Sub-strategy/Activity	Baseline	2023	2024	2025	2026	2027	2028
	2022						
Indicator 1.1.1 Proportion of parasitologically confirmed malaria cases that received first-line antimalarial treatment according to national guidelines	97.07%	100%	100%	100%	100%	100%	100%
Indicator 1.1.3a Proportion of cases followed up on day 3 that were negative	No data	100%	100%	100%	100%	100%	100%
Indicator 1.1.3b Proportion of cases followed up on day 28 that were negative	No data	100%	100%	100%	100%	100%	100%
Indicator 1.1.4 Proportion of indigenous cases that were classified as severe	0.00%	<1%	<1%	<1%	<1%	<1%	<1%
Sub-strategy 1.1.1 Maintain and strengthen diagnostic capacity							
Activities							
1	Procure lab supplies and equipment for microscopy	■	■	■	■	■	■
2	Procure RDTs	■	■	■	■	■	■
3	Distribution of RDTs	■	■	■	■	■	■
4	RDT training to new volunteers	■	■	■	■	■	■
5	Training on basic malaria microscopy for MTs	■	■	■	■	■	■
6	Training on basic malaria microscopy for BMM	■	■	■	■	■	■
7	Refresher training for MTs	■	■	■	■	■	■
8	Refresher training for BMM	■	■	■	■	■	■
9	Elimination Training	■	■	■	■	■	■
10	Integrated Border Operations (Palawan)	■	■	■	■	■	■
11	Active Case Finding (Palawan)	■	■	■	■	■	■

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 1.1							
Maintain, expand, strengthen, adapt and augment anti-Malaria interventions							
Indicator/Sub-strategy/Activity	Baseline	2023	2024	2025	2026	2027	2028
	2022						
12	Integrated Malaria Service Delivery to GIDA areas (MAD)	■	■	■	■	■	■
13	Malaria Mortality Review	■	■	■	■	■	■
Indicator 1.1.2a Proportion of treated malaria cases that were followed with slide on day 3	No data	100%	100%	100%	100%	100%	100%
Indicator 1.1.2b Proportion of treated malaria cases that followed with slide on day 28	No data	100%	100%	100%	100%	100%	100%
Sub-strategy 1.1.2 Enhance Clinical Management and Treatment							
Activities							
1	Artemether Lumefantrine	■	■	■	■	■	■
2	Primaquine 7.5 mg	■	■	■	■	■	■
3	Artesunate	■	■	■	■	■	■
4	Artesunate Pyronaridine	■	■	■	■	■	■
5	Distribution of Antimalarials	■	■	■	■	■	■
6	Training for malaria clinical management	■	■	■	■	■	■
Indicator 1.1.5 Proportion of population living in endemic areas, active and residual foci potentially covered by LLINs distributed at a ratio of 1 net per 1.8 persons within current and preceding two year, disaggregated by municipality (operations data)	99.62%	100%	100%	100%	100%	100%	100%
Indicator 1.1.6a Number of family type LLINs distributed relative to target populations during current and preceding 2 years disaggregated by municipality (operations data)	340,618	355,243	276,040	240,579	166,015	113,434	136,900
Indicator 1.1.6b Number of single type LLINs distributed relative to target populations during current and preceding 2 years disaggregated by	77,996	100%	100%	100%	100%	100%	100%

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 1.1 Maintain, expand, strengthen, adapt and augment anti-Malaria interventions							
Indicator/Sub-strategy/Activity	Baseline						
	2022	2023	2024	2025	2026	2027	2028
municipality (operations data)							
Indicator 1.1.7 Proportion of houses in endemic areas, or active foci, protected by two rounds of indoor residual spraying	No data	100%	100%	100%	100%	100%	100%
Sub-strategy 1.1.3 Undertake Vector Control Measures							
Activities							
1	LLIN: Family size	■	■	■	■	■	■
2	LLIN: Single conventional nets	■	■	■	■	■	■
3	LLIN: Single Conical Net	■	■	■	■	■	■
4	Distribution , mounting, guidance (LLIN)	■	■	■	■	■	■
5	LLIN: Warehousing and storage for nets	■	■	■	■	■	■
6	Insecticide for IRS	■	■	■	■	■	■
7	IRS: Transport of insecticide from port to area of use	■	■	■	■	■	■
8	Warehousing IRS supplies	■	■	■	■	■	■
9	IRS: Spraycan, repair kit,	■	■	■	■	■	■
10	IRS: PPE	■	■	■	■	■	■
11	IRS: Training, orientation of spraymen	■	■	■	■	■	■
12	IRS: Supplies for training of spraymen	■	■	■	■	■	■
13	IRS: Salary of sprayman	■	■	■	■	■	■
14	IRS: Salary of spray supervisor	■	■	■	■	■	■
Sub-strategy 1.1.4 Health Promotion							
Activities							
1	World Malaria Day	■	■	■	■	■	■
2	Malaria Awareness Month	■	■	■	■	■	■

Strategy 1.2 Implement responsive Malaria interventions among high-risk mobile populations

- Mass Drug Administration

Based on WHO Guidelines (WHO, 2022), MDA is a form of chemoprevention which involves provision of full therapeutic course of an antimalarial medicine to individuals at increased risk

of malaria infection relative to the general population. Depending on the frequency and duration of exposure, MDA could be provided before, during or after potential exposure to malaria transmission. The antimalarial medicines given during MDA treat all existing infections. This is marked by WHO as conditional recommendation for very low certainty evidence.

MDA will be in addition to the interventions being conducted based on the micro-stratification being conducted by local implementers.

- **Conical Nets**

Conical LLINs are for persons staying away from home, specifically for forest workers. While this is an innovative for interventions, conical nets are expensive compared to the rectangular LLIN. There is then a need to build an evidence base by assessing its popularity through conduct of focus group discussions and demonstrations. In particular, these discussions should explore whether adhering to such type translates into increased use of ITNs particularly for these specific groups of individuals.

An operational research is currently being conducted to assess the use of conical bednet by the most at-risk population of South Palawan. The results of the study will be use on the further expansion based on its cost-benefits.

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 1.2							
Implement responsive Malaria interventions among high-risk mobile populations							
Indicator/Sub-strategy/Activity	Baseline						
	2022	2023	2024	2025	2026	2027	2028
Indicator 1.2.2 Number of sites that conducted full course of Mass Drug Administration	-	1	69	69	69	69	69
Sub-strategy 1.2.1 Mass Drug Administration							
Activities							
1	Training on Mass Drug Administration per health center (RHU staff, midwives, volunteers, etc.) topics on (clinical management, MDA process, monitoring of adverse effects, etc.) (Rizal, BP, Bat, Quezon, SP)	■	■	■	■	■	■
2	Community Engagement and Social Mobilization	■	■	■	■	■	■
3	Monitoring for compliance and adverse effects	■	■	■	■	■	■
4	Mass Drug Administration	■	■	■	■	■	■
5	Post MDA debriefing and reporting meeting per round	■	■	■	■	■	■
6	Procurement of Pyronaridine Artesunate	■	■	■	■	■	■

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 1.2 Implement responsive Malaria interventions among high-risk mobile populations							
Indicator/Sub-strategy/Activity	Baseline	2023	2024	2025	2026	2027	2028
	2022						
7	DOTs food Assistance	■	■	■	■	■	■
Indicator 1.2.1 Number of single conical LLINs distributed in Palawan relative to target populations during current and preceding 2 years disaggregated by municipality (operations data)	935	5211	-	-	-	-	-
Sub-strategy 1.2.2 Conical Nets							
Activities							
1	LLIN: Conical Nets	■	■	■	■	■	■
2	Distribution , mounting, guidance (LLIN)	■	■	■	■	■	■
3	LLIN: Warehousing and storage for nets	■	■	■	■	■	■

Strategy 1.3 Ensure continuous access to Malaria diagnosis and treatment and response capacity

- Field Assessment of Malaria Provinces

The primary consideration for declaring a province malaria-free is for it to present satisfactory data that will support the contention that there is no local transmission of malaria anywhere in the province, particularly in its previously or historically malaria endemic areas. This means presenting evidence that a thorough and exhaustive search for cases have been undertaken and that no local cases have been found for five (5) consecutive years. The NMCEP has embarked on a sub-national elimination as part of DOH's disease-free zones initiatives. By subjecting each of the provinces to a tedious scheme of assessment, the program is aiming to reach its target. The DOH issued the DC 2021-0429 or the Interim Guidelines on the Assessment and Declaration of Malaria-Free Provinces in the Philippines (DOH, 2021). This is to facilitate the rapid delivery of technical assistance to LGUs in evaluating provinces and to develop the supporting documents for their claim to be declared as malaria-free province. Box 2 provides the Criteria and Requirements for Declaring Provinces as Malaria-Free.

Box 2. Criteria and Requirements For Declaring Provinces as Malaria-Free (DOH, 2021)

A. Mandatory requirements

Box 2. Criteria and Requirements For Declaring Provinces as Malaria-Free (DOH, 2021)

- A. Absence of confirmed indigenous malaria cases in the last five years with the following supporting documents
 - a. Case/Malaria Investigation forms in the last five years for all suspect and confirmed malaria case including specific details on the response undertaken to prevent onward malaria transmission;
 - b. Supported with a 10-year epidemiological data on malaria cases;
 - c. Certification from Provincial Epidemiology and Surveillance Unit (PESU), Regional Epidemiology and Surveillance (RESU)/Epidemiology Bureau (EB) of no indigenous cases in the last five years
 - d. Detailed documentation/accounts of interventions implemented to interrupt transmission and reach elimination
 - e. Adequate case finding supported by an Annual Blood Examination Rate of not less than 3

- B. Presence of Functional Elimination Hub
 - a. Human Resource
 - i. Designated provincial malaria coordinator/point person
 - ii. Designated Entomologist at least at the Provincial Health Office
 - iii. Designated Quality Assurance (QAS) Validator at least at the provincial level
 - iv. Designated Health Education and Promotion

 - b. Commodities for anti-malarial interventions
 - i. Insecticides for conduct of Indoor Residual Spraying (IRS) as response to an outbreak in an identified focus (500 sachets)
 - ii. Long Lasting Insecticide Treated Nets (LLIN) for distribution to as response to an outbreak in an identified focus (500 bednets)
 - iii. Functional spraycans for conduct of IRS as response to an outbreak in an identified focus (at least 7 units)
 - c. Commodities for Malaria Case Detection and Management
 - i. Anti-malarial Drugs at the RHUs and Hospitals for treatment of patient/s positive for malaria infection (5 treatments)
 - ii. Buffer stock of anti-malarial drugs at the PHO (10 treatments)
 - iii. Laboratory supplies for Microscopy (cotton, alcohol, Giemsa Stain, blood lancet, immersion oil)
 - iv. RDT kits at least at the referral hospitals and the Provincial Hospital/PHO
 - d. Commodities for Entomological Surveillance and Activities
 - i. Access to stereoscope
 - ii. Access to Entomology Kit
 - iii. Access to Carabao Bait Trap

- C. Presence of a Functional Provincial Surveillance System with the following minimum requirements:
 - a. Designated Provincial Malaria Coordinator/Point Person
 - b. Designated Provincial Epidemiology and Surveillance Unit Officer
 - c. Compilation of all Case Investigation Forms
 - d. Compilation of all malaria epidemiological and activity reports

Box 2. Criteria and Requirements For Declaring Provinces as Malaria-Free (DOH, 2021)

- D. Presence of a Functional system for Diagnosis and Treatment of Malaria with the following minimum requirements:
 - a. Diagnostic and Treatment services are available at least at the RHUs and hospitals
 - b. An established referral system for diagnosing and treating malaria patients to the next level of care (whenever necessary)
 - c. Updated laboratory and patient registry in all health facilities
 - d. Compilation of all accomplished Laboratory Reports
 - e. An updated line list of all health facilities providing malaria diagnostic and treatment services must be available anytime.
 - f. Inventory of health workers involved in malaria treatment and diagnosis (indicate latest training acquired by health worker/microscopist)

- E. Compilation of all Malaria Reports in the past 10 years:
 - a. Indoor Residual Spraying (IRS)
 - b. Long Lasting Insecticide-treated Nets (LLIN)
 - c. Laboratory Reports
 - d. Malaria cases and death reports
 - e. Results of entomological surveys and maps

- F. Comprehensive discussion/report on the last occurring indigenous malaria cases and all imported cases in the province in the past 5 years
 - a. Epidemiology
 - b. Interventions

- G. Functional Entomological Surveillance with the following requirements:
 - a. Availability of the most recent Entomological Surveillance Report
 - b. Availability of a Trained Entomologist

- H. Functional Quality Assurance System for Malaria Microscopy with the following minimum requirements:
 - a. Trained Malaria Microscopist/s
 - b. Maintained regular submit of all blood films for validation at the Reginal Collaborating Center
 - c. Results of panel testing of Malaria Microscopist/s

- B. Additional Requirements**
 - 1. Quality Assurance System for vector control
 - 2. Local issuance/ordinance on Elimination Hub Requirements
 - a. Capacity to conduct Bioassay Test
 - b. Capacity to conduct Susceptibility Test
 - 3. Annual Operational Plan for Health (AOPH)/Provincial Investment Plan for Health (PIPH) to support provincial malaria activities and operations

- Declaration of Malaria-free Cities and Regions

This will involve a series of coordinative meetings with CHDs and LGUs to discuss declaration of cities and regions as malaria-free including the criteria and requirements for such declaration.

- **Malaria Elimination Hubs**

Malaria Elimination Hubs refer to structures or hubs equipped with diagnostic capabilities and laboratory equipment and supplies, anti-Malaria drugs and vector control commodities that will ensure universal access to reliable diagnosis, highly effective and appropriate treatment and preventive measures. The presence of elimination hubs is a criteria for declaring a province as Malaria-free.

Elimination Hubs are composed of: Provincial Malaria Coordinator and other local health staff trained on Malaria surveillance; Entomologist-designate; trained physician in Malaria case management; Health Promotion Officer; Medical Technologist/Validator; and Vector Control Response Team. These hubs are established in epidemic-risk and Malaria-free areas to prevent re-establishment/re-introduction of Malaria and thus are also responsible for overseeing and sustaining the Malaria-free status of these areas.

Epidemic-risk areas are low endemic areas where factors which may cause the occurrence of epidemic are present. These include influx of laborers, local or foreign tourists; and movement of indigenous people, military personnel and displaced populations from Malaria endemic provinces or countries and or in areas bordering endemic areas. Malaria-free areas are areas where there is no on-going local mosquito-borne Malaria transmission and that the risk of acquiring Malaria is limited to introduced cases only. The number of hubs would depend on the population size, geographical spread and location of endemic barangays and the accessibility of clients to these hubs. The guideline for the establishment of Malaria Elimination Hubs is provided through the AO 2013-0007 (DOH, 2013).

In 2021, DOH issued the guidelines on the establishment of Integrated Elimination Hub for Malaria and Lymphatic Filariasis (DOH, 2021c) as the reference/center in overseeing and sustaining Malaria-free and filarial-free status in epidemic-risk and disease-free provinces/cities. The establishment of this hub is aligned with the Public Health Service Team's focus on implementing UHC as a population-based health service package and integration to ensure equitable access to provide care especially in underserved areas.

- **Capacity Building**

Capacity building activities will be continued in the next Plan and these will include Elimination Training; Training on Basic Malaria Microscopy and refresher training for Medical Technologist; Training for Malaria Clinical Management and Integrated Vector Surveillance Training (Basic and Advance courses).

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 1.3							
Ensure continuous access to Malaria diagnosis and treatment and response capacity							
Indicator/Sub-strategy/Activity	Baseline	2023	2024	2025	2026	2027	2028
	2022						
Indicator 1.3.2 Proportion of health facilities belonging to each province Health Care Provider Network (HCPN) having received orientation on malaria vigilance (recognition of suspected malaria + knowledge of nearest diagnosis & treatment point) within latest year	NA	50%	50%	50%	50%	50%	50%
Indicator 1.3.3 Proportion of provinces with at least one hospital, where trained clinicians and medicines for management of severe malaria are available	NA	25%	25%	25%	25%	25%	25%
Indicator 1.3.4 Proportion of confirmed cases in non-endemic provinces, who are treated and followed up as per guidelines (criterion: Day 3, 7, 14, 21 28 slide)	NA	100%	100%	100%	100%	100%	100%
Indicator 1.3.5 Proportion of imported cases that were classified as severe	13.16%	<1%	<1%	<1%	<1%	<1%	<1%
Sub-strategy 1.3.1 Field Assessment of Malaria-free Provinces							
Activities							
1	Field Visit to Eligible Province	■	■	■	■	■	■
Sub-strategy 1.3.2 Establish and implement procedure for declaration of malaria-free cities and regions							
Activities							
1	Declaration of MF Cities and CHDs: Consultative Meetings with DOH Offices	■	■	■	■	■	■
2	Declaration of MF Cities and CHDs: Consultative Meetings with CHD and LGU	■	■	■	■	■	■
Indicator 1.3.1 Proportion of non-endemic provinces (all except Palawan) with 0 indigenous cases served	74.07	100	100	100	100	100	100

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 1.3							
Ensure continuous access to Malaria diagnosis and treatment and response capacity							
Indicator/Sub-strategy/Activity	Baseline						
	2022	2023	2024	2025	2026	2027	2028
by a functional Elimination Hub							
Sub-strategy 1.3.3 Establishment of Elimination Hubs							
Activities							
1	Meetings with LCEs on Elimination Hub EO	■	■	■	■	■	■
Sub-strategy 1.3.4 Stockpiles of Elimination Hubs							
Activities							
1	Procure lab supplies and equipment for microscopy	■	■	■	■	■	■
2	Procure RDTs	■	■	■	■	■	■
3	Distribution of RDTs	■	■	■	■	■	■
4	Artemether Lumefantrine	■	■	■	■	■	■
5	Primaquine 7.5 mg	■	■	■	■	■	■
6	Artesunate	■	■	■	■	■	■
7	Artesunate Pyronaridine	■	■	■	■	■	■
8	Distribution of Antimalarials	■	■	■	■	■	■
9	LLIN: Family size	■	■	■	■	■	■
10	Insecticide for IRS	■	■	■	■	■	■
11	Distribution, mounting, guidance (LLIN)	■	■	■	■	■	■
12	LLIN: Warehousing and storage for nets	■	■	■	■	■	■
13	IRS: Transport of insecticide from port to area of use	■	■	■	■	■	■
14	Warehousing IRS supplies	■	■	■	■	■	■
Sub-strategy 1.3.5 Capacity Building							
Activities							
1	Elimination Training	■	■	■	■	■	■
2	Training on Basic Malaria Microscopy for MTs	■	■	■	■	■	■
3	Refresher Training for MTs	■	■	■	■	■	■
4	Training for Malaria Clinical management	■	■	■	■	■	■
5	Integrated Vector Surveillance Training - Basic Course	■	■	■	■	■	■
6	Integrated Vector Surveillance Training - Advanced Course	■	■	■	■	■	■

Strategy 1.4 Ensure that travelers to endemic countries and endemic areas in Philippines have access to information

- Health Promotion

The IEC materials which were developed in the previous years and were deemed effective to specific areas will be reproduced for distribution and dissemination.

As for the malaria website developed the NMCEP with support from PSFI and WHO, this serves as a tool to increase the availability of evidence-based, understandable, easy-to-find sources of malaria health information. It also targets to provide virtual assistance about malaria diagnosis and treatment and other program related concerns for the online community. Thus, there is a need to update the website for this purpose.

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 1.4 Ensure that travelers to endemic countries and endemic areas in Philippines have access to information							
Indicator/Sub-strategy/Activity	Baseline	2023	2024	2025	2026	2027	2028
	2022						
Indicator 1.4.1 Number of people accessing the malaria website	NA	100	100	100	100	100	100
Sub-strategy 1.4.1 Health Promotion							
Activities							
1	Reproduction of IEC Materials	■	■	■	■	■	■
2	Maintenance of Malaria Website	■	■	■	■	■	■

4.5.2 Strategic Pillar 2: Governance and Leadership

To strengthen the capacity and enable them to manage and implement Malaria interventions in all provinces, there is a need to sustain and strengthen the functional organizational structures and Malaria workforce at all levels. There is also a need to strengthen the policy environment, management system and coordination to support Malaria elimination.

Strategy	Outcome and Higher Order Output Indicators
Strategy 2.1: Sustain and strengthen functional organizational structures and Malaria workforce at all levels	Indicator 2.1.1 <i>DOH-Central Offices with designated malaria point person</i>
	Indicator 2.1.2 <i>All DOH-ROs with appropriate number per category of staff for Malaria Program (RMC, Medtech, Entom)</i>
	Indicator 2.1.3 <i>All PHOs with designated Malaria Point Person, Entomologist, Medtech, and Medical Coordinator</i>
	Indicator 2.1.4

Strategy	Outcome and Higher Order Output Indicators
	<i>All MHOs in Palawan (including Puerto Princesa City) with designated Malaria Point Person, M/CESU personnel and Med Tech</i>
Strategy 2.2: Strengthen policy environment, management system and coordination in support of Malaria elimination	Indicator 2.2.1 <i>No. and proportion of LGUs with a malaria elimination and sustainability plan and corresponding budget within their respective LIPH / AOPs</i>
	Indicator 2.2.2 <i>No. of functional collaborating centers</i>

Strategy 2.1 Sustain and strengthen functional organizational structures and Malaria workforce at all levels

- HRH

To ensure delivery of services for the Malaria program and to sustain and strengthen functional organizational structures and Malaria workforce at all levels, there is a need to fill-up the positions of the following: Central Office MPP Plantilla Salary; Regional Malaria Point Person; Regional Medtech; Regional Entomologist; Provincial Malaria Point Person Provincial Entomologist; Provincial Medtech; Provincial Medical Coordinator; Palawan Municipal Malaria Point Person Palawan Municipal Medtech; and Palawan Municipal M/CESU.

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 2.1							
<i>Sustain and strengthen functional organizational structures and Malaria workforce at all levels</i>							
Indicator/Sub-strategy/Activity	Baseline						
	2022	2023	2024	2025	2026	2027	2028
Indicator 2.1.1 DOH-Central Offices with designated malaria point person	1	1	1	1	1	1	1
Indicator 2.1.2 All DOH-ROs with appropriate number per category of staff for Malaria Program (RMC, Medtech, Entom)	17x3	17x3	17x3	17x3	17x3	17x3	17x3
Indicator 2.1.3 All PHOs with designated Malaria Point Person, Entomologist, Medtech, and Medical Coordinator	82x4	82x4	82x4	82x4	82x4	82x4	82x4
Indicator 2.1.4 All MHOs in Palawan (including Puerto Princesa City) with designated Malaria Point Person, M/CESU personnel and Med Tech	24x3	24x3	24x3	24x3	24x3	24x3	24x3

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 2.1							
<i>Sustain and strengthen functional organizational structures and Malaria workforce at all levels</i>							
Indicator/Sub-strategy/Activity	Baseline	2023	2024	2025	2026	2027	2028
	2022						
Sub-strategy 2.1.1 HRH							
Activities							
1	Central Office MPP	■	■	■	■	■	■
2	Monitoring & Evaluation, Surveillance Officer	■	■	■	■	■	■
3	Vector Borne Diseases Specialist	■	■	■	■	■	■
4	OLMIS Manager	■	■	■	■	■	■
5	OLMIS IT Programmer	■	■	■	■	■	■
6	Entomologist	■	■	■	■	■	■
7	Admin Assistant	■	■	■	■	■	■
8	Regional Malaria PP	■	■	■	■	■	■
9	Regional Medtech	■	■	■	■	■	■
10	Regional Entomologist	■	■	■	■	■	■
11	Provincial MPP	■	■	■	■	■	■
12	Provincial Entomologist	■	■	■	■	■	■
13	Provincial Medtech	■	■	■	■	■	■
14	Provincial Medical Coordinator	■	■	■	■	■	■
15	Palawan Municipal MPP	■	■	■	■	■	■
16	Palawan Municipal Medtech	■	■	■	■	■	■
17	Palawan Municipal M/CESU	■	■	■	■	■	■

Strategy 2.2: Strengthen policy environment, management system and coordination in support of Malaria elimination

- Policy Development

The activities under policy development include the dissemination of Elimination Plan. Under this strategy, the respective Sustainability Plans and Road Map developed in 2022 will be revised based on updated data and cost requirements.

- Collaboration Centers

Collaboration Centers were intended to be fixtures for Malaria microscopy and entomology. They were called Collaboration Centers because the services were intended to be open to adjacent regions and all the provinces within the jurisdictions. The Collaboration Centers were intended to be training posts for Malaria microscopy, both basic and refresher courses as well as Basic Entomology courses including basic and refreshers trainings. They were also designed to be the center for microscopy quality control for all diagnostic facilities (primarily

microscopy and also RDT) under its monitoring jurisdiction. It also served as the center for Giemsa Stain Production and the Inter-regional slide bank for the QA.

In addition to capacity building for Malaria, other training courses are offered in some Collaboration Centers such as Basic Dengue Prevention and Control, Dengue Vector Surveillance, NTD Laboratory Diagnosis - GeneXpert, Direct Sputum Smear Microscopy Training, Rapid Diagnostic Training for COVID-19, and Integrated Microscopy Training on Parasitology.

- **Engagement with Private Sector**

The private sector and other sectors will be engaged to strengthen and develop intersectoral partnerships to accelerate malaria elimination in Palawan. The venue shall also be use to mobilize additional resources to improve health outcomes.

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 2.2 Strengthen policy environment, management system and coordination in support of Malaria elimination							
Indicator/Sub-strategy/Activity	Baseline						
	2022	2023	2024	2025	2026	2027	2028
Indicator 2.2.1 No. and proportion of LGUs with a malaria elimination and sustainability plan and corresponding budget within their respective LIPH / AOPs	NA	82	82	82	82	82	82
Sub-strategy 2.2.1 Policy Development and Private Sector Engagement							
Activities							
1	Dissemination of Elimination Plan	■					
2	Revisions of Sustainability Plan and Road Map	■	■	■	■	■	■
3	Engagement with Private Sector	■	■	■	■	■	■
Indicator 2.2.2 No. of functional collaborating centers	7	7	7	7	7	7	7
Sub-strategy 2.2.2 Collab Center							
Activities							
1	Meetings with RDs and CHD on the Maintenance and Operations of Collab Center	■	■	■	■	■	■
2	Meetings with OHL/CDC on the functions and integration of Collab Centers	■	■	■	■	■	■

4.5.3 Strategic Pillar 3: Financing

For this pillar, the strategy is to secure adequate government and non-government financing to sustain Malaria elimination at all levels in all provinces.

Strategy 3.1: Secure adequate government and non-government financial support for Malaria elimination

Strategy	Outcome and Higher Order Output Indicators
Strategy 3.1: Secure adequate government and non-government financial support for Malaria elimination	Indicator 3.1.1 DOH national and regional budget for the malaria program is sustained, if not increased

Strategy 3.1: Secure adequate government and non-government financial support for Malaria elimination

- Transition Plans

Individual municipal plans were developed during series of workshop conducted in 2022. in the first quarter of 2023. These plans, however, need to be revisited and updated based on new data on accomplishment.

As stipulated in the UHC (DOH, 2019a), province-wide and city-wide health systems will pool and manage the various sources of funding for health, such as DOH assistance, PhilHealth payments, donations, etc., in a Special Health Fund (SHF). The SHF can be used for both population-based and individual-based health services, health system operating costs, capital investments and remuneration of additional health workers and incentives for all health workers. Since this is a potential source of fund for LGUs, the Local Chief Executive and/or Local Health Board will be trained on the SHF and how this can be included in their respective Investment Plan for Health and Annual Operational Plan.

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 3.1: Secure adequate government and non-government financial support for Malaria elimination							
Indicator/Sub-strategy/Activity	Baseline	2023	2024	2025	2026	2027	2028
	2022						
Indicator 3.1.1 DOH national and regional budget for the malaria program is sustained, if not increased	PhP 219,616,041.00						

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 3.1: Secure adequate government and non-government financial support for Malaria elimination							
Indicator/Sub-strategy/Activity	Baseline	2023	2024	2025	2026	2027	2028
	2022						
Sub-strategy 3.1.1 Transition Plans							
Activities							
1	Capacity Building among LCEs/LHB on the SHF, LIPH/AOP	■	■	■	■	■	■

4.5.4 Strategic Pillar 4: Quality Assurance of Services

This pillar aims to ensure availability of quality Malaria services and timely detection of infection including response, information and evidence to guide Malaria elimination in all provinces. This will be done by ensuring high quality Malaria diagnosis and treatment through effective QAS as well as by ensuring high quality Malaria vector control. There is also a need to strengthen malaria case surveillance and response systems for malaria system. In addition, there is a need to maintain and strengthen M&E system including performance accountability.

Strategy	Outcome and Higher Order Output Indicators
Strategy 4.1: Ensure high quality Malaria diagnosis and treatment through effective quality assurance systems	Indicator 4.1.1a <i>Proportion of public health facilities providing microscopy services that participated in the QAS for each category</i>
	Indicator 4.1.1b <i>Proportion of public health facilities participating in QAS that passed QA for each category</i>
	Indicator 4.1.2 <i>Proportion of RDT used that follows DOH standards</i>
Strategy 4.2: Ensure high quality Malaria vector control	Indicator 4.2.1 <i>Proportion of population living in endemic areas, active and residual foci reporting having slept the previous night under an LLIN, disaggregated by type of net (see above) and by age- group and sex. Disaggregated also by endemic area/active foci/ residual foci (BUS data)</i>
	Indicator 4.2.2 <i>Proportion of houses in endemic areas of Palawan, or active foci, protected by indoor residual spraying, where spraying was complete as per independent post-spray supervision report</i>
	Indicator 4.2.3 <i>Number of municipalities conducting bioassay tests on LLINs, on sprayed surfaces</i>
Strategy 4.3: Strengthen Malaria case surveillance and response systems for Malaria elimination	Indicator 4.3.1 <i>Proportion of confirmed malaria cases notified within 24 hours of case confirmation</i>
	Indicator 4.3.2 <i>Proportion of confirmed malaria cases investigated and classified within 3 days of case confirmation</i>

Strategy	Outcome and Higher Order Output Indicators
	<p>Indicator 4.3.3 Proportion of foci investigated with appropriate response initiated within 5 days of case confirmation</p> <p>Indicator 4.3.4 Proportion of active and residual inactive foci reassessed annually</p>
<p>Strategy 4.4: Maintain and strengthen monitoring and evaluation system including performance accountability</p>	<p>Indicator 4.4.1 Proportion of DRUs submitting data and reports using OLMIS, according to the deadlines set by the national program</p>
	<p>Indicator 4.4.2 Proportion of DRUs with a trained and designated OLMIS point person</p>
	<p>Indicator 4.4.3 Number and % of monthly feed-back bulletins on malaria issued by the Palawan Provincial Health Office</p>
	<p>Indicator 4.4.4 Active Provinces monitored at least once per quarter by PHO Region 4B and national Program</p>
	<p>Indicator 4.4.5 Malaria Program performance reviewed annually, midterm and end-of-Plan</p>

Strategy 4.1 Ensure high quality Malaria diagnosis and treatment through effective quality assurance systems

- Quality Assurance

In Malaria diagnosis, microscopy remains as the gold standard. In the Philippines, guided by the NMCEP, microscopy services in RHUs and hospitals were already strengthened and immediate microscopy services in remote areas became possible through the establishment of Barangay Malaria Microscopy Centers (BMMCs). To achieve quality microscopy, a Quality Assurance System (QAS) must be implemented. This will ensure and maintain high accuracy, reliability and efficiency of laboratory services at various levels of health care,

Malaria diagnostic services are provided by either a medical technologist, a laboratory technician, other health staff or community volunteer worker. Quality of microscopy is sustained through a 3-level Quality Assurance System (QAS). At first level, microscopy training is provided by the National Core Group of Trainers (NCGT). The proficiency of microscopist are validated by certified provincial/regional Malaria microscopy validators (Level 2). In turn, the proficiency of validators is assessed by RITM-NRL every two years and competencies of NCGT members are assessed through the External Competence Assessment of Malaria Microscopists (ECAMM) (Level 3).

Trainings for Malaria microscopy have been put on-hold during the height of the COVID-19 pandemic due to mobility restrictions. Basic and refresher courses for Malaria microscopist resumed in 2022 only.

Prior to 2021, the usual reporting of the results on the proficiency of Malaria microscopist is through the manual reporting by the CHDs. After the roll-out of the OLMIS, validators have started to use the system as the reporting mechanism. Monitoring activities were also deferred during the height of the pandemic.

The last proficiency assessment of validators was conducted in 2018, without Monitoring and Supervision Training as a follow through activity. The conduct of these training activities was also affected by the restrictions brought by the COVID-19 protocols.

- TES

Therapeutic efficacy studies (TES) performed in sentinel sites by RITM and RHU personnel on behalf of the Program will continue to be supported as the basis for detecting emerging resistance reviewing treatment protocols and make updates as necessary. However, the 2022 TES had low enrollment rates, due to the decreasing number of cases in Palawan sentinel sites. Thus, it looks like the Philippines would need to shift to integrated drug efficacy surveillance (iDES) to integrate drug resistance monitoring as part of routine malaria surveillance and response.

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 4.1							
Ensure high quality Malaria diagnosis and treatment through effective quality assurance systems							
Indicator/Sub-strategy/Activity	Baseline						
	2022	2023	2024	2025	2026	2027	2028
Indicator 4.1.1a Proportion of public health facilities providing microscopy services that participated in the QAS for each category	0	100%	100%	100%	100%	100%	100%
Indicator 4.1.1b Proportion of public health facilities participating in QAS that passed QA for each category	0	100%	100%	100%	100%	100%	100%
Indicator 4.1.2 Proportion of RDT used that follows DOH standards	NA	100%	100%	100%	100%	100%	100%
Sub-strategy 4.1.1 Quality Assurance							
Activities							
1	National Competency Assessment for Malaria Microscopists (Validators)	■	■	■	■	■	■
2	Outreach training and supportive supervision of Malaria Validators	■	■	■	■	■	■

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 4.1							
Ensure high quality Malaria diagnosis and treatment through effective quality assurance systems							
Indicator/Sub-strategy/Activity	Baseline	2023	2024	2025	2026	2027	2028
	2022						
3	Maintenance of Malaria Slide Banks	■	■	■	■	■	■
4	External Competency Assessment for Malaria Microscopists (Validators)	■	■	■	■	■	■
Sub-strategy 4.1.1 TES							
Activities							
1	Integrated drug efficacy surveillance	■	■	■	■	■	■
Sub-strategy 4.1.1.5 Quality Assurance (Palawan)							
Activities							
1	QA Visit and Facility Monitoring	■	■	■	■	■	■
2	Provincial Malaria Validators Meeting	■	■	■	■	■	■
3	Malaria Microscopy QA Validation and Onsite Visits	■	■	■	■	■	■

Strategy 4.2 Ensure high quality Malaria vector control

- Quality Assurance Vector Control

M&E for IRS should be updated in line with international recommendations to include reporting on volumes of insecticides used and on post-spraying supervision. With the intense use of pyrethroids for malaria control and all kinds of purposes across sectors, there is a need to conduct annual close monitoring of susceptibility.

Built-in QA mechanisms for vector control measures include the regular conduct of bioassay tests on used LLIN and sprayed surfaces. Bio-assay tests on LLINs will be conducted only in Palawan, while bioassay testing after IRS will be conducted in every province, where IRS is implemented routinely. Also, in endemic municipalities of Palawan, “Bednet” Utilization Surveys (BUS) will be conducted.

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 4.2							
Ensure high quality Malaria vector control							
Indicator/Sub-strategy/Activity	Baseline	2023	2024	2025	2026	2027	2028
	2022						
Indicator 4.2.1 Proportion of population living in endemic areas,	94.53%		98%		98%		98%

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 4.2 Ensure high quality Malaria vector control							
Indicator/Sub-strategy/Activity	Baseline	2023	2024	2025	2026	2027	2028
	2022						
active and residual foci reporting having slept the previous night under an LLIN, disaggregated by type of net (see above) and by age-group and sex. Disaggregated also by endemic area/active foci/ residual foci (BUS data)							
Indicator 4.2.2 Proportion of houses in endemic areas of Palawan, or active foci, protected by indoor residual spraying, where spraying was complete as per independent post-spray supervision report	-	100%	100%	100%	100%	100%	100%
Indicator 4.2.3 Number of municipalities conducting bioassay tests on LLINs, on sprayed surfaces	1	9	9	9	9	9	9
Sub-strategy 4.2.1 QA Vector Control							
Activities							
1	Post Spraying Supervision	■	■	■	■	■	■
2	Integrity and durability monitoring of LLIN in the field	■	■	■	■	■	■
3	BUS Studies	■	■	■	■	■	■
4	Bioassay LLIN	■	■	■	■	■	■
5	Wall Bioassay	■	■	■	■	■	■
6	Insecticide for Susceptibility	■	■	■	■	■	■
7	Materials for Bio-assay	■	■	■	■	■	■

Strategy 4.3 Strengthen Malaria case surveillance and response systems for Malaria elimination

- 1-3-5

The risk of re-establishment/re-introduction of the parasite is always present coming from outside the country and from the remaining active foci of Malaria locally. The 1-3-5 response strategy transform the control-oriented Malaria surveillance system into a core intervention to meet the need of a resilient Malaria program for elimination. It aims to prevent the re-

establishment/re-introduction of Malaria in cleared areas i.e., Malaria-free declared provinces; zero indigenous Malaria provinces and municipalities with API <1/1,000 population.

The 1-3-5 response strategy corresponds to specific time schedules when specific activities should have been undertaken. The point of reference is Day zero (0), the date when the patient is seen, examined and confirmed by laboratory.

Day 1 is the maximum interval between laboratory confirmation and the time when the confirmed case is reported, i.e., suspect cases are immediately detected and notified within 24 hours of consultation.

Day 3 is the maximum interval between laboratory confirmation and the time when investigation is undertaken by the Provincial Investigating Team. During this time, all cases are investigated thoroughly to confirm the diagnosis and treatment and classify types of cases within 72 hours of notification.

Day 5 is the maximum time when the appropriate and decided interventions should have been undertaken. This means that all focus investigation are conducted to each confirmed case within five days of case notification to determine the types of the focus, and take actions within five days of case notification to response to the intervention needs of different types of focus.

Foci investigation is done in areas where there is the presence of an imported case, induced Malaria case or a vivax relapse in an area with very low transmission rates and have reached pre-elimination status, elimination or Malaria-free status. It is undertaken to assess the relative risk of secondary transmission/re-establishment/re-introduction of Malaria or Malaria transmission/ resurgence. It provides a guide in determining the appropriate response or course of action to the occurrence of a case.

Technical basis for the 1-3-5 surveillance format is that each erythrocytic cycle takes 48 to 72 hours depending on the specie. With each erythrocytic cycle, more parasites produced, clinical progression follows. The longer the disease the more serious a patient gets and the patient also becomes infectious. Therefore, the goal is to find the case early, treat and then investigate. That is, to avoid progression to severity, prevent infectiousness and halt transmission.

The detailed steps of the 1-3-5 response strategy is provided in Box 3 from the NMCEP Manual of Operations/Malaria MoP (DOH, 2018a).

Box 3: Steps in 1-3-5 Response Strategy (DOH, 2018a)		
One (1)	1	Malaria Suspect? Go to step 2 Note: From all levels of health care inclusive of private and public clinics and hospitals.
	2	Confirmatory Test (Microscopy or RDT)

Box 3: Steps in 1-3-5 Response Strategy (DOH, 2018a)	
	<p>If negative: Repeat the test after 8 to 24 hours. If test remains negative, stop.</p> <p>If positive, Go to Step 3.</p> <p><i>Note: BSMP must be made among RDT positives to establish baseline for case follow-up.</i></p>
	<p>3 Treat case accordingly upon confirmation of diagnosis (Malaria MoP, page 46).</p> <p>Go to Step 4.</p>
	<p>4 Report case to Municipal/Provincial/Regional Epidemiology Surveillance Unit (MESU, PESU, RESU) within 24 hours with the following information:</p> <ul style="list-style-type: none"> • Name • Age • Sex • Complete residential address of the patient • Malaria Diagnosis and Treatment given • Name, address and contact details of facility/health worker <p>Go to Step 5.</p> <p><i>Note: Case notification can be through online/offline Philippine Integrated Disease Surveillance and Response (PIDSRS) or cellular phones whichever is faster.</i></p>
	<p>5 MESU confirms receipt of notification and together with MMC validate, investigate, and classify the case using Malaria Investigation Form (Malaria MoP, page 106)</p> <ul style="list-style-type: none"> • Imported • Relapse • Introduced • Indigenous <p>Go to Step 6.</p>
	<p>6 MESU encode the data to PIDSRS</p>
	<p>Three (3)</p> <p>7 Municipal Malaria Coordinator (MMC) do reactive case detection (RACD)</p> <p>Introduced case/s. Go to Step 8.</p> <p>No positive cases, repeat 7 and stop after two (2) rounds of no positive tests. Go to Step 13.</p> <p><i>Note: Immediate treatment of positive cases is a must.</i></p>
<p>8 Determine classification of focus from foci registry</p> <p>Active focus. Go to Step 10.</p> <p>Residual focus. Go to Step 11.</p> <p>Cleared focus. Go to Step 12.</p> <p>Unclassified focus. Go to Step 9.</p> <p>Classification not updated. Go to Step 9.</p>	

Box 3: Steps in 1-3-5 Response Strategy (DOH, 2018a)		
		<i>Note: Once an indigenous case appeared in residual or cleared focus it immediately reverts to active focus classification. Foci registry must be updated as frequent as possible. Municipalities must keep updated list of Malaria foci.</i>
	9	Do focus investigation using the Focus Investigation Form (Malaria MoP, page 110). If receptive, Go to Step 8. If non-receptive, Go to Step 13. <i>Note: Receptive foci are those with Malaria vector mosquitoes. A receptive focus will have high vulnerability if there is high population flow.</i>
Five (5)	10	Activities for Active Focus <ul style="list-style-type: none"> • Do integrated vector management (IVM) within 5 days from case notification • Vector Control (LLIN/IRS) • Reactive Active Case Detection (ACD) • Proactive ACD • Health Education Go to Step 13.
	11	Activities for Residual Focus <ul style="list-style-type: none"> • Enhanced PCD • PACD + RACD • Treatment of cases • Vector Control • Health Promotion Go to Step 13.
	12	Activities for Cleared Focus <ul style="list-style-type: none"> • ACD several rounds • Assess risk of transmission • PCD • Treatment of all positive cases • Health promotion Go to Step 13.
	13	Update/Register focus in foci registry

- Investigation and Response Case Surveillance

This includes activities such as report validation, investigation and response and transition from Epidemiology Bureau-Public Health Service Team to Epidemiology Bureau-Centers for Disease Control and Prevention.

- Vector Surveillance

Vector surveillance includes susceptibility testing at two sentinel sites in the high endemic municipalities in southern Palawan, and every two years in one site per Region in Provinces with 0 indigenous malaria cases.

In 2020, vector mapping activities were deferred due to strict COVID-19 protocols and limited mobility. With the easing of health protocols, it is expected that different regions will start conducting vector mapping again. Entomological surveillance activity in Palawan is expected to ramp up this 2022- 2023 given the need to map different foci to examine and manage better areas where local cases are found.

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 4.3							
Strengthen Malaria case surveillance and response systems for Malaria elimination							
Indicator/Sub-strategy/Activity	Baseline						
	2022	2023	2024	2025	2026	2027	2028
Indicator 4.3.1 Proportion of confirmed malaria cases notified within 24 hours of case confirmation	64.10%	100%	100%	100%	100%	100%	100%
Indicator 4.3.2 Proportion of confirmed malaria cases investigated and classified within 3 days of case confirmation	76.92%	100%	100%	100%	100%	100%	100%
Indicator 4.3.3 Proportion of foci investigated with appropriate response initiated within 5 days of case confirmation	46.15%	100%	100%	100%	100%	100%	100%
Indicator 4.3.4 Proportion of active and residual inactive foci reassessed annually	100%	100%	100%	100%	100%	100%	100%
Sub-strategy 4.3.1 Orientation of 1-3-5							
Activities							
1	Orientation of Malaria Elimination Strategy	■	■	■	■	■	■
Sub-strategy 4.3.2 Investigation and Response/Case Surveillance							
Activities							
1	Report Validation	■	■	■	■	■	■
2	Investigation and Response	■	■	■	■	■	■
3	Transition to EB-PHST/EB-CDC	■	■	■	■	■	■
Sub-strategy 4.3.3 Vector Surveillance							
Activities							
1	Vector Surveillance (CBT) Rest of the Country	■	■	■	■	■	■

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 4.3							
Strengthen Malaria case surveillance and response systems for Malaria elimination							
Indicator/Sub-strategy/Activity	Baseline	2023	2024	2025	2026	2027	2028
	2022						
2	Vector Surveillance (CBT) Palawan	■	■	■	■	■	■

Strategy 4.4 Maintain and strengthen monitoring and evaluation system including performance accountability

- OLMIS

The Mandatory Reporting of Notifiable Diseases and Health Events of Public Health Concern Act (RA 11332) stipulates that the establishment of public health information and surveillance systems to facilitate timely and accurate data recording and reporting is an integral part of response to public health emergencies (Official Gazette, 2018). This mandate is of prime importance for the NMCEP which puts surveillance as a core approach to prevent disease resurgence in Malaria-free areas in order to achieve the vision of Malaria-free Philippines by 2030.

While there are existing information systems supporting the needs of the NMCEP, there is a need to generate real-time information on Malaria foci investigations, foci register, case register, laboratory register, analytical tables and maps. Thus, the Online Malaria Information System (OLMIS) was developed and conceptualized to realize efficient collection and reporting of Malaria information from all levels of the health care delivery system. The OLMIS is NMCEP’s main repository of data and official information system to collect and consolidate Malaria-related information.

The creation of OLMIS followed the Health Enterprise Architecture prescribed by the DOH and is in line with the UHC Law’s directive on the maintenance of interoperable information system. The OLMIS is also in-sync with the F1+ framework as it answers the need for intensified strategies for disease-free zone initiatives particularly surveillance and monitoring. It complements the Philippine eHealth Strategic Framework & Plan 2014-2022 towards a vision of ICT-enabled Philippine Health System towards better and equitable access to quality health care services and easier access to secure real-time and quality health data and information for evidence-based decision-making. Its implementation aims to promote public health action to respond effectively in disease outbreak and prevent disease resurgence in Malaria-free areas, while upholding and safeguarding the data privacy rights of every individual. The processing of personal information of Malaria cases through this system is in accordance with RA 10173 of the Data Privacy Act, its IRR and other relevant National Privacy Commission (NPC) issuances (NPC, 2012).

The OLMIS was developed in 2017 via android and web-based applications. The android application of the OLIMIS (version 1) allows for downloading of blank registries, data encoding and submission. The web-based application (version 1.5) includes a dashboard per user level and modules i.e., registries, reports, reports, user account admin, linelist and stratification modules. The OLMIS android app was deployed in Palawan, Sultan Kudarat and Occidental Mindoro while the OLMIS web-based app was used by the rest of the provinces. The OLMIS Point Persons identified in the CHD, PHO and HUC lead the implementation of the OLMIS, including roll-out at the RHU level. The OLMIS Point Persons in all regions were provided the OLMIS official accounts.

In 2018, the OLMIS was piloted among sites assisted by the TGF such as Cagayan, Occidental Mindoro, Palawan, Davao del Norte, Sultan Kudarat, Sulu and Maguindanao. The OLMIS tablets were distributed in selected facilities in Palawan, Occidental Mindoro and Sultan Kudarat. In the same year, all existing reporting and recording systems for Malaria have been replaced by OLMIS. The NMCEP introduced a new set of Malaria forms in registries to complement the 1-3-5 Malaria surveillance strategy to ensure early case notification, treatment and response to any Malaria case via digital technology. These include the Malaria Laboratory Registry, Malaria Patient Registry, Vector Control Registries (Malaria Foci Registry, LLIN Distribution Registry and IRS Registry), Malaria Investigation Form and Foci Investigation Form. These forms are geared towards standardizing the recording and reporting platforms for NMCEP at all levels and in all health facility nationwide to facilitate easy collection, consolidation and validation of Malaria data and reports. The forms also served as the only official source of data for the program's reportorial needs through the OLMIS i.e., Malaria laboratory, case and vector control data as stipulated in DM 2019-0358: Utilization of the NMCEP Registries and Forms (DOH, 2019b).

In Palawan, which remains to be the epicenter of Malaria cases in the country, though the implementation of these new set of tools is on-going, challenges have been raised. Since the Province performs much of the activities such as diagnostic, treatment and vector control, recording and reporting are also the bulk of intervention data. This leads to delays in reporting as it takes time to enter all data in OLMIS. Given this limitation, the program implementers at the frontline suggested the use of monthly summary report forms to facilitate timely data consolidation and reporting prior to completion of data entry in OLMIS. Through the issuance of DM 2021-0089: Implementation of Malaria Monthly Summary Report Forms at Barangay and Municipal Level in Palawan (DOH, 2021d), the Regional MCEP Coordinators were directed to facilitate and monitor the implementation of the following Malaria Monthly Summary Report forms in Palawan: Malaria Laboratory Registry Monthly Report Form (Barangay Level); Malaria Patient Registry Monthly Report Form (Barangay Level); Malaria Laboratory Registry Monthly Report Form (RHU Level); Malaria Patient Registry Monthly Report Form (RHU Level); LLIN Distribution Summary Report Form (RHU Level); and IRS Activity Summary Report Form (RHU Level).

- [Monitoring and Evaluation](#)

Monitoring of the Malaria Program will be conducted at both national and sub-national levels. Joint monitoring by external and local groups of stakeholders is also encouraged for wider coverage and an integrated, inclusive view of the Program in the context of the local health system and multi-stakeholder inputs. The Southern Palawan municipalities which currently have high incidence of malaria will be especially targeted for supervisory outreach from the national, regional and provincial level to ensure sound implementation of strategies. As the next five years are crucial for the country, annual reviews will be conducted religiously as well as the mid-term and endterm reviews.

- Evidence Generation

The next few years will also be an opportunity to document and provide evidence such as conduct of prevalence survey in Mindoro Island. The evaluation of Malaria Elimination Strategy will be a very significant input particularly in the conduct of implementation reviews and M&E.

- Monitoring and Supervision (Palawan)

In Palawan, monitoring and supervision will be a combination of onsite data validation, meeting, review and planning. The activities include: Onsite Data Validation, meetings (Malaria Service Providers, stakeholders, BTWG) and Program Implementation Reviews (PIR) and planning.

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 4.4							
Maintain and strengthen monitoring and evaluation system including performance accountability							
Indicator/Sub-strategy/Activity	Baseline						
	2022	2023	2024	2025	2026	2027	2028
Indicator 4.4.1 Proportion of DRUs submitting data and reports using OLMIS, according to the deadlines set by the national program	NA	100%	100%	100%	100%	100%	100%
Indicator 4.4.2 Proportion of DRUs with a trained and designated OLMIS point person	NA	100%	100%	100%	100%	100%	100%
Indicator 4.4.3 Number and % of monthly feed-back bulletins on malaria issued by the Palawan Provincial Health Office	NA	12	12	12	12	12	12
Sub-strategy 4.4.1 OLMIS							
Activities							

Strategy, Indicator, Sub-Strategy and Activity								
Strategy 4.4								
Maintain and strengthen monitoring and evaluation system including performance accountability								
Indicator/Sub-strategy/Activity	Baseline	2023	2024	2025	2026	2027	2028	
	2022							
1	Hiring One (1) Programmer to Support initial development	■	■	■	■	■	■	
2	Physical Server Upgrade: - PowerEdge R530 Server (64GB RAM) for the database server - PowerEdge R240 Server (64GB RAM) for NMCEP, training, and test sites	■						
3	Server Security Subscription (Firewall, Pentest Tool, Proxy Server)	■	■	■	■	■	■	
4	SSL Certificate and DNS Registration	■	■	■	■	■	■	
5	Server Utilization Monitoring Tool	■	■	■	■	■	■	
6	Training for Server Administrator Staff	■	■	■	■	■	■	
7	Training for Android Application and IOS Application	■	■	■	■	■	■	
8	Internet Subscription of Servers	■	■	■	■	■	■	
9	Reproduction of the Malaria Registries and Forms	■	■	■	■	■	■	
10	Data Review in Palawan	■	■	■	■	■	■	
11	Roll-Out and Re-orientation of OLMIS in 82 provinces	■	■	■	■	■	■	
12	Data Quality Check for all Palawan Encoders	■	■	■	■	■	■	
13	Semi Annual data review sessions with Regional and Provincial OLMIS Point Persons	■	■	■	■	■	■	
14	OLMIS Updates and User's conference	■			■		■	
Indicator 4.4.5 Malaria Program performance reviewed annually, midterm and end-of-Plan		2	1	1	2	1	1	2
Sub-strategy 4.4.2 Monitoring & Evaluation								
Activities								
1	Annual Review		■	■	■	■	■	
2	Midterm Review			■				
3	Endterm Review						■	

Strategy, Indicator, Sub-Strategy and Activity							
Strategy 4.4 Maintain and strengthen monitoring and evaluation system including performance accountability							
Indicator/Sub-strategy/Activity	Baseline	2023	2024	2025	2026	2027	2028
	2022						
Sub-strategy 4.4.3 Evidence Generation							
Activities							
1	Prevalence Survey in Mindoro Island		■				
2	Evaluation of Malaria Elimination Strategy			■			
Indicator 4.4.4 Active Provinces monitored at least once per quarter by PHO Region 4B and national Program		NA	4	4	4	4	4
Sub-strategy 4.4.4 Monitoring & Supervision (Palawan)							
Activities							
1	Onsite Data Validation	■	■	■	■	■	■
2	Malaria Service Providers Meeting	■	■	■	■	■	■
3	Stakeholders Meeting	■	■	■	■	■	■
4	BTWG Meeting	■	■	■	■	■	■
5	PIR	■	■	■	■	■	■
6	Municipal PIR and Planning	■	■	■	■	■	■

Malaria under MTESP

4.6 Estimated Budget

The total estimated funds required for effective implementation of the MTESP 2023-2028 for six years is PhP 3,838,651,286. In Table 33, the amount allocated for each strategy and by year is shown. Of the total amount for six years, 33% are allocated for Strategy 1.1. Specifically, this is for maintaining, expanding, strengthening, adapting and augmenting anti-malaria interventions in areas with Malaria transmission i.e., Palawan. About 30% are allocated for Strategy 1.3 which is for ensuring continuous access of the rest of the country to malaria diagnosis, treatment and preventive measures in zero-indigenous malaria and malaria-free provinces.

Table 33: Funds Allocated by Strategy and by Year (PHP), 2023-2028

Strategy	2023	2024	2025	2026	2027	2028
1.1 Maintain, expand, strengthen, adapt, and augment anti-malaria interventions in areas with malaria transmission (Palawan)	217,085,196	208,767,173	210,866,488	180,770,513	229,948,379	199,740,576
1.2 Implement responsive malaria interventions among high-risk mobile populations	2,083,754	135,184,133	120,783,484	165,093,632	-	-
1.3 Ensure continuous access to malaria diagnosis, treatment and preventive measures in zero-indigenous malaria and malaria-free provinces (rest of country)	233,241,448	201,590,374	191,507,121	182,052,204	174,697,313	179,260,694
2.1 Sustain and strengthen functional organizational structures and malaria workforce at all levels (all provinces)	110,377,173	112,873,383	115,695,217	118,587,598	121,552,287	124,591,095

Strategy	2023	2024	2025	2026	2027	2028
2.2 Strengthen policy environment, management system, and coordination in support of malaria elimination (all provinces)	406,800	205,000	210,125	215,378	220,763	226,282
3.1 Secure adequate government and non-government financial support for malaria elimination (all provinces)	154,000	157,850	161,796	165,841	-	-
4.1 Ensure high quality malaria diagnosis and treatment, through effective quality assurance systems	11,032,133	8,528,513	11,134,138	7,415,469	11,697,804	7,790,877
4.2 Ensure high quality of malaria vector control	2,603,500	4,370,088	2,735,302	4,591,323	2,873,777	4,823,759
4.3 Strengthen malaria case surveillance and response systems for malaria elimination	3,076,538	2,599,275	2,658,107	2,950,947	2,547,260	2,610,941
4.4 Maintain and strengthen monitoring and evaluation system including performance accountability	37,472,523	43,929,474	29,793,648	32,013,830	29,253,275	31,681,719
Grand Total	617,533,064	718,199,262	685,545,427	693,856,735	572,790,857	550,725,942

Table 34 shows that among the commodities, RDT has the highest allocation at 29% followed by insecticide (16%), family size LLIN (14%) and Pyronaridine Artesunate – Adult (11%). The commodities in which external/GF funding has the higher allocation than the Government of the Philippines are: single size LLIN (100%) and Pyronaridine Artesunate tablet (100%). For some commodities the government has no counterpart but the external counterpart is less than 100%. These are: Artemether Lumefantrine 20mg/120mg - 24 tabs (33%); Artemether Lumefantrine

20mg/120mg - 6 tabs (34%); Primaquine 7.5 mg (33%); Artesunate 60 mg (33%); Pyronaridine Artesunate – Adult (66%); and Pyronaridine Artesunate – Adult (66%).

Table 34: Funds Allocated Per Commodity, by Source of Fund and by Year, 2024-2026

Commodities	2024			2025			2026		
	Country Need	External Funding	GOP	Country Need	GF	GOP	Country Need	GF	GOP
Family Size LLIN	199,474	54,762	144,712	204,557	84,470	120,087	151,003	96,503	54,500
Single Size LLIN	76,566	76,566	0	36,022	36,022	0	15,012	15,012	0
Malaria RDT	396,875	198,675	198,200	387,000	188,800	198,200	380,125	181,925	198,200
Artemether Lumefantrine 20mg/120mg (24 tabs)	132,480	0	0	122,400	120,960	0	111,600	0	0
Artemether Lumefantrine 20mg/120mg (6 tabs)	1,840	0	0	938	938	0	0	0	0
Primaquine 7.5 mg	103,000	0	0	96,700	96,700	0	91,996	0	0
Artesunate 60 mg	3,515	0	0	3,440	3,440	0	3,377	0	0
Pyronaridine Artesunate - Adult	145,643	0	0	138,461	138,461	0	145,643	145,643	0
Pyronaridine Artesunate - Adult	48,649	0	0	48,649	48,649	0	48,649	48,649	0
Insecticide	218,857	-	218,857	218,857	-	218,857	205,072	-	205,072

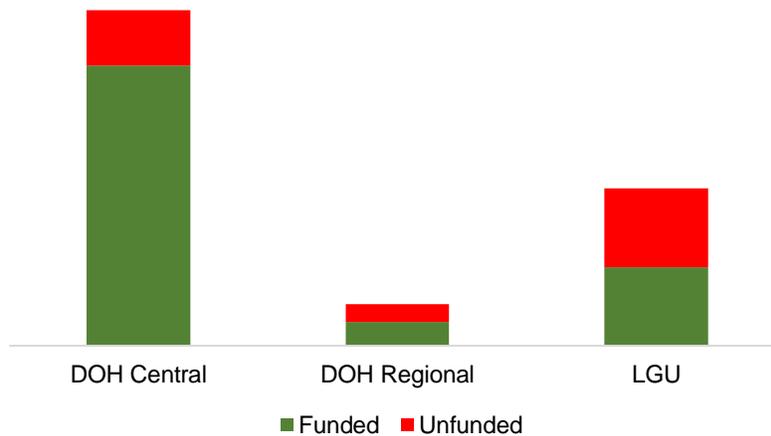
Table 35. Transition and Sustainability Plan Stakeholder Map Philippines, 2023-2028

Strategy/ Major Activity	Primary Investment Source					
	2023	2024	2025	2026	2027	2028
Anti-malaria drugs	GFATM	GFATM				
		DOH	DOH	DOH	DOH	DOH
Malaria RDT	GFATM	GFATM				
	DOH	DOH	DOH	DOH	DOH	DOH
Insecticides (for IRS)	DOH	DOH	DOH	DOH	DOH	DOH
LLIN Procurement	GFATM	GFATM for Palawan requirement	GFATM for 50% Palawan requirement			
	DOH	DOH	DOH	DOH	DOH	DOH

4.7 Funding Gap

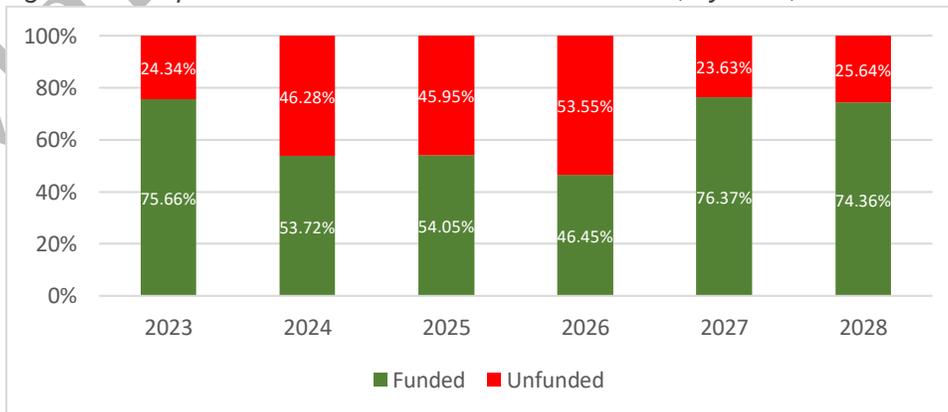
The total estimated fund of PhP 3,833,983,017 is a combination of DOH and CHD as well as LGU counterpart funds. The percent share to total of DOH Central counterpart is 63% while that of the LGU is 28% and of the CHD 9%. In Figure 15, the proportion of combined DOH Central and CHD counterpart that is funded is 62% (funding gap of 38%). As for the LGU counterpart fund, only 45% of the total is funded (funding gap of 55%). While DOH has the major contribution, it is important to take note that the LGU's role in the program is equally important particularly ensuring that the needed human resource are in-place. There is a need to intensify advocacy to these LGUs at the same time a need to build their capacity to utilize the SHF which can supplement this funding gap.

Figure 15. Proportion of Funded and Unfunded to Total, by Source, 2023 to 2028



By year, the proportion of funded varies from 54% to 76%. This is equivalent to funding gap ranging from 24% to 54% (Figure 16). The highest funding gap is noted in 2026. The funding gap identified in 2024-2026 is due to the intensified activities to accelerate the burden reduction and achieve zero cases in Palawan by 2026.

Figure 16. Proportion of Funded and Unfunded to Total, by Year, 2023 to 2028



4.8 Implementation Arrangements

Overall, **the DOH-IDO** will lead in the implementation of the Plan and coordination with the DOH Offices (National Center for Health Promotion, HHRD, etc.) and development partners in the management and implementation of the planned activities. The TWG and sub-thematic working groups will provide the technical direction and oversight in the implementation of the Plan.

At the national level, the National Malaria Program Manager will be responsible in managing all activities of the Government of the Philippines and donors to ensure that all resources allotted and assistance provided are utilized efficiently, effectively and according to the approved Strategic Plan.

At the regional level, the Regional Malaria Program Coordinators (RMPC) in each of the regional offices will be responsible in coordinating all activities towards malaria elimination in the region. They will coordinate with other DOH Regional Offices and with personnel involved in the Malaria Program, particularly the regional entomologist, sanitary engineers, medical technologist, Health Education and Promotion Officers and the RESU. The RMPC will oversee the conduct of GOP- and externally-funded malaria activities within the region to ensure that resources and activities are synchronized to achieve the Plan's target impact.

The Regional Office will be provided support in organizing and establishing a multi-sectoral coordination group of non-DOH development partners and the private sector that will support and commit in the country's goal to eliminate malaria.

The 16 regions where the 82 provinces are found can be classified into four based on the classification of the provinces.

1. All malaria-free provinces: These are provinces in Regions CAR, 1, 4A, 6, 7, 8, 10 and 13.
2. Combination of malaria-free and elimination provinces: These are in Regions 2, 3, 5, 9, 11 and 12.
3. All elimination provinces: BARMM has all of its six (6) provinces classified as elimination provinces.
4. Combination of malaria-free, elimination and control provinces: Region 4B has provinces classified as malaria-free (n=3), elimination (n=1) and control (n=1).

Region	Malaria-Free	Elimination	Control	Total Provinces
TOTAL	66	15	1	82
CAR	6	0	0	6

Region	Malaria-Free	Elimination	Control	Total Provinces
	(Abra, Apayao, Benguet, Ifugao, Kalinga, Mt. Province)			
1	4 (Ilocos Norte, Ilocos Sur, La Union, Pangasinan)	0	0	4
2	3 (Batanes, Nueva Vizcaya, Quirino)	2 (Cagayan Isabela)	0	5
3	5 (Aurora, Bataan, Bulacan, Pampanga, Tarlac)	2 (Nueva Ecija, Zambales)	0	7
4A	5 (Batangas, Cavite, Laguna, Quezon, Rizal)	0	0	5
4B	3 (Marinduque, Mindoro Oriental, Romblon)	1 (Mindoro Occidental)	1 (Palawan)	5
5	5 (Albay, Camarines Sur, Catanduanes, Masbate, Sorsogon)	1 (Camarines Norte)	0	6
6	6 (Aklan, Antique, Capiz, Guimaras, Iloilo, Negros Occidental)	0	0	6
7	4 (Bohol, Cebu, Negros Oriental, Siquijor)	0	0	4
8	6 (Biliran, Eastern Samar, Leyte, Northern Samar, Southern Leyte, Samar)	0	0	6
9	2 (Zamboanga del Norte, Zamboanga Sibugay)	1 (Zamboanga del Sur)	0	3
10	5 (Bukidnon, Camiguin, Lanao del Norte, Misamis Occidental, Misamis Oriental)	0	0	5
11	4 (Davao de Oro, Davao del Sur, Davao Occidental, Davao Oriental)	1 (Davao del Norte)	0	5

Region	Malaria-Free	Elimination	Control	Total Provinces
12	3 (Sarangani, South Cotabato, North Cotabato)	1 (Sultan Kudarat)	0	4
13	5 (Agusan del Norte, Agusan del Sur, Dinagat Islands, Surigao del Norte, Surigao del Sur)	0	0	5
BARMM		6 (Basilan, Lanao del Sur, Maguindanao Del Norte, Maguindanao del Sur, Sulu, Tawi Tawi)	0	6

At the LGU level, the LGUs will lead in the provision of all anti-malaria services and activities. The designated Provincial Malaria Coordinators will coordinate management and implementation of the Plan in their respective localities.

4.9 Sustainability Considerations

Within the health budget, the Malaria Program benefits from specially earmarked funds for disease elimination. Though the Disease Prevention and Control Bureau and IDO, it is also able to bid for special, additional funding derived from the Sin Tax Reform Law.

The World Bank classifies the Philippines as a lower-middle income country, which carries a 50% co-financing requirement when negotiating with the Global Fund. It also signals that the Philippines Malaria Program may be expected to graduate soon from intensive donor support through the Global Fund and similar mechanisms, on the basis of a combination of economic growth and reduced burden of disease. Approach to sustainability, transition and co-financing aspects of the Program can be understood through six (6) domains that approximate to the WHO health system building blocks: malaria financing; leadership; service delivery; workforce; information systems; and planning and management.

The DOH annual budget for malaria increased from PhP325.7 million to PhP375.1 million in 2021 and 2022, respectively (Table 36). The Government allocation represented more than 50% of the estimated annual budgetary requirement, including alignment with program reorientation to address elimination targets. The principal factors supporting increased centrally derived funds for malaria and other public health programs have been the Sin Taxes and broader economic growth.

Table 36: Funds for Malaria by Source and by Year (2021, 2022)

Source of fund	2021	2022
DOH	PhP189,288,583.00	PhP219,616,041.00
CHD	59,558,061.13	59,197,331.62
LGU	76,858,606.66	96,288,878.73
Total	PhP325,705,250.79	PhP375,102,251.35

Within the DOH, sub-allotment funds are available from the NSPCEM to Regional Health Offices. Disbursement and funding flow to peripheral levels may be unpredictable, although they are increasingly based on costed regional work plans and this improves alignment with predicted expenditure needs. At the provincial and municipal level, LGUs have more limited financial resources and the devolved health system creates barriers between the DOH and LGUs. Disbursement of DOH funds may be slow and, in Global Fund sites, the PR may step in to fill these gaps. There is no comprehensive central tracking of malaria expenditure at different levels and from different sources of funding, which obscures the efficient allocation of funds, tracking of malaria expenditure at all levels of the system, and the anticipation of future gaps. Leadership (including political commitment) The Philippines has joined other ASEAN countries in committing to eliminate malaria from the Asia-Pacific region by 2030. This is reflected in the vision of the updated NSPCEM: a malaria-free Philippines by 2030.

The DOH has responded to national level leadership needs by appointing a full-time Malaria Program coordinator. However, it has still not committed to addressing other HR and leadership related recommendations from the last two malaria program reviews. If this situation continues, there will be a continuing need for WHO and other partners to maintain high level technical support for DOH and the control and elimination of malaria. At sub-national level, local chief executives have an important role in determining the financing, visibility, and support that the malaria program needs (and receives). With frequent changes of administration, it is important to create policies that institutionalize the support that malaria elimination needs.

The following funding has been realized in the country for the response of Malaria. In 2021, the total funds allocated for the Malaria program is approximately 322 million pesos. This amount increased by 16% in 2022 with total funds allocated for the Malaria program amounting to approximately 373 million pesos (Table 13).

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Annexes

Malaria under MDEP

Annex A. Population at risk, Philippines, 2022

Province	Municipality	No. of Foci			Population-at-risk
		Active	Residual Non-Active	Cleared Up	
OCCIDENTAL MINDORO	Abra de Ilog	0	0	10	0
	Calintaan	0	0	7	0
	Looc	0	0	9	0
	Lubang	0	0	16	0
	Magsaysay	0	0	12	0
	Mamburao	0	0	15	0
	Paluan	0	0	12	0
	Rizal	0	0	11	0
	Sablayan	0	0	22	0
	San Jose	0	2	36	9,123
	Sta Cruz	0	0	11	0
PALAWAN	Aborlan	2	6	11	18,669
	Agutaya			10	-
	Araceli			13	-
	Balabac	6	7	7	56,396
	Bataraza	21	1		85,685
	Brooke's Point	12	6		75,358
	Busuanga			14	-
	Cagayancillo			12	-
	City of Puerto Princesa (Capital)	17	15	34	212,186
	Coron			23	-
	Culion			14	-
	Cuyo			17	-
	Dumaran			16	-
	El Nido (Bacuit)	2	3	13	12,943
	Kalayaan			1	-
	Linapacan			10	-
	Magsaysay			11	-
	Narra	5	2	16	33,022
	Quezon	13	1		69,233
	Rizal (Marcos)	11			56,877
Roxas		4	27	14,229	
San Vicente		7	3	27,662	
Sofronio Española	4	2	3	26,455	
Taytay	2	2	27	15,835	
SULTAN KUDARAT	Bagumbayan			19	-
	City of Tacurong			20	-
	Columbio			16	-
	Esperanza			19	-
	Isulan (Capital)			17	-
	Kalamansig		4	11	13,644
	Lambayong (Mariano Marcos)			26	-
	Lebak			27	-
	Lutayan			11	-
	Palimbang		7	33	13,099
	President Quirino			19	-
Sen. Ninoy Aquino			20	-	
Grand Total		95	69	681	740,416

Annex B. List of countries reporting Malaria cases (WHO, 2022)

AFRICA	AMERICAS
Angola	Belize
Benin	Bolivia (Plurinational State of)
Botswana	Brazil
Burkina Faso	Colombia
Burundi	Costa Rica
Cabo Verde	Dominican Republic
Cameroon	Ecuador
Central African Republic	French Guiana
Chad	Guatemala
Comoros	Guyana
Congo	Haiti
Côte d'Ivoire	Honduras
Democratic Republic of Congo	Mexico
Equatorial Guinea	Nicaragua
Eritrea	Panama
Eswatini	Peru
Ethiopia	Suriname
Gabon	Venezuela
Gambia	EASTERN MEDITERRANEAN
Ghana	Afghanistan
Guinea	Djibouti
Guinea-Bissau	Iran (Islamic Republic of)
Kenya	Pakistan
Liberia	Saudi Arabia
Madagascar	Somalia
Malawi	Sudan
Mali	Yemen
Mauritania	SOUTHEAST ASIA
Mayotte	Bangladesh
Mozambique	Bhutan
Namibia	Democratic People's Republic of Korea
Niger	India
Nigeria	Indonesia
Rwanda	Myanmar
Sao Tome and Principe	Nepal
Senegal	Thailand
South Africa	Timor-Leste
South Sudan	WESTERN PACIFIC
Togo	Cambodia
Uganda	Lao People's Democratic Republic
United Republic of Tanzania	Malaysia
Mainland	Papua New Guinea
Zanzibar	Republic of Korea
Zambia	Solomon Islands
Zimbabwe	Vanuatu
	Viet Nam